

SEPTEMBER 2019

DESTINATION CLIMATE NEUTRALITY

A FIVE YEAR POLICY BLUEPRINT FOR EUROPE

CONTRIBUTING AUTHORS



IDDRI CLIMACT

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WHO WE ARE

The EEB is the largest network of environmental citizens' organisations in Europe. It currently consists of around 150 member organisations in more than 30 countries, including a growing number of European networks, and representing some 30 million individual members and supporters.

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IDDRI

IDDRI is an independent policy research institute and a multi-stakeholder dialogue platform that identifies the conditions and proposes tools to put sustainable development at the heart of international relations and public and private policies

CLIMACT

CLIMACT is a Belgian consultancy with recognized expertise in climate and energy. The team manages various projects on the energy and climate transitions in Europe and its Member States. The clients are public authorities and private companies. CLIMACT works and partners with leading European institutions. Next to its consulting activities, CLIMACT is financing renewable and energy efficiency projects.

The authors would also like to thank Agora-Energiewende and the Institute for European Environmental Policy (IEEP) for their valuable contributions to this report. It also saw substantial cross-discipline contributions internally, notably from Stéphane Arditi, Piotr Barczak, Bérénice Dupeux, Jack Hunter, Célia Nyssens, Christian Schaible, Jean-Pierre Schweitzer and Patrick ten Brink. Two European Climate Initiative (EUKI) projects have provided information used in this report – the Multiannual Financial Framework (MFF) for the Climate¹ and the Agriculture and Climate². The authors also thank contributors from the European Climate Foundation (ECF) and Climate Action Network (CAN) Europe (esp. Markus Trilling) for their precious insights.



This report draws substantially on reports in the "Net Zero 2050" series published by the European Climate Foundation in 2018/9, with contributions from a consortium of experts and organisations. The objective of the Net Zero 2050 series is to start building a vision and evidence base for the transition to net zero emission societies in Europe and beyond, by mid-century at the latest. The Paris Agreement commits us to making this transition, and long-term strategic planning shows that many of the decisions and actions need to get us on track must be taken imminently.

Reports in the series seek to enhance understanding of the implications and opportunities of moving to climate neutrality across the power, industry, buildings, transport, agriculture, and forestry sectors; to shed light on some of the near-term actions needed to reach this goal, and to provide a basis for discussion and engagement with stakeholders and policy-makers.

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This report has been commissioned by the European Climate Foundation (ECF). The ECF supports over 280 partner organisations to carry out activities that contribute to the public debate on climate action, drive urgent and ambitious policy in support of the objectives of the Paris Agreement and help deliver a socially responsible transition to a carbon neutral economy and sustainable society in Europe and around the world.

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THE CHALLENGE MUST BE MET

We have little more than **10 years to decarbonise**³ or face climate chaos, mass migration, food shortages and civil disorder. Already today we are experiencing temperatures higher than our species has ever dealt with before. Locked-in, unavoidable warming and unaccounted feedback loops will push us to the very edge. Anxiety is turning to anger as citizens wake up to the fact governments have failed to steer economies towards safety in line with scientific warnings. Our situation is bleak but could now be changing. European Commission president-elect Ursula von der Leyen has answered the call, with the aim to **make Europe the first climate-neutral-continent**⁴ and substantially raise the 2030 greenhouse gas reduction targets, proposing a 'Green Deal' for Europe and leading international negotiations to increase the level of ambition of other major economies by 2021. The challenge will be met. We have a mandate for systemic change. The question is moving from if and when, to how.

This paper describes where we are today and how we move to a climate neutral economy across Europe. A policy blueprint, if you will, translates the facts on the ground into an array of pragmatic policy options for the years to come. Covering all sectors of the economy, it draws together leading recommendations from thinktanks, scientists, thought leaders and NGOs, including IDDRI, Climact, IEEP and Agora-Energiewende. It offers policymakers a sector by sector toolbox to successfully navigate the next Commission term, complete with targets and initiatives in the fields of governance, finance, industry, energy, transport, the circular economy, agriculture and employment.

Despite the complexities and the sensitivities, the vested interests and opposing forces, despite a looming global recession, this is technologically, socially and financially feasible. Runaway climate change is a dark future. But in parallel, it is also a monumental spur towards a future of increased security, prosperity, internal cohesion and higher living and environmental standards.



THE FUTURE IS BRIGHT

A century or two from now, climate change could be seen as the deadly force that opened the door to a bright new society of wellbeing, improved standards, greater employment, material and energy security and higher domestic economic value creation. Today, US presidential hopefuls have recognised the potential and have tabled⁵ a \$16 trillion climate programme that will “refinance itself” in 15 years and create 20 million jobs along the way. In recent days, Nobel prize winning economist Joseph Stiglitz advised Europe to do the same, saying the best response⁶ to a looming global recession is to spend vigorously to retrofit our economies while interest rates are historically low. The benefits will be tangible, vote-winning improvements to the lives of current and future generations.

A new economy. EU energy consumption peaked in 2005/2006, the production of renewables increased, the consumption of gas reduced by 12 percent and oil by 14 percent⁷ from 2005 to 2017. **The cost for solar power fell almost fivefold and the cost for wind was halved in the last decade**, a first for energy production⁸. New wind and solar plants are now in many countries cheaper than any other new-build power technology and similar savings are forecast for batteries and electric vehicles⁹. New business models of sharing and decentralised production of energy and goods promise to revolutionise heavy industry, manufacturing and services and make all corners of the economy less wasteful. These are building blocks to a carbon-neutral future that will redefine Europe for its citizens and the world.

