

Greener After

A Green Recovery Stimulus for a post-COVID-19 Europe

"A very large green investment plan delivers the necessary economic stimulus and builds resilience to future shocks."

Pascal Lamy et al., 2020

While assessing the full impact of the COVID-19 pandemic would be premature, it is already clear that this is the worst economic shock European economies have faced since World War II. The road to recovery will likely be long and bumpy. The European Commission's Spring 2020 Economic Forecast projects the EU economy to contract by 7.4% in 2020, while the EU-wide unemployment rate is expected to increase from 6.7% in 2019 to 9% in 2020, particularly affecting southern EU Member States¹.

¹ European Commission. 2020. "European economic forecast", Institutional paper No 125, May.

The roadmap to recovery adopted by the European Council on 21 April calls for an "unprecedented investment effort" for a "more resilient, sustainable and fair Europe"². In order to deliver on this mandate, the EU's Recovery Fund, which the European Commission is about to unveil, should thus be both massive in size and scope as well as boldly transformative in its content. This

² European Council. "A roadmap for recovery. Towards a more resilient, sustainable and fair Europe".

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is also in line with the resolution adopted by the European Parliament on 17 April³.

Before the crisis, and following the European Parliament elections last year, the European Union embarked on a new five-year strategic roadmap in which the decarbonisation and digitalisation of our economies have been prioritised. Pre-crisis tense debates about the economic and social costs of ecological benefits will no doubt be re-ignited as the recovery package will be debated among European institutions and the public at large.

After the adoption of adequate, immediate rescue measures⁴, we now turn to the recovery phase. Echoing calls for a green recovery⁵, this paper⁶ argues that a

very large green investment plan delivers the necessary economic stimulus and builds resilience to future shocks.

Delivering on such an ambitious and transformative mandate can only happen under some specific conditions which need to be explicitly acknowledged.

We argue and exemplify that:

- the economic and environmental ambitions of the EU's COVID-19 recovery plan should go hand in hand, resulting in a double win;
- delivering on both sides requires a rigorous selection of investment programmes, targeting sectors with high potential for economic stimulation, job creation and ecological transformation.

The first part of this paper presents the criteria policy-makers can use to assess which investments can be part of a green economic stimulus programme. First, green recovery investments consist of timely, temporary and targeted measures able to stimulate the economy quickly and until it recovers -for instance, over the next five years. Second, green recovery investments do accelerate the structural transformation of the economy towards a more healthy and resilient future, characterised by zero pollution, biodiversity restoration and climate neutrality by 2050.

The second part of the paper uses those criteria to provide concrete investment recommendations in five sectors - buildings, road mobility, clean innovation, circular economy and coastal tourism -that are essential to a genuine green recovery. In those five sectors alone, the EU and its Member States could safely invest at least €800 billion in the next five years, as part of green recovery plans.

This paper further recommends that the European Commission and national governments should assess the contribution of other key sectors that are beyond the

³ European Parliament. 2020. "EU: Parliament adopts resolution on coordinated action to combat Coronavirus", *OneTrust*, April.

⁴ The Jacques Delors Centre in Berlin and the Jacques Delors Institute in Paris have been publishing on immediate rescue measures in response to the COVID-19 crisis, cf. Eisl A. 2020. "Fiscal policy-making in the time of Coronavirus", *Blogpost*, IJD, March; Fernandes S. & Vandenbroucke F. 2020. "SURE: A welcome lynchpin for a European unemployment re-insurance", *Policy paper* No 251, IJD, April; Grund S., Guttenberg L. & Odendal C. 2020. "Sharing the fiscal burden of the crisis: A Pandemic Solidarity Instrument for the EU", Jacques Delors Centre: Policy Paper, April; Hainbach N. & Redeker N. 2020. "Flattening the Recession Curve: Comparing Initial Fiscal Responses to the Corona Crisis Across the EU". Jacques Delors Centre: Policy Paper, April; Pellerin-Carlin T., Eisl A. & Magdalinski E. 2020. "Overcoming covid-19 crises by building a clean and resilient Europe", *Policy Brief*, IJD, April.

⁵ Including the [Launch of the European alliance for a Green Recovery](#) led by MEP Pascal Canfin, and the [University of Oxford's analysis of how green fiscal recovery packages can act to decouple economic growth from GHG emissions](#), co-authored i.a. by Nicholas Stern and Joseph Stiglitz; recent [blog post by Geneviève Pons](#).

⁶ The production of this paper was led by Europe Jacques Delors (Brussels), with the contribution of the Jacques Delors Institute (Paris) on sections 2.1, 2.2. and 2.3 dealing with the energy, mobility and innovation dimensions of this paper.

scope of this paper but that are nonetheless key for a genuine recovery, such as renewable energy, electricity interconnections, smart grids, public transport, railways, shipping, agriculture, forestry and the decarbonisation of EU industries and aviation.

01.

Criteria to identify tangible investments for an effective green recovery

As calls for a “green” recovery to the COVID-19 crisis are getting louder, the term risks to become an imprecise catch-all slogan, distracting from the fact that only carefully targeted economic stimuli can promote the transformation of our production and consumption patterns towards sustainability and resilience⁷.

We therefore commence by taking a closer look at what exactly would constitute an effective green economic stimulus for Europe. In contrast to immediate rescue measures aiming to secure employment and bridging companies’ liquidity problems, a green stimulus aims to quickly increase economic activity in the near- to medium-term and to accelerate the transformation of the economy towards a clean and resilient future (incl. zero pollution, biodiversity restoration and climate neutrality). In the current European context, measures introduced as part of a green stimulus should go hand in hand with

⁷ For the purpose of this paper, the term ‘resilience’ refers to the concept of ‘adaptive resilience’, which describes “the ability of a system to undergo anticipatory or reactionary reorganization of form and/or function so as to minimize [the] impact of a destabilizing shock”. According to this logic, a system that goes back to its pre-crisis state is not necessarily viewed as resilient. See Martin R. 2012. “Regional economic resilience, hysteresis and recessionary shocks”. *Journal of Economic Geography* 12(1) 1-32, 2012.

the European Green Deal, paving the way for a climate neutral and more sustainable Europe by 2050.

To this effect, a European green stimulus should be tailored to deliver on two overarching objectives.

1. Stimulate the economy and create jobs while securing those threatened.
2. Support the transformation of the European economy towards a clean and resilient future.

A. Designing a green stimulus to quickly revive the economy and create jobs

In order to effectively stimulate the economy and create/secure jobs, **the green stimulus should be timely, temporary and targeted.**

As Europe faces a recession deeper than a decade ago,⁸ the EU should act **timely** to enable economic recovery and to stimulate demand in the coming five years. In other words: the sooner the green stimulus package can be adopted and show effect, the better. Consequently, shovel-ready projects free of capacity constraints and scarcity of specialised skills are particularly suitable for providing short-term economic relief and should thus be prioritised.

Moreover, in order to limit repercussions on long-term fiscal sustainability, the green stimulus should only provide for **temporary** measures, in the form of one-off investments or time-bound programmes. The green stimulus programme should therefore target projects which are realisable through single, one-time public investments. Carefully applied, targeted one-off public investments may develop an important signalling effect and trigger other, long-term adjustments – especially if they are embedded in a long-term regulatory framework providing the necessary certainty.

⁸ See European Commission. 2020. “European economic forecast”, *Institutional paper* No 125, May.

Crucially, the green stimulus should be **targeted**, providing economic support and incentives to sectors with maximum positive effect on aggregate demand. Aiming for maximum economic output, the green stimulus should target sectors where the fiscal multiplier is highest and which provide a great potential for job creation, under the condition that adequate skills are available. Thereby, the asymmetrical impact of the COVID-19 crisis, disproportionately affecting the economies of Southern EU Member States⁹, must be taken into account.

In fostering the transition towards a more sustainable and resilient European economy, the green stimulus must ensure an **inclusive** recovery leaving no European behind. Aiming to improve the everyday lives of low-income families, fiscal incentives should be prioritised over punitive measures to provide concrete financial benefits for those in need.

B. Designing a green stimulus to support the long-term transformation of the European economy towards a clean and resilient future

In accordance with the “do no harm” principle¹⁰, the investments taken under the short-term economic stimulus should be either neutral towards or **accelerating** the structural transformation of the European economy towards zero pollution, restoration of biodiversity and climate neutrality by 2050. To this end, the green stimulus should particularly target measures positively affecting the increase of resource efficiency, the respect of our natural capital and the medium- and long-term reduction of GHG emissions in accordance with climate neutrality.

⁹According to the European Commission's Spring 2020 Economic Forecast, Greece, Spain, France, Italy and Croatia are particularly hit by the crisis. See European Commission. 2020. “European economic forecast”, *Institutional paper* No 125, May.

¹⁰ The “do no harm” principle, or precautionary principle, places the burden of proof on those, whose activities could potentially harm the environment. Cf. EEA. “Precautionary principle”.

Furthermore, targeted investments in electrification and renewable energy sources under the green economic stimulus will allow Europe to **reduce its economic dependence on oil**. This will facilitate the energy transition in the long-term and mitigate the impacts of future rises in oil prices. By contrast, energy efficiency and renewable energies will make our energy systems more efficient, decentralised and more **resilient** to future crises¹¹. This stimulus can also be used to enhance the EU's strategic autonomy.

As recently underlined by the International Energy Agency¹², it is important to avoid financing big, emblematic, risky and very expensive projects, as was done after the 2008/2009 global financial and economic crisis. Instead, the EU's green stimulus should target a wide portfolio of reasonably sized projects, based on readily available technologies.

02.

Proposals for a Green Economic Stimulus

The proposals developed in this part relate to five key sectors: buildings, road mobility, clean innovation, circular economy and tourism. Each section outlines 1) the sector's stimulus potential and 2) how it contributes to the long-term transformation of the European economy. It then **provides concrete investment recommendations** for the years to come, based on the criteria developed above.

This section does not attempt to provide a complete list of sectors and projects to be supported in the

¹¹ International Renewable Energy Agency (IRENA). 2019. “A New World: The Geopolitics of the Energy Transition. Joint Report with the Global Commission on the Geopolitics of Energy Transformation”, January.

¹² Birol F. 2020. “What the 2008 financial crisis can teach us about designing stimulus packages today”, IEA, April.

framework of a European green stimulus. By contrast, we aim to provide a starting point for a wider, more comprehensive approach, targeting relevant sectors that are not discussed in this paper, such as renewable energy, electricity interconnections, smart grids, the decarbonisation of EU industries, public transport, railways, shipping, the future of aviation, agriculture, forestry, etc.

A. Deploying a large-scale building renovation wave in Europe

A.1. Building renovation can quickly stimulate the economy

With the COVID-19 pandemic, Europe's construction sector has suffered its biggest drop in activity since the financial crisis, with many building sites closed, disrupted supply chains¹³, and millions of workers currently being under short-time work schemes.

Renovating the European building stock, especially to improve its energy efficiency, can trigger industrial production and employment. Half of the building stock in the EU was built before 1970 with low energy performance standards and its state is quickly deteriorating¹⁴. A threefold increase in the renovation rate, as deemed necessary by the Commission to achieve climate neutrality in 2050, could create 2 to 4 million new construction jobs in the coming years, in addition to associated jobs in the industry (production of materials, etc.)¹⁵. Supporting the renovation of buildings would furthermore help save the estimated 6.5 million full-time employees of the construction sector who are involved in building renovation in the EU¹⁶.

¹³ Markit economics, April 2020: The IHS Markit Eurozone Construction PMI® plunged from 52.5 in February to 33.5 in March.

¹⁴ Anagnostopoulos F. & De Groote M. 2016. "Energy Performance of the Housing Stock" in Csiba K. (ed.), *Energy Poverty Handbook*, The Greens/EFA group of the European Parliament.

¹⁵ European Commission. 2019. "Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU" Final report, November.

¹⁶ European Commission. 2019. "Comprehensive study of building

Beyond the short-term stimulus, the renovation of buildings will support the long-term prosperity of the EU economy while improving the living conditions of millions of Europeans. The COVID-19 pandemic highlights the need to act quickly for the 50 million European households who are in a situation of energy poverty, confined in poorly insulated and dilapidated housing (humidity, mould)¹⁷. Many families have inadequate temperatures at home in winter and in summer while paying high energy bills due to an aging and poorly insulated residential building stock¹⁸. Renovating the homes of energy-poor Europeans would lead to a significant decrease of public health spending, with previous studies suggesting that, on average, the cost of energy poverty on a modern healthcare system is likely to be three times higher than the cost of housing rehabilitation measures¹⁹. Furthermore, renovating the European public building stock will lead to energy savings, thus a decrease in public spending. Building renovation also improves the EU trade balance as energy savings reduce the consumption and imports of coal, oil and gas.