Sustainable jobs. Investments in energy efficiency have made it the biggest source of carbon savings in the energy sector and the biggest ‘clean energy source’ of the century so far. With the overhaul of our building and mobility stock, renewal of power generation assets and a reduction of fossil fuel imports, the European economy is expected to benefit from climate action with an increase of the GDP by €220 billion¹⁰ compared with the reference scenario lacking climate action. **The renewable energy sector employs almost 1.5 million people¹¹ and could employ additional 2.7 million in the next 20 years¹².** Europe’s 2030 energy efficiency target is expected to create 1.5 million additional jobs and save close to €15 billion in fossil fuel imports annually¹³. Destination climate neutrality means accelerating down these pathways, while building a more prosperous and resilient society. The best news of all - getting there can actually cost less than business-as-usual¹⁴.

Clean air. Dirty air, in particular due to fossil fuel combustion, caused almost half a million Europeans to die early in 2015¹⁵. Child development is stunted, and adults are disabled. Treating a long list of problems cost the taxpayer up to €1 trillion in 2010¹⁶, a fortune that should have been invested in society. Reaching climate neutrality in 2050 will slash our collective medical bill by up to €414 billion annually¹⁷ and almost halve premature death rates¹⁸. Shifting the transition will also yield other important environmental co-benefits such as improved water quality¹⁹ and resource conservation.

Smart investment. Reduced energy production costs, lower health bills and avoided environmental adaptation or mitigation costs from CO₂ emissions should easily offset the investment costs of renewable energy deployment. We can expect savings of between €46 and €119 billion (\$52 billion and \$133 billion) per year from 2030²⁰, set against average total yearly investments of €66 billion (\$73 billion)²¹.

FIVE PRINCIPLES TO UNLOCK CARBON NEUTRALITY

1

ALIGN STRATEGIC VISION AND EXISTING POLICIES

The Clean Energy Package and related legislation enable the EU to go beyond its current 40% climate target as set in the Nationally Determined Contribution (NDC) by 2030, but fails to put the EU on a climate neutral economy pathway in the necessary timeframe. Raising 2030 Greenhouse Gases (GHG) emissions reduction goals alone will not resolve this. To create a link between those targets, an alignment of long-term and current policies should:

- ⊕ Back-cast from a net-zero economy to current policies,
- ⊕ Identify transformational steps in all sectors,
- ⊕ Design policies to close these implementation gaps.

The EU should combine specific sectoral policies and strengthen them. Policy instruments should set a clear direction on which technologies and infrastructure make long-term strategic sense and which are compatible with wider Sustainable Development Goals, such as renewable synthetic fuels, electricity storage and carbon sinks from ecosystem restoration. These approaches will better marry short-term actions with the strategic vision.

2

ENHANCE THE EUROPEAN COMMISSION ROLE

Targets and legislation will only take us so far. Member states all face different opportunities and challenges on the road to net-zero. The Commission should use various tools to guide and ease this process, namely through financial, technical and political assistance.

3

DEPLOY CLIMATE ACTION FOR A MORE JUST SOCIETY

The majority of EU individuals agreed that income differences in their country are too large²². Measures that exacerbate this inequality risk a backlash. Handled right, climate action is a good social policy and can help reduce inequality. Citizens can look forward to better health, homes and energy security, more liveable towns and cities and sustainable industries. But local communities and industries cannot be left behind. Social dialogue, fair treatment and decent, alternative employment must be facilitated to offset disruption.

4

REINFORCE EUROPEAN CLIMATE LEADERSHIP

Europe should raise its diplomatic game. It should honour its commitment and revise its climate target in 2020 and submit its post-2030 NDC in light of the global stocktake in 2023. The EU should seek not only to raise the absolute GHG reduction target by 2030 and 2050, but also to highlight qualitative actions that will improve the coherence between its 2050 goals and short-term policies. During the next 5 years, the EU should not simply revise its existing 2030 policies, but build from the Commission's long-term vision for climate neutrality and develop a 'climate neutrality package' to plug gaps in the current policy framework.

5

ALIGN PUBLIC AND PRIVATE INVESTMENT

The EU should ensure that planned spending under the next Multiannual Financial Framework and national operational programmes aligns with EU and national decarbonisation strategies, for example the EU Long-Term Strategy and National Energy and Climate Plans. Economic and regulatory incentives should be meaningful in order to shift investors from carbon-intensive to carbon-neutral. Member states should be held accountable to their commitment to end all fossil fuel subsidies. Carbon pricing, demand side and regulatory policies, as well as sustainable finance are needed to guide the private sector towards climate neutral compatible investments and boost their competitiveness. Pollution prevention and polluter pays principles should be respected and fully reflected in carbon pricing.



HORIZONTAL CHANGE

IF SECTORS OF AN ECONOMY REPRESENT THE ROOMS OF A HOUSE, ITS FOUNDATIONS ARE GOVERNANCE AND FINANCE. PROGRESS HERE CAN DELIVER CHANGE THAT IS SWIFT AND BROAD. EU INSTITUTIONS ARE BEST PLACED TO CREATE A FRAMEWORK OF INCENTIVES TO ACHIEVE THIS.



HORIZONTAL CHANGE

GOVERNANCE AND IMPLEMENTATION

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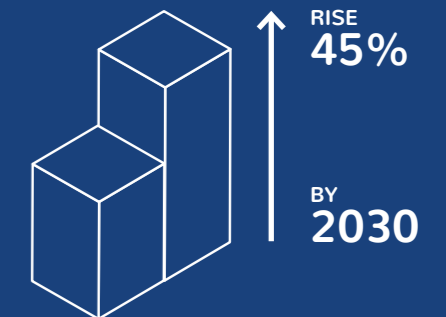
ALTOGETHER, 22 MEMBER STATES MET THEIR ANNUAL GHG EMISSION TARGETS SET FOR 2016²³

THE SECTOR TODAY

FACTS & FIGURES

- ⊕ Share of Renewable Energy Sources (RES) was 2.5% off the 20% 2020 target in 2017²⁴.
- ⊕ Efficiency was 3.3% off the 20% 2020 target²⁵.
- ⊕ GHG reduction was 2% over the minus 20% 2020 target²⁶.
- ⊕ Draft NECPs do not achieve long-term Paris Accord objectives²⁷.

RES SHARES



PROSPECTS FOR THE FUTURE

- ⊕ RES-shared should reach 32% by 2030.
- ⊕ Efficiency should reach 32.5% by 2030.
- ⊕ GHG cut should be at least 40% by 2030.
- ⊕ 22 member states are expected not to meet 2030 effort sharing targets²⁸.

NEEDS FOR CHANGE

- ⊕ To decarbonise on a smooth trajectory, RES shares should rise to 45% by 2030 and electricity should be fully renewable by 2040, efficiency to 40% by 2030 and GHG cut by at least 65% by 2030 and carbon neutral 2040, inclusive of land use change and forestry.



CHALLENGES

- ⊕ Slow progress towards energy efficiency.
- ⊕ Draft NECPs objectives do not match EU targets.



OPPORTUNITIES

- ⊕ Redrafting of NDC could better reflect the Paris Accord for the post-2030 period.
- ⊕ New governance regulations, especially the NECPs process and the European Semester, could improve monitoring of climate targets.
- ⊕ The new LTS could bring tangible benefits when translated to sectoral policies.
- ⊕ The new European Green Deal proposed by the Commission President-elect will be a key vehicle for climate mitigation.
- ⊕ National LTSs due in January 2020 need to integrate long-term targets in line with climate-neutrality.



© European Union, 2018 – Source: European Parliament

GOVERNANCE AND IMPLEMENTATION: POLICY OPTIONS

CENTRE STAGE

The Governance of the Energy Union Regulation (EU) 2018/1999 provides the legal tools to ensure that the 2030 climate and energy targets are met, and that the energy union's long-term commitments are made consistent with the Paris Accord. EU member states are setting integrated national energy and climate plans (NECPs) covering a ten-year period starting from 2021 to 2030, EU and national long-term strategies (LTS) look beyond 2030 towards 2050, and a harmonised system of integrated reporting, monitoring and data publication has been established.

Drive implementation of the current climate and energy framework at member state level

The new European Parliament needs to establish an annual implementation report on the European transition to climate neutrality led by the Environment Committee and create a **Standing Committee on climate neutrality** to create political space for dialogue between national climate and energy transition stakeholders and EU-level decision-makers. The Commission should launch the **Climate and Energy Transition Support Service** that provides states and stakeholders with tailored support to resolve implementation challenges,

advance initiatives, support monitoring, verification and reporting, and facilitate partnerships. This service should help monitor the policies and measures included in their NECPs and ensure Paris-Agreement compatibility, ensure that national trajectories are maintained for renewables, energy efficiency, and greenhouse gas reduction, and help states monitor their long-term strategies post-2020²⁹.

Use the European Semester to monitor the transformation to climate neutrality

The Commission should open dialogue with national governments about challenges they face in the delivery of their LTSs to understand better which enhancements to regional cooperation, financial and technical support, or adjustments to market legislation may be needed to facilitate national actions. This will pave the way for an enhancement of the EU's NDC in 2023, setting a post-2030 emissions objective. Progress on addressing these enabling factors should be monitored through the **European Semester and the State of the Energy Union** processes, which should also track delivery of 2030 climate and energy targets, the NECPs and the transformation to net-zero.

Mainstream climate change mitigation in agricultural policy

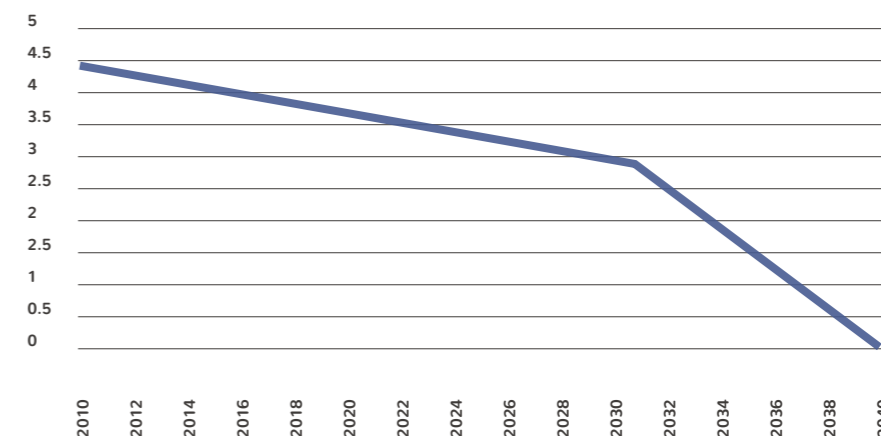
Open the Common Agricultural Policy (CAP) governance to climate and energy. The effective reform of the CAP has created an opportunity to shift some rural development responsibilities away from the traditional oversight of DG-AGRI towards more diverse and expert competencies at DG-REGIO, with a role for DG-CLIMA and DG-ENV to ensure coherence with climate goals. Phasing out today's ineffective direct payments through a just transition programme could then be overseen by DG-EMPL³⁰.