A.2. Building renovation is crucial to deliver a cleaner and more resilient future

Renovating buildings is a no-brainer of the transition. The building sector is the largest energy consumption sector and accounts for 36% of CO₂ emissions in the EU²⁰. Under the Energy Efficiency Directive, Member States have to renovate 3% of the floor area of public

energy renovation activities and the uptake of nearly zero-energy buildings in the EU" Final report, November.

¹⁷ European Commission. "What is energy poverty?", Energy poverty Observatory.

¹⁸ In most EU countries, half of the residential stock was built before the first thermal regulations (i.e. built before 1970). Cf. [Eu buildings factsheets](#).

¹⁹ Host S., Grange D., Mettetal L., Dubois U. 2014. « Précarité énergétique et santé : état des connaissances et situation en Île-de-France », Regional Health Observatory Île-de-France, Paris, 14.

²⁰ European Commission. "Energy performance of buildings directive".

buildings each year. While currently only 1% of buildings are renovated each year²¹, over 90% of buildings still need retrofit in the next thirty years if the EU wants to reach its climate objectives²². **Accelerating the retrofit of buildings is thus a priority to achieve climate neutrality.**

The main way forward is the deep renovation of buildings: taking an inefficient building and making it a modern near-zero energy building in a short time span –say, one week, like EnergieSprong already does in four European countries, and in a cost-effective manner. Currently, the annual amount of deep renovations in the EU28 is only around 0.2%²³: increasing this rate and deploying large-scale deep renovation demands a lot of innovations, not in some new distant technology, but in processes, business models and financing schemes to deploy at scale the processes and technologies that already work, including smart meters when they are relevant²⁴. The European Union can act decisively to accelerate the deep renovation of buildings in Europe, key to achieving our climate objective.

A.3. Recommendations for EU action

A.3.1. Renovating schools and other educational buildings

Public buildings represent about 10% of the stock in the EU²⁵. As these buildings are publicly owned or occupied, works can be rapidly launched by public authorities over the next months. Governments would

not only lead by example but also **develop replicable practices when performing large-scale works and hence achieve economies of scale that could later benefit the renovation of private buildings.**

Public action could start by focusing on the renovation of educational buildings, in particular of schools. Considering the frequency of school holidays and potentially several school lockdowns due to the virus, school buildings can benefit from fast and efficient renovation during those moments when they are unattended. There are 780,000 educational buildings in the EU²⁶. According to the BPIE, renovation needs to achieve an Almost Zero-Energy Building²⁷ cost on average €580/sq.m²⁸. With an average of 1400m² per school²⁹ an early estimate would suggest that the deep renovation of half of educational buildings in Europe would require a total investment of an estimated €300 billion –a total investment level that can be reduced if well-crafted pooling of similar projects lead to economies of scale.

As public authorities are solvent organisations, EU action can mostly rely on near-zero-interest loans to those Member States, regions or cities that request it. Countries and cities with ample fiscal space may not require EU financial support to finance such projects, while other public authorities may rely on it, with some needing grants as an additional incentive.

²¹ This figure includes all types of refurbishment, from “below threshold” to light, medium and deep renovations of buildings.

²² BPIE. “97% of buildings in the EU need to be upgraded”, Factsheet, Building Performance Institute Europe (BPIE)

²³ European Commission. 2019. “Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU”, Final report, November.

²⁴ Such innovations can be promoted through the creation of niche markets as the necessary first step to make those innovations better and cheaper, and thus fit to go mainstream. Cf. Arnulf Grubler, Charlie Wilson, Energy technology innovation, Cambridge University Press, 2014, Chapter 25.

²⁵ EUROSAI WGEA. 2018. “Energy Efficiency of Public Sector Buildings”, September.

²⁶ Source: European Commission. [EU Buildings Database](#)

²⁷ Replacement or upgrade of all elements which have a bearing on energy use, as well as the installation of renewable energy technologies in order to reduce energy consumption and carbon emission levels to close to zero.

²⁸ BPIE. 2011. “Europe’s building under the microscope, Buildings Performance Institute Europe (BPIE)”, October 2011.

²⁹ Source: European Commission. [EU Buildings Database](#)

A.3.2. Renovating the dwellings of energy-poor households

The EU can lead the way by improving the daily lives and the health of 50 million families suffering from energy poverty. As part of the upcoming "renovation wave", the investment plan for the European Green Deal should finance the deep renovation of a million buildings where energy-poor households reside.

The cost of housing renovation differs greatly depending on the type and size of buildings and on their location as construction labour costs vary significantly across the continent. As an early estimate, if one were to consider that a deep renovation costs around €50,000 per house, then, **by investing €200 billion by 2024, the EU could lift 4 million families out of energy poverty.** At the same time, it would create a sufficiently large supply to structure a solid deep renovation sector, to innovate and to achieve economies of scale, which would strengthen its price competitiveness, thus allowing market uptake of innovative deep renovations by the private sector in the second half of the 2020 decade. As part of its "renovation wave", the European Commission should engage building renovation companies to assess if EU firms are able to deliver more than 4 million deep renovations in the coming four years, and if so, then the level of ambition (and funding) could be increased accordingly. Here it should be possible to create a European-wide programme open to all interested companies based on the optimisation of energy savings, duly measured between the start of the renovation and the completion of the works. This would also ensure that the public money spent reduces energy bills and emissions and at the same time improves comfort for people.

Those two recommendations can be implemented either through ad hoc decisions, as part of the European Commission's proposal for a "renovation wave", and/or the creation of a 'Renovation Fund for All Europeans' already supported by key industry players³⁰.

³⁰ INZEB. 2020. "Renovation fund for all Europeans", April.