Adjust 2030 targets

EU 2030 targets do not realistically position us for carbon neutrality by 2040. We are to some extent kicking the climate can down the road and will have to pick it up post-2030, when it will be harder and more expensive. The below figure illustrates this.

The EU needs to adjust its targets for 2030 for energy efficiency to 40%, renewables to 45% and GHG reduction to at least 65%. It also needs to develop a 2050 package to fill gaps and reinforce the existing Clean Energy package accordingly. Attention should be paid to the sustainable use of biomass, with special focus on resource conflicts, forest management, sustainable agriculture, indirect land use change mitigation and improved waste management. Perverse outcomes through the use of unsustainable biomass must be avoided. The European Commission should ensure that biomass used for energy production actually delivers substantial climate savings.

GHG REDUCTION PATHWAY (GTEQCO₂ - INCLUDING LULUCF)



HORIZONTAL CHANGE FINANCING

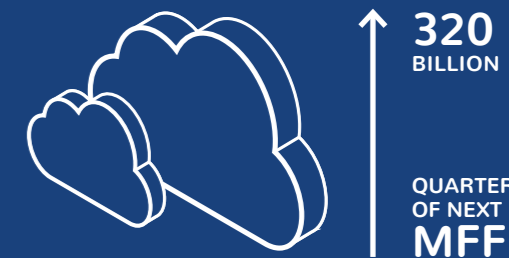


THE SECTOR TODAY

FACTS & FIGURES

- ⊕ Carbon neutrality is not enshrined in current MFF investments and operational programmes.
- ⊕ Private finance is increasingly focused on climate, with investments flowing away from coal, for example.

CLIMATE RELATED SPENDING IS LIKELY TO RISE



PROSPECTS FOR THE FUTURE

- ⊕ **Climate-related spending is likely to rise. It has been proposed to be a quarter of the next MFF (€320 billion)³², with measures to ensure programmes do not undo climate progress.**
- ⊕ Different shares of GHG reductions across the different funds and programmes. The new CAP would devote 40% of funding to climate, if implemented properly.

NEEDS FOR CHANGE

- ⊕ The climate mainstreaming goal needs to be increased from 25% to at least 40% of the EU Budget.
- ⊕ Fossil fuel subsidies need to be excluded from the next MFF.
- ⊕ Carbon pricing should fully reflect external costs. A level of €180 per tonne of CO₂ is established by the German Environment Agency³³ and supported by the Fridays for Future movement.



CHALLENGES

- ⊕ Without improved criteria, three quarters of EU budget spend could end up fuelling the climate crisis.
- ⊕ Important investment gaps remain, especially in efficiency technologies.
- ⊕ GHG emissions in agriculture are growing again. Accountability of CAP climate spending is very weak.
- ⊕ MFF is at risk of further funding harmful projects due to weaknesses at programming stage, in partnership agreements and notably in operational and rural development programmes.
- ⊕ The EU Emissions Trading System (ETS) price levels do not reflect the real external damage costs, polluter pays principle is not fully implemented.



OPPORTUNITIES

- ⊕ Investment to reach 2030 targets will amount to €66 billion per year³⁴, or around €462 billion from 2021-2027, for renewable energy; ~€1.4 trillion³⁵ for efficiency and demand side upgrades; and €2.8 trillion³⁶ for the whole energy system. This will be a major boost to employment and stimulus against a global recession.
- ⊕ Public spending can unlock private investment. Public levers include the MFF, the European Investment Bank (EIB) and the Sustainable Europe Investment Plan.
- ⊕ Green finance initiatives are a major opportunity to drive private equity flows away from fossil fuels.



FINANCING: POLICY OPTIONS

CENTRE STAGE

The core of European budgetary intervention at member state and regional level is the Multiannual Financial Framework (MFF)³⁷. The next MFF, running from 2021-2027, will total around €1.3 trillion³⁸. A quarter has been earmarked for climate action. However, the current provisions do not guarantee climate neutrality of investments and should be reinforced. Reform the fiscal system

Carbon pricing and the removal of harmful subsidies are major opportunities. Fiscal reforms and market-based instruments will positively transform consumer spending patterns. Currently, fiscal policy is mainly under national control and lacks effective carbon and resource pricing. Yet, there are opportunities for improvements both nationally and at EU level. These could include moving to qualified majority voting; using enhanced cooperation; a carbon border tax and an open method of coordination, with a coalition of like-minded countries to advance carbon taxes in Europe. The price of carbon needs to reflect its harms. Complementing the EU emissions trading scheme with carbon pricing can combine the benefits of different approaches. Tax systems should be designed with a sufficient **redistributive effect** to protect disadvantaged groups and head off protests similar to the gilet jaunes.

Climate-proof the MFF

The MFF should align with the Paris Accord. At least 40% of the EU budget should be devoted to climate action, while the rest must not undo progress, such as by encouraging fossil fuel infrastructure or subsidising environmental damage. Financing and governance are intimately linked in the Clean Energy for All Europeans Package. The package includes the NECPs, which in particular should direct the use of EU funds to fill any gaps in climate mitigation, renewable energy and energy efficiency solutions on the ground. Member states taking a leading role in climate action could be rewarded with EU funding³⁹, available via various sources, to compensate them for the additional spending they have incurred. Under the official notification process, the Commission must **apply GHG targets to the Operational Programmes** at national level to ensure they meet ecological goals. Close cooperation between DG CLIMA and DG ENER with DG REGIO could ensure maximum effectiveness when negotiating MFF programmes at national level. The MFF should also tackle climate adaptation and system resilience, through guidance on climate-proofing EU co-financed projects, for example.

Harness new state aid guidelines

To enable product and service value chains to be turned towards net-zero pathways, it will be necessary to **create markets for carbon-neutral services and industrial products for EU**. An essential vehicle for this are state aid guidelines, set to be revised post-2020. Improved guidelines could unlock investment, accelerate technology learning curves, achieve significant costs reductions and give European industries a competitive edge in international markets. They should create markets for industrial transformation, enable electricity-led decarbonisation in the transport and building sectors, provide investor security for specific energy transition technologies through revenue stabilisation, and use a shadow price for carbon emissions of at least €100 per tonne of CO₂ to discourage state aid in carbon intensive assets. Previous commitments to **phase-out fossil fuel subsidies** must be made binding in any new guidelines and bring about the immediate phase-out of public spending in carbon intensive infrastructure, especially gas pipelines⁴⁰.

Develop innovative instruments for innovative technologies

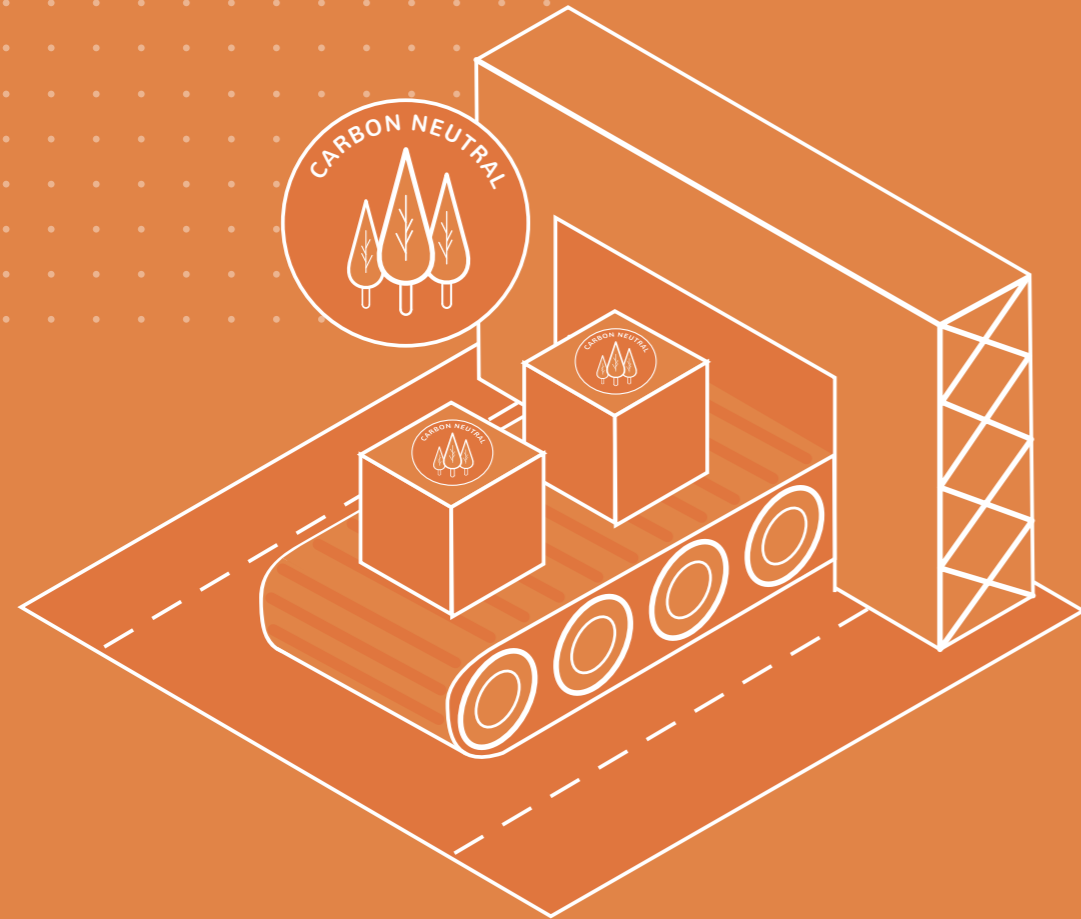
Some member states with significant untapped renewable energy potential are impaired by high financing costs. EU budget rules should be amended to enable states to transfer **5% of their cohesion and structural funds to a European guarantee scheme** to reduce investor risk and thus lower financing costs. This should be combined with adequate funding for the EU renewable energy financing mechanism, so it can serve as the EU's central renewable energy 'gap filler', boosting shortfalls in national clean energy facilities, as envisioned by the Governance regulation. Green Power Purchase Agreements (PPAs) should also be fostered, while administrative barriers to more general power purchase agreements should be removed to encourage greater renewables access. Eventually, Green Public Procurement (GPP) should be developed at EU-level, guided by a definition of value for money as 'value for money across the lifecycle of the asset' to favor truly low carbon options. Further to this, all public procurement using EU funds must obey common standards related to GHG emissions⁴¹ and should be fully compatible with other environmental EU standards, such as under the Ecodesign Directive, Best Available Techniques reference documents (BREFs) and Ecolabel.