B. Accelerating the transition towards cleaner mobility on our roads

B.1. Investing in electric vehicles and cycling can quickly stimulate the economy

The transport sector has been strongly affected by the COVID-19 crisis. In addition to bringing long distance travel almost to a halt (i.e. mainly aviation and rail that are key sectors falling beyond the scope of this paper), the crises have reduced the demand for daily mobility services (e.g. public transport, taxis, private car use) and the production in related industries (e.g. automotive industry).

Before the COVID-19 crisis, around 15 million cars were sold in the EU every year³¹, and the industry was undergoing a sector-wide transition to increasing electrification of vehicle fleets (mainly cars but also two-wheelers, buses and trucks). The electric vehicle market has been booming in the world in the last few years. In Europe, electric cars amounted to 6.5% of sales in January and February 2020³². Meanwhile, car sales have plummeted with the virus outbreak (by roughly 80% in April in Western European countries³³) and **consumers might be reluctant to invest in new cars in the first months of recovery.** A short-term economic stimulus to resume car sales can support the industry and protect jobs in the sector.

In the European automotive industry, almost half of its 2.6 million employees have been affected by shutdowns and certainly many more among the eleven million jobs in the supply chain according to car manufacturers lobby ACEA³⁴. Additionally, in the medium-term, the

³¹ ACEA, [Consolidated registrations - by country](#). [accessed 23.04.2020]

³² Kane M. 2020. "The Last Positive EV Sales Numbers In Europe? February 2020", *InsideEVs*, 26 March.

Pontes J. 2020. "Renault Zoe Shines In Hot Market — Europe EV Sales Report", *Clean Technica*, 3 March.

³³ Winton N. 2020. "Western Europe's Car Sales Dive 80% In April, While Negative Forecasts For 2020 Race Past 25%", *Forbes*, 6 May.

³⁴ ACEA. 2020. "Interactive map: Employment impact of

increasing electrification of powertrains might have negative impacts on employment in car manufacturing according to the Fraunhofer Institute³⁵. These structural changes will indeed reduce employment in the traditional vehicle value chain: e.g. the fossil fuel sector and motor vehicle production due to lower labour intensity of electric vehicles and increasing automation. However, **the transition to cleaner mobility should also create jobs** along the value chain in Europe thanks to the more labour-intensive manufacturing of hybrid models, the production of cleaner fuels (mainly electricity and hydrogen), the construction and roll-out of infrastructure and the nascent battery industry. A 2018 study based on Cambridge Econometrics' models expects that the transition to cleaner mobility will thus have a positive impact on jobs until 2030 in Europe (i.e. 206,000 net additional jobs)³⁶. Investing in battery production in the EU and providing timely training to employees whose jobs are affected by these structural changes is essential to ensure the competitiveness and resilience of the European automotive industry.

In the medium-term, a shift from oil-powered mobility to electric and soft modes would **reduce the dependence of the EU economy on oil prices**. As oil prices went down as a result of COVID-19, there is a risk that a forthcoming EU economic recovery is slowed-down or even derailed by a possible oil price spike in the years to come.

When the market recovers, larger adoption of electric vehicles (EVs) will depend not only on the capacity of car manufacturers to deliver affordable electric models but

COVID-19 on the European auto industry", 13 April.

³⁵ [German] National Platform Future of Mobility. 2020. "Transformation of the mobility sector: workforce in need of visionary workforce planning and upskilling", Press release, 13 January.

³⁶ Harrison P. et al. 2018. "Fuelling Europe's Future: How the transition from oil strengthens the economy", Report, European Climate Foundation, Cambridge Econometrics and Element Energy, February.

also on the availability of public charging infrastructure. The roll-out of charging points is mainly driven by private companies, but public authorities can play an important role in triggering such investments. Improved charging infrastructure would contribute to the uptake of EVs by consumers after the crisis, and would also encourage car-makers to speed up their investments in electric vehicle productions, thus providing a stimulus for the entire electric vehicle value chain.

As already seen in several cities, the lockdown phase challenges the traditional use of urban space and mobility, and encourages experimentation. The city of Milan for instance launched a scheme to prioritise pedestrians and cyclists by reducing street space for cars and rolling out bike lanes³⁷. **The recovery period can further benefit from the development of cycling** as it can support physical distancing, reduce crowds in public transport and provide more space and easier access to local stores. Investments to improve cycling infrastructure can deliver quickly in cities and in-between cities and stimulate the bike ecosystem³⁸.

B.2. Electric vehicles and cycling are solutions to deliver a cleaner and more resilient future

Transport accounts for a third of CO2 emissions in the EU and these emissions have been growing since 1990. Transport is moreover a cause of air pollution, which is a threat to public health leading to an estimated 370,000 premature deaths in the EU³⁹. Solutions need to be quickly deployed to reduce our dependence on polluting modes, such as air travel and road transport. While aviation will require a reduction of its activities, emissions

³⁷ Laker L. 2020. "Milan announces ambitious scheme to reduce car use after lockdown", *The Guardian*, 21 April.

³⁸ Cycling Industries Europe. 2020. "Companies hit hard by coronavirus crises but remain confident of survival", April.

³⁹ European Environment Agency. 2020. "Air quality in Europe – 2019 Report". EEA report, No 10/2019

from road transport can be reduced by shifting to cleaner alternatives (e.g. electric vehicles, train).

Electric vehicles are currently the best available option to replace polluting diesel and gasoline vehicles. Standards to reduce CO₂ emissions from cars are becoming stricter since 2009 and several car manufacturers have now entered the race to provide consumers with a range of electric models. To support the industry in this transition, public authorities can boost demand for clean vehicles by reducing the upfront costs for consumers. Time is also ripe now to improve the sustainability of the production (especially the battery) and to allow the comparison of merits of each type of vehicle based on the life cycle impact assessment⁴⁰.

To unleash this potential for clean vehicles, **accelerating the roll-out of reliable charging stations is now key so that drivers can easily get on the road in electric cars.** While the average battery autonomy is improving, range anxiety remains a concern. It is also important that charging infrastructure is available for all to ensure territorial cohesion. Easy access to public charging should be guaranteed in all Member States (South-Eastern Europe being currently more sparsely covered), and in any location (whether it is for people living in city centres, peri-urban and rural areas, or when travelling long distances).