Establish a European Investment Observatory

Article 2.1.(c) of the Paris Agreement requires "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development". The Commission can do this by establishing a **European Investment Observatory** to monitor private and public investments made under the MFF, namely NECPs, LTSS, Long-Term Renovation Strategies (LTRS) and Operational Programmes.



SECTOR RECOMMENDATIONS

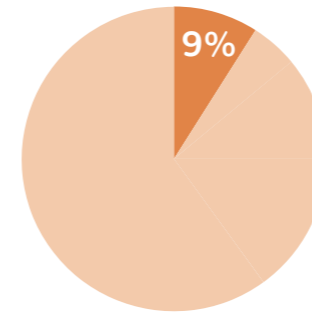


SECTOR RECOMENDATIONS

INDUSTRY

THE SECTOR TODAY

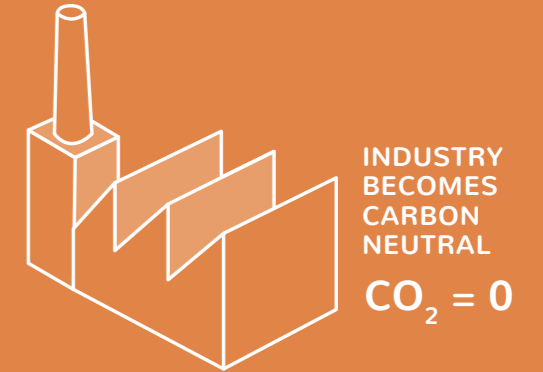
FACTS & FIGURES



GHG EMISSIONS IN 2016

374 Mt CO₂ eq⁴².

⊕ 9% of total EU GHG⁴³.



PROSPECTS FOR THE FUTURE

⊕ Carbon capture solutions may be deployed on a commercial scale for challenging sectors, such as cement and chemicals⁴⁴.

NEEDS FOR CHANGE

⊕ Industry needs to become carbon neutral, consistent with economy-wide GHG goals.



CHALLENGES

- ⊕ EU companies might face competition from carbon-intensive industries beyond Europe with lower standards.
- ⊕ Demand for rare minerals and metals may exceed reserves in the near future⁴⁵.
- ⊕ Decarbonisation of complex industrial processes is difficult.
- ⊕ Performance-based standards for industry do not address GHGs due to limitations set by the EU-ETS to use market-based system only.
- ⊕ Large GHG emitters, including large combustion plants and refineries, get generous BREF pollution derogations slowing the switch to cleaner fuel.



OPPORTUNITIES

- ⊕ Circular economy measures can improve resource efficiency, reduce energy use, GHG emissions and import dependency, and mitigate resource scarcity.
- ⊕ Reduced material inputs raise competitiveness, business opportunities and green jobs.
- ⊕ The post-2020 EU budget investment cycle is an opportunity to reshape industry.
- ⊕ European consumer expectations are a laboratory for the development of high value products.
- ⊕ Deep carbon cuts are already possible through improved energy efficiency measures, electrification of furnaces, alternative production methods and fuel switching.



INDUSTRY: POLICY OPTIONS

CENTRE STAGE

An upcoming European Industry Strategy should guide Europe towards sustainable, clean, carbon neutral heavy industry. It should trigger legislative proposals covering climate mitigation as well as tools for industry to help it remain globally competitive.

Require net-zero consistency in permitting

Without a shift in regulation, investments in carbon intensive industry will likely continue to at least 2050, if not beyond. Some could lock us to emissions for a considerable period, raising mitigation costs and causing stranded assets. To reorient investment, the EU should clearly signal that it is phasing-out high carbon assets. That is not yet happening. The emissions trading scheme allows some companies to receive free credits and its 2050 trajectory is well above net zero⁴⁶. The share of auctioned credits should increase to minimize the number of free, grandfathered, allowances. **Carbon ceilings in infrastructure permitting** should be gradually adjusted to net-zero pathways. Another option could be to consider introducing a **climate neutrality test** when permits are granted in the industrial emission directive (IED) or at environmental impact assessment stage for new investments or major refurbishments. Permits should only be granted if investments are demonstrably on a net zero pathway⁴⁷.