Investments should not only contribute to a shift to cleaner technologies but also encourage the safe use of public transport and soft modes, such as cycling and walking. In the case of cycling, large-scale investments in the development of bike paths and lanes can strongly encourage Europeans to change their commuting habits, invest in bikes (incl. electric) and avoid increased reliance on individual cars.

⁴⁰ Magdalinski E. & Pellerin-Carlin T. 2019. "Electric Vehicles: European Mobility and Industrial Leadership at Stake", Policy Brief, IJD, May; see also online comparison tool by Transport & Environment. "How clean are electric cars?" [accessed 07.05.2020]

B.3. Recommendations for EU action: investment in infrastructure and electric vehicles' roll-out

B.3.1. Investing massively in clean transport infrastructure

Rolling out a large network of charging points

The EU should invest around €10 billion to deploy **at least one million electric charging points by 2024** along the lines of the flagship 'Recharge EU' proposed by Transport & Environment (T&E). Before the crisis, the NGO estimated that about €80 billion of investments would be needed by 2030 to deploy public and private infrastructure for EV charging in the EU to support the growing electric mobility market. In terms of public infrastructure, T&E modelled that 3 million charging points would require around €20 billion in total investment by 2030⁴¹.

Accelerating the uptake of cycling

The EU can further stimulate the **expansion of bike networks in Europe.** It should start by increasing EU investments related to cycling and providing grants and preferential loans to projects, cities and regions willing to roll out cycling infrastructure. The European Cyclists' Federation argues for a Cycling Strategy that would rely on €3 billion of investment in the next MFF⁴². A post-crisis economic stimulus could here consist of **at least €3 billion** over the next 4 years to place cycling on an equal footing with other transport modes and incentivise cities to become bike-friendly, e.g. by including cycling infrastructure in road maintenance works⁴³.

⁴¹ Transport & Environment. 2020. "RechargeEU: how many charge points will Europe and its Member States need in the 2020s", Report, January.

EEA. 2016. "Investment in transport infrastructure", 2016 data.

⁴² European Cyclists' Federation. 2019. "Getting into gear: Cycling for the 2020s", April.

⁴³ These financial measures could be accompanied by regulatory measures such as the mandatory inclusion of bike infrastructure when cities plan roadworks. In the French case, the Institute for Climate Economics estimates that €1.6 billion per year would be needed in public investment in France to fit with its climate strategy. Cf. I4CE. 2020. "Investing in climate can help France drive its economic recovery", April.

B.3.2. Supporting the shift to electric vehicles

Boosting European battery production

A European battery value chain is essential to support the transition to electric vehicles and to ensure that key parts of the production and hence employment are located in the EU. Considering the market move to electrification throughout the world, demand for batteries is growing⁴⁴ and it is in the interest of manufacturers to rely on geographically close cell manufacturing. As part of the European Battery Alliance, **the EU could accelerate the set-up of battery gigafactories and support the development of its value chain** (e.g. raw material extraction) by providing additional grants and loans to support them, e.g. through the EIB. According to the European Battery Alliance network EBA250, demand for batteries in Europe will require €70 billion in investment by 2023⁴⁵.

Encouraging the purchase of electric cars

The European Commission should propose a **coordinated approach of purchase incentives** (or scrappage schemes) for Member States to financially support the purchase of electric vehicles. While several Member States already have such schemes in place⁴⁶, it is important that incentives only support the transition to clean and light vehicles (excluding for instance SUVs, gasoline and diesel cars) and provide amounts high enough to make them affordable for low-income

households. At the same time, the removal of old cars from the market should respect strict environmental rules.

The EU could propose a range of €2,000 - €15,000 for the purchase of an electric car with conditions that Member States can adapt to their national context. It should be launched once lock down measures are relaxed and production resumes with sufficient EV supply. If an **average €7,000 bonus was given for the purchase of 10 million electric cars over the next four years, this would require an overall public subsidy of €70 billion**. Such a measure would provide more certainty for car-makers to increase EV production and an incentive to stimulate the battery gigafactories planned in the EU.

C. Boosting investment in clean economy innovation

C.1. Investing in clean economy innovation will stimulate the economy

Clean economy start-ups play a key role in creating new products, services and markets that lead to economic activity and job creation. Many start-ups that were about to enter a market in 2020 were disrupted by COVID-19 and its consequences. As a result, their entry on the market has been delayed and they face challenges to access private investors, with some start-ups even being threatened in their very survival. They first need to be saved as part of rescue packages that are beyond the scope of this paper, and that we discussed in previous publications⁴⁷. A timely and significant economic support to those start-ups will help them scale up fast in the coming months and years, thus stimulating job creation and economic activity. It will also support the creation and market up-take of incremental and breakthrough

⁴⁴ European Commission. 2019. "Report on the Implementation of the Strategic Action Plan on Batteries: Building a Strategic Battery Value Chain in Europe", April.

⁴⁵ EBA250, Business Investment Platform [accessed 07.05.2020]

⁴⁶ ACEA. 2019. "Overview – Electric vehicles: tax benefits and incentives in the EU", May.

⁴⁷ Pellerin-Carlin T., Eisl A. & Magdalinski E. 2020. "Overcoming COVID-19 crises by building a clean and resilient Europe", policy brief, IJD, April.

innovations, leading to an increase in the productivity and competitiveness of the EU economy⁴⁸.

C.2. Innovation is vital to develop and deploy clean economy solutions

Innovation plays a central role in the transformation of European societies towards climate neutrality by 2050. It can create clean solutions and drive down the cost of existing solutions, like renewable energy production, energy efficiency or electric mobility, and ensures a faster uptake of clean economy solutions in Europe. It is for instance through a wide range of innovations that the cost of solar photovoltaic panels fell by more than 80% in the last 8 years⁴⁹. Finally, innovation may be Europe's most potent tool to foster a global transition to the clean economy, as European innovations can inspire innovators in other parts of the world, like it already did with the creation and deployment of energy-efficient appliances.

C.3. Recommendation for EU action

C.3.1. Investing in clean economy start-ups and SMEs

The EU and its Member States should ensure that these new clean economy companies, notably start-ups and SMEs, have access to the patient capital they need to continue to develop the solutions of tomorrow. To make a difference for clean economy start-ups, on top of already existing and planned funding, **the EU should provide a one-off additional contribution of €20 billion to four existing EU tools: the European Investment Fund, the European Innovation Council, InvestEU, and the European Institute of Innovation and Technology.** This money should be targeted only to clean economy start-ups and SMEs. It could however be part of larger schemes

⁴⁸ ECF. 2018. "Funding innovation to deliver EU competitive climate leadership", europeanclimate.org, October.

⁴⁹ IRENA. 2019. "Renewable power generation costs in 2018", irena.org.

that also benefit other key innovative sectors like digital and health start-ups and SMEs.

C.3.2. Boosting investment in clean economy demonstration projects

The EU or its Member States should furthermore provide a one-off contribution of €10 billion to the EU Innovation Fund. This already existing fund invests in clean economy demonstration projects, usually carried out by private SMEs or corporates to test innovative methods of production and business models. The Innovation Fund is currently funded by the sale of quotas on the EU carbon market (EU-ETS) and, before the economic crisis hit, the European Commission expected those revenues to allow the Innovation Fund to invest €10 billion⁵⁰. As a result of the current economic crisis, the carbon price on this market has decreased, creating a risk that the Innovation Fund will need to decrease its investments in clean innovation projects in the coming years. Today, Europe does not need an Innovation Fund that invests less, it needs one that can invest more. This is why granting the Innovation Fund an exceptional one-off contribution will ensure it invests in demonstration projects in the next five years, thus providing a boost to the economy while strengthening its productivity and green transformation in the long run.

D. Accelerating the transition towards a circular economy

The structural transformation from a linear to a circular economy is integral to all recommendations laid out so far. A more circular economy enables Europe to become more autonomous with regard to the supply of raw materials, thereby decoupling our wellbeing from the exploitation of natural resources and increasing our society's resilience to future crises.

⁵⁰ European Commission. "Climate Action. Innovation Fund", ec.europa.eu

D.1. Accelerating the transition towards circularity will stimulate the economy

Avoiding waste through reuse, repair and remanufacturing offers significant economic stimulus and job creation potential with major environmental benefits. When waste cannot be avoided, managing it properly through separate collection, processing and quality recycling also has major job potential compared to incineration and landfilling, and it brings on stream valuable secondary raw materials.

The sorting, recycling or reuse of waste is highly labour-intensive. Calculations made by the Reuse and Recycling EU Social Enterprises (RREUSE) network show that traditional reuse centres dealing with multi-materials can create on average about 70-80 jobs for 1000 tons of collected and reused materials⁵¹. **In this context, the reuse of used household products alone could allow for the creation of nearly 300,000 jobs by 2030⁵².** Beyond creating jobs, this activity makes available refurbished products at a fraction of the new price, increasing wellbeing for those who cannot afford to buy new.

To date, only 12% of secondary materials and resources are being brought back into the EU economy⁵³.

According to the European Commission's estimates, reaching 70% recycled waste in all EU Member States alone could create almost half a million jobs across Europe⁵⁴.

⁵¹ RREUSE. 2015. "Briefing on job creation potential in the re-use sector", sept.

⁵² Ibid.

⁵³ Eurostat. "Circular material use rate", last update 31.01.2020.

⁵⁴ European Commission. 2010. "Being wise with waste: the eu's approach to waste management", ec.europa.eu.

D.2. Accelerating the transition towards a circular economy is key to deliver a clean and healthy future

The transition towards a circular economy offers the advantage of tackling the ecological problem of waste from both ends of the production chain. By turning waste into a raw material, it allows for an incremental exit from an economic model based on extraction. Moreover, by collecting, treating and recycling waste, it avoids massive CO2 emissions and the alteration of land and ecosystems resulting from their destruction. **In 2017, solid waste disposal, wastewater treatment and incineration and open burning of waste were responsible for about 140 million tonnes of GHG emissions⁵⁵, making waste the 4th largest source sector of emissions.**

Moreover, marine litter is a major threat to marine ecosystems and biodiversity⁵⁶. More than 80% of marine litter in European waters is composed of plastics⁵⁷, which are particularly damaging due to their longevity. According to WWF, **between 150,000 and 500,000 tonnes of macroplastics and 70,000-130,000 tonnes of microplastics are dumped into European waters every year⁵⁸.**

Ineffective waste and wastewater management is further contributing to the degradation of European waters. The Baltic Sea, the Black Sea, the Mediterranean and the North-East Atlantic Ocean are heavily contaminated⁵⁹, while pollution from urban wastewater and, in particular, agriculture continues to cause the eutrophication of European coastal areas.

⁵⁵ Eurostat. 2020. "Greenhouse gas emission from waste", January.

⁵⁶ CDB. 2012. "Impact of marine debris on biodiversity. Current status and potential solutions", CBD Technical Series No. 67.

⁵⁷ European Commission. 2018. "Proposal for a directive of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment", May.

⁵⁸ WWF. 2018. "Report: out of the plastic trap".

⁵⁹ EEA. 2018. Contaminants in Europe's seas. EEA Report No 25/2018.

D.3. Recommendation for EU action

We offer concrete recommendations with regard to waste and wastewater management, aiming to exemplify an exercise to be replicated at larger scale for all sectors linked to the circular economy transition, including industrial waste treatment, refurbishment of automotive components, etc.

D.3.1. Waste

With the transition towards a circular economy at its heart, the post-COVID-19 recovery package can significantly accelerate necessary infrastructure developments and promote the innovation of alternative materials and new technologies.

First, to avoid waste, the EU should support initiatives to establish start-ups and social enterprises in repair and reuse, and support relevant (re)training for those losing jobs in the economic downturn. This could be focused particularly on Just Transition areas, enabling the transformation from mining to “urban mining” regions.

Second, separate collection of municipal waste is a key condition to viably extracting value from waste through recycling. The EU should therefore support local authorities to bridge the estimated investment gap of **€12 billion for municipal waste collection, separation and recycling infrastructures over the next five years⁶⁰**.

Third, the European Union has put forward a pioneer legislation with regard to plastics. According to the European Plastics Strategy, all plastic packaging on the European Market must be either reusable or recyclable by 2030⁶¹. Recycling all plastics within the EU would require an additional 12 million tonnes of capacity by 2027⁶².

⁶⁰ European Commission. 2019. “Study on investment needs in the waste sector and on the financing of municipal waste management in Member States”. [op.europa.eu](https://op.europa.eu/en/publication-detail/-/publication/52018DC0028), August.