Support demand for zero-carbon basic materials

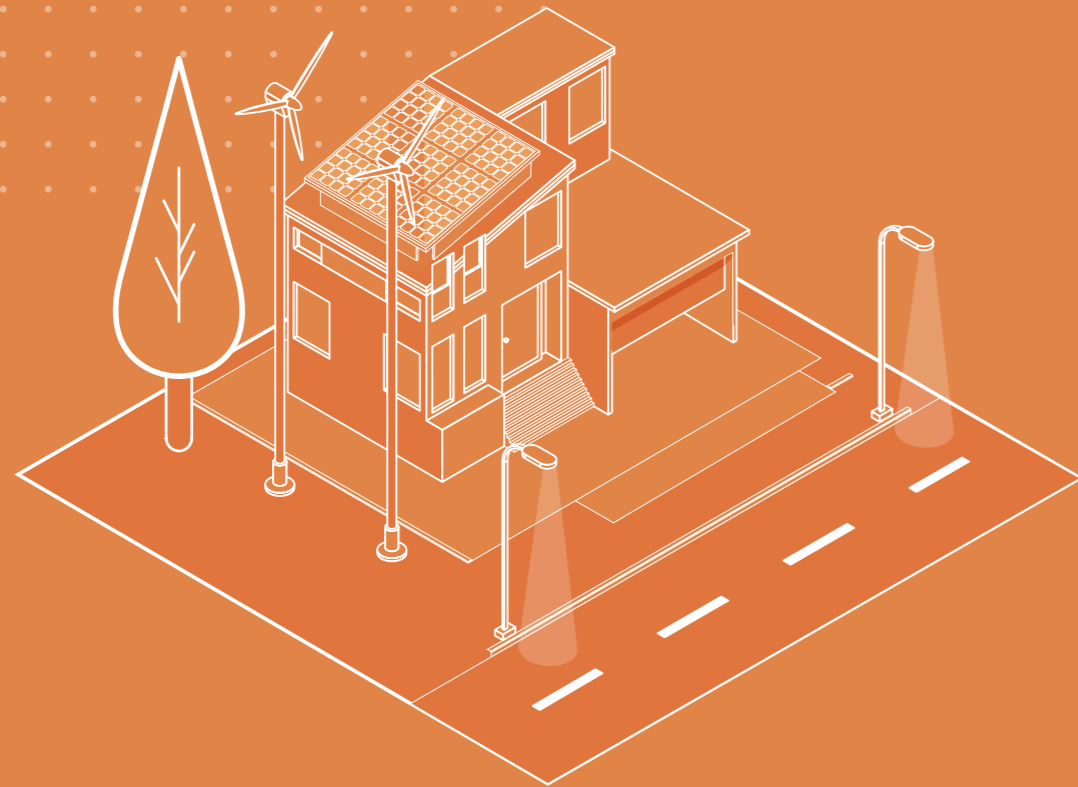
Technologies to create carbon-neutral materials like cement, steel, plastics and aluminum are developing quickly. Companies wanting to market these innovative, but sometimes more expensive products on a commercial scale need a positive market outlook. To address this, the new Commission should launch a **'Buy Clean'** initiative with an EU proposal that obliges public authorities to purchase low-carbon cement and zero-carbon steel, and perhaps eventually other materials, in public infrastructure projects. Second, it should make allowance in state aid legislation for member states to tender for carbon-neutral material producers and receive 'contracts for difference' based on the carbon market price, provided that this support is fully compatible with other Sustainable Development Goals (SDGs). Third, it should pass an amendment to the Clean Vehicles Directive to require vehicles purchased by public authorities to contain a minimum share of zero carbon steel. Finally, the EU should explore a green building materials label to encourage use of carbon-neutral materials in construction⁴⁸.

Start Research and Innovation Mission Net-Zero

Research and innovation (R&I) towards new technologies, products, business models and social practices could deliver considerable climate savings. Public and private research investment should be scaled-up, in tandem and with a results-oriented approach. The dedicated R&I framework programme, Horizon Europe, earmarks 35% of its budget for climate-related projects. This should be raised to 50%, in concert with other relevant financing instruments, such as structural funds and InvestEU. Research, development and deployment projects supported by EU programmes must **demonstrate significant CO₂ savings** to be considered as eligible for earmarked funds, backed by a robust methodology and tracking, which is urgently needed. Projects supported through DG-CLIMA's Innovation Fund should have to prove a significant CO₂ reduction (above 80%) to secure funding⁴⁹.

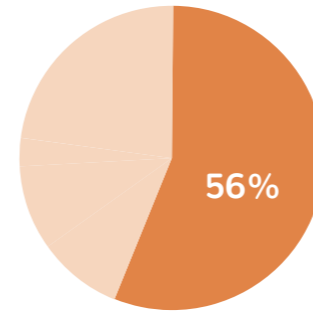
Develop high standards for heavy and chemical industries

For the iron and steel industry, the Commission should develop Best Available Techniques (BAT) emissions requirements for hydrogen-based iron and steel production as well as electrification under the upcoming IED BREFs. For cement production, it should set strict emission limits that will incentivise a fuel switch in clinker production, improved production process and promote more substitution of clinker with other cementitious materials⁵⁰. In the chemical industry, it will be crucial to develop new BAT requirements within the ongoing Waste Gas from Chemical Industry BREF. Other standards concerns processes such as ambitious energy efficiency levels for steam crackers or change in energy generation mode to electrification; fuel switching to renewable-based feedstocks⁵¹; more efficient polymers and catalysts, chemicals recycling (Green Chemistry approach); and carbon capture and utilisation (CCU) that promote industrial symbiosis, such as use of residue flue gas from other industrial sources as feedstock.