⁶¹ Document 52018DC0028. eur-lex.europa.eu.

⁶² European Commission. 2019. “Study on investment needs

Under the recovery plan, the EU should support **infrastructure developments aiming to increase the reuse and recycling rate of plastics by covering the estimated investment gap of €8 billion over the next five years⁶³**.

These infrastructure investments should be accompanied by investments into the development of chemical recycling technologies and the innovation of promising alternative materials, like biodegradable plastics.

D.3.2. Wastewater Treatment

With regard to wastewater, the lack of substantial investments in infrastructure by the EU Member States continues to represent a major barrier to the implementation of the EU Urban Waste-Water Treatment Directive. According to the OECD, Member States face an **investment gap of €253 billion until 2030⁶⁴**. The EU should therefore step up its investments into infrastructure allowing the advanced treatment and reuse of water, significant reduction of water losses and the recovery and recycling of raw materials from wastewater and other water-based waste. As part of the EU recovery package, the EU should therefore make enhanced water treatment a priority and support Member States **with €30 billion per year over the next five years**. Thereby, infrastructure investments on islands as well as in densely populated coastal areas and major cities located on rivers should be prioritised.

in the waste sector and on the financing of municipal waste management in Member States”. [op.europa.eu](https://op.europa.eu/en/publication-detail/-/publication/52018DC0028), August.

⁶³ European Commission. 2019. “Study on investment needs in the waste sector and on the financing of municipal waste management in Member States”. [op.europa.eu](https://op.europa.eu/en/publication-detail/-/publication/52018DC0028), August.

⁶⁴ European Commission. 2019. “Commission staff working document. Executive summary of the evaluation of the Council Directive 91/271/EEC of 21 May 1991, concerning urban wastewater treatment”, December.

E. Support sustainable coastal tourism

E.1. Hit hard by the crisis, the tourism sector can quickly stimulate the economy where most needed

Tourism is expected to be one of the most affected sectors by the COVID-19 crisis, with a projected reduction in international tourist traffic of 20% to 30% in 2020⁶⁵. Depending on the further development of the crisis and the duration of travel restrictions, the tourism economy faces a 45% to 70% decline⁶⁶.

These aggregate figures hide **significant geographical disparities**. Across Southern Europe, the sector is vital to national economies, accounting for 20% of GDP in Greece, 18% in Portugal, 15% in Spain and 13% in Italy⁶⁷. In these countries, economic recovery from the 2008/2009 global financial and economic crisis relied to a significant extent on tourism.

Providing nearly **3.1 million jobs** and a gross value added (GVA) of €88.5 billion in 2018, **coastal and maritime tourism** represents a significant part of the EU tourism industry (51% of bed capacity) and the largest sector of the EU Blue Economy⁶⁸.

Islands, coastal and outermost regions have been greatly impacted due to their dependence on tourism activities or reliance on international air travel.

E.2. Sustainable tourism can contribute to a cleaner and more resilient future

The recent years have seen a **strong development of touristic offers based on alternative, smaller scale, green and locally sourced services** able to deliver a more sustainable tourism⁶⁹.

These changes have been led by many SMEs and family-owned businesses, small scale lodgings (B&Bs etc), local food systems (incl. local seafood), marine life protection as a tourism offer and experience and the valorisation of local culture and traditions. Much of these have been encouraged and supported by the EU, in particular in the framework of the European Maritime and Fisheries Fund (EMFF).

Investments made under the EU recovery package should therefore **preserve and step-up these positive trends, while mainstreaming a structural transition to sustainable consumption and production models** of the tourism value chain (distribution, international transport and local mobility, lodging, recreational activities). Simultaneously, investments into sustainable tourism should foster **renovation and higher quality standards**, in line with **circular economy principles**, zero pollution, energy efficiency, **biodiversity preservation** and recovery while using the full potential of digital technologies.

E.3. Recommendations for immediate EU actions in favour of sustainable coastal tourism

The recovery package should target **coastal communities** most hardly hit by the crisis and entail a large financial investment combining structural funds (incl. EMFF, EIB, LIFE and national investment banks) and accelerating their transition towards sustainable tourism.

To this end, we propose a €80bn investment plan for coastal tourism, notably in the Mediterranean:

E.3.1. At least half of it would cover investments in:

- Reduction of energy consumption of touristic accommodation buildings. An early estimate would suggest that the deep renovation of 30% (60,000) of hotels in Europe would require a total investment of around €35 billion.⁷⁰

⁶⁵ UNWTO. "COVID-19: putting people first", [unwto.org](https://www.unwto.org).

⁶⁶ OECD. 2020. "Tourism Policy Responses", read.oecd-ilibrary.org, April.

⁶⁷ IBRD. "Travel and tourism direct contribution to GDP". tcddata360.worldbank.org.

⁶⁸ European Commission. 2019. "The EU blue Economy Report". op.europa.eu, May.

⁶⁹ UNWTO. 2018. "Report links. Sustainable tourism to 17 SDGs". sdg.iisd.org, June.

⁷⁰ APAT. 2002. "Tourist accommodation. EU Eco-label award scheme". isprambiente.gov.it. Oct.

2020. "Number of bedrooms in hotels and similar accommodation in Europe in 2018, by country". statista.com. Feb.

BPIE. 2011. "Europe's buildings under the microscope".

- capacities for waste and water treatment; as far as wastewater is concerned, as stated above, islands and coastal areas should be given priority in the allocation of the €30 billion per year investment required at EU level.
- scaling-up collection and recycling of plastics all along the EU coast and on islands (in particular Mediterranean);

E.3.2. The other part would cover the implementation of Maritime Spatial Planning to reduce the impacts of tourism on marine habitats and expansion of marine protected areas as opportunities for nature-based tourism.

Mass tourism is a major threat to Marine Protected Areas (MPAs)⁷¹. By contrast, recent case studies confirm that fully protected MPAs can bring a wide spectrum of benefits for the local economic operators and communities⁷², including for ecotourism.

As already demonstrated by pilot projects launched in 2013-2015 under Intereg schemes in the Mediterranean, at a local level, ecotourism can even be more profitable than conventional tourism⁷³.

Investing in the restoration of coastal and seabed habitats will therefore represent double wins for nature and economic activity, including tourism⁷⁴.

Conclusion

A green recovery investment plan delivers the necessary economic stimulus and builds resilience to future shocks, while accelerating our transition towards a greener future. Aiming to propose and exemplify a methodology to be replicated at larger scale, this paper has suggested concrete investment proposals with regard to five sectors that illustrate this double win potential.

However, the identification of investments with stimulation and transformation potential only represents the very first step. Further steps should take a closer look at the ecosystem of each measure proposed under the green recovery investment plan, assessing its impact on different actors along the value chains and how they can contribute to ensuring the effectiveness of the green investment (i.e. through tailored financial support, regulation, stimulation of demand, workforce, skills, structuration of projects at scale, reorganisation of value chains).

The proposals put forward in this paper assess that, in the five sectors we have analysed, €800 billion can be invested over the next five years as part of green recovery plans led by the EU and its Member States. Crucially, in order to avoid a gap in the use of present programmes and those to be established for the next MFF period, it is essential to create a bridge by extending the present relevant programmes (in terms of money and timing), to allow full continuity of the EU support to those actions contributing immediately to recovery.⁷⁵

To an unprecedented extent, the COVID-19 outbreak has highlighted the interconnectedness and fragility of our health, our environment and our social and economic system. Against this background, the need for a large-scale economic recovery plan enables us to prioritise today the tools we need for the future we want. 70 years after the Schuman Declaration, Europe continues to be

⁷¹ Sustainable tourism. 2019. medpan.org

⁷² European Commission. 2017. "Study on the economic benefits of Marine Protected Areas. Literature review analysis." Sept.

⁷³ Sustainable tourism. 2019. medpan.org

⁷⁴ European Commission. 2018. "An unsuspected economic engine: Marine Protected Areas". Nov.

European Commission. 2017. "Study on the economic benefits of Marine Protected Areas. Literature review analysis". Sept.

⁷⁵ Maillard S. & Rubio E. 2020. "The EU budget and Covid: we need a 'Plan B'", *Blogpost*, IJD, April.

built through concrete achievements creating solidarity⁷⁶. By contrast, the lack thereof constitutes “a mortal danger” to the European Union – as recently underlined by Jacques Delors⁷⁷.

In drafting a European green economic stimulus, European policymakers can today embrace a forward-looking vision and accelerate the transformation of our society towards increased resilience to health and environmental crises, while showing solidarity with the most affected Member States, regions and Europeans. ●

⁷⁶ On 9 May 1950, the French Foreign Minister Robert Schuman proposed to join the French and [West] German production of coal and steel under one common High Authority, whose membership would be open to other countries. In his speech, he underlined that “*Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity.*”

⁷⁷ Jacques Delors, *Epidemic infects Europe with ‘germ of division’*, AFP, 28 March 2020.

Note about the Annex

This table indicates an early-estimate of amounts of funding that can be invested in specific sectors. It also indicates early-estimates of the amount that can be invested during the first year of the programme. The reasoning behind those estimates is to invest this money (1) as fast as possible to have the quickest impact on the economic recovery, (2) but as slow as necessary to take into account supply-side constraints (e.g. some value chains will need more time to adapt the production process, workers skills, etc.).

Managing Editor

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Annex

Overview of recommended actions

Recommendation	Approx. amount in Bn€	Main financial instrument	Leading actors	EU specific contribution
1. Renovating school buildings Deep renovation of half of 780.000 educational buildings at a cost of €580/m ² by 2024 (ø 1400m ² per school)	300 (30 1st year)	Loans	Local authorities, with the support of Member States and EU	Technical assistance when required. Ensuring that all local authorities get access to near-zero interest loans, even if they are located in states with limited fiscal space.
2. Renovating the dwellings of energy-poor households Lift 4 million families out of energy poverty by 2024 (50,000€ per house)	200 (20 1st year)	Grants	Member States and/or local authorities, with energy-poor households and NGOs	Technical assistance when required. Providing near-zero interest loans. Supporting the pooling of similar projects to achieve economies of scale.
3. Rolling out a large network of electric charging infrastructures: at least one million charging points by 2024	10 (2 1st year)	Loans to authorities or private investors	Member States, local authorities, private companies (charging point operators)	<ul style="list-style-type: none"> • Overseeing a standardised roll-out throughout the EU • Guaranteeing that all stakeholders can get financed and roll out infrastructure locally
4. Expanding bike networks	At least 3 (1,5 1st year)	Loans, with grants where needed	Local authorities	Providing near-zero interest loans. Providing grants esp. in cohesion regions
5. Accelerating the set-up of battery gigafactories	70 (15 1st year)	Grants and loans	EC, Member States, EIB	Providing funding and technical support through the European Battery Alliance
6. Stimulating demand for electric vehicles: average € 7,000 bonus for the purchase of 10 million electric cars over the next four years.	70 (10 1st year)	Grants for consumers from Member States (potential loans for MS)	Member States	Providing EU-wide guidelines for nationally implemented schemes
7. Boosting investments in clean economy start-ups	20 (15 1st year)	Equity	InvestEU, EIF, EIT, EIC and comparable national organisations, either directly or via Fund of Funds for public, private and corporate Venture Capital	Providing fresh funding to EU, national or private organisations that invest in clean economy start-ups
8. Supporting the Innovation Fund	10 (4 1st year)	Grants	The EU Innovation Fund	Providing additional funding to the EU Innovation Fund
9. Investing in municipal waste collection, separation and recycling infrastructures	12 (3 1st year)	Grants/Loans	Local authorities	Providing near-zero interest loans. Providing grants esp. in cohesion regions
10. Investing in infrastructure to increase the reuse and recycling rate of plastics	8 (2 1st year)	Grants/Loans	MS, local authorities	
11. Making wastewater treatment a priority	150 (30 1st year)	Grants/Loans	Local authorities, supported by MS and EU (HE, LIFE, Structural/Cohesion funds, InvestEU)	Providing near-zero interest loans. Providing grants esp. in cohesion regions
12. Supporting sustainable coastal tourism and synergies with Marine Protected Areas	80 (20 1st year)	Grants/Loans	Local authorities, supported by MS and EU (LIFE, Structural/Cohesion funds)	Providing near-zero interest loans. Providing grants esp. in cohesion regions