SECTOR RECOMENDATIONS

ENERGY



GHG EMISSIONS IN 2016

2416 Mt CO₂ eq⁵².
56% of total EU GHG.

THE SECTOR TODAY

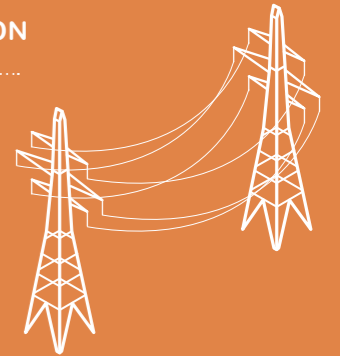
IN 2017, RENEWABLES REPRESENT:⁵³

- ⊕ 1.45 million European jobs.
- ⊕ €155 billion turnover.

POWER SECTOR TO BECOME ZERO CARBON

CO₂ = 0

BY 2040



PROSPECTS FOR THE FUTURE

- ⊕ By 2040, the power sector could be zero carbon⁵⁴.
- ⊕ Emissions of the power sector could become negative by 2050⁵⁵.
- ⊕ Renewables could generate 2.7 million jobs by 2040⁵⁶.

NEEDS FOR CHANGE

- ⊕ By 2040, the power sector should be fully renewable.



CHALLENGES

- ⊕ More than half (54%) of our energy was imported in 2016⁵⁷.
- ⊕ Foreign renewable technology or components risk a trade imbalance. High demand for cobalt and lithium may soon exhaust reserves⁵⁸.
- ⊕ Transition will impact fossil fuel related labour and regions.
- ⊕ Additional renewables infrastructure may face local opposition.
- ⊕ Carbon capture technology yet to reach commercial scale and remains unreliable.



OPPORTUNITIES

- ⊕ Energy import dependency will be reduced through renewables and circular economy policies. Import dependency could reduce to 20% from 2050⁵⁹.
- ⊕ Air quality will be improved through reduced burning of fossil fuels.
- ⊕ Renewables strengthen regional value chains and build up new collaborations between sectors.
- ⊕ Shift to renewable energies accelerates the modernisation of the overall energy system and allows citizens to participate like never before.



ENERGY: POLICY OPTIONS

CENTRE STAGE

The 2018 Clean Energy for all Europeans package is the right tool to foster energy transition up to 2030. But its targets are insufficient to tackle the climate crisis and should be revised upwards. Additionally, a potential upcoming package on gas will present an important opportunity to accelerate a managed transition away from fossil gas by 2040.

Support clean buildings

Establish a mandatory European **energy efficient buildings ombudsman** to ensure landlords that are refurbishing their property meet minimum energy performance requirements on behalf of both commercial and residential tenants. Additionally, mandatory **minimum energy performance standards** for rented properties should be developed, with a vision to phase out worst building classes (e.g. E and F). The Commission should also ensure **only clean and efficient heating appliances remain on the market**, and existing polluting heating systems are replaced, by harnessing the regularly to be updated Ecodesign and energy labelling policy measures to phase out inefficient electric and fossil fuel-based heating systems by 2030.

Renovate a million buildings by 2025

Progress towards making buildings energy efficient remains very low. Just 1% of Europe's existing building stock is renovated a year, less than half that necessary to meet our 2030 target. A major barrier is the small-scale nature of current renovation projects. The Commission should launch a **Renovation Revolution** to renovate **1 million new buildings** by 2025. The initiative should focus on low-income households and office buildings. It should trigger and co-fund 5–10 scalable pilot projects per member state in partnership with national agencies, cities, and industries⁶⁰.

Plug in 10 million solar rooftops by 2025

The cost of solar panels has fallen dramatically, and rooftop units generate more jobs per kilowatt hour than almost any other energy source⁶¹. Yet just 4.7 million households had solar installed in 2015, less than 2% of buildings in Europe. At least 25 million homes could support solar by 2030⁶². To tap the potential, the Commission should launch a **10 million solar rooftops mission** by 2025, prioritising economically disadvantaged households. Regional governments and agencies should be invited to review permitting conditions, identify best practices and create regional financing strategies, including supporting job training.

Support 100 cities to decarbonise heating and cooling

District heating and cooling networks can contribute significantly to renewable energy and efficiency goals. The Commission should create a **100 clean cities** initiative to encourage cities and regions by 2025 to create long-term plans, better integrate EU energy infrastructure planning and access EU funds. Industry should contribute to the joint Ten-Year Network Development Plan (TYNDP) between European network transmission system operators. New renewable district heating and cooling infrastructure could be granted access to Projects of Common Interest (PCI) labelling, the VIP of energy infrastructure development, speeding up construction and facilitating funding⁶³.

Support climate-neutral grid development

Electric and gas infrastructure grids that are now under construction must be made to accommodate a fully renewable system by 2040 and phase-out fossil gas entirely. PCIs identified in the TYNDP must be part of a **Paris Agreement compatible grid** to avoid becoming stranded assets. Lock-in to fossil gas is especially harmful, and the majority of fossil assets need to be phased-out, and the rest assessed on a case-by-case basis. A Commission review of the Trans-European Networks for Energy (TEN-E) regulation should ensure close alignment between energy infrastructure, climate commitments and projections in the LTS.

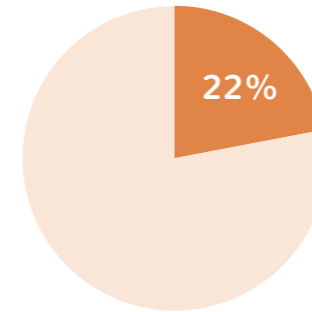


SECTOR RECOMENDATIONS

TRANSPORT

THE SECTOR TODAY

FACTS & FIGURES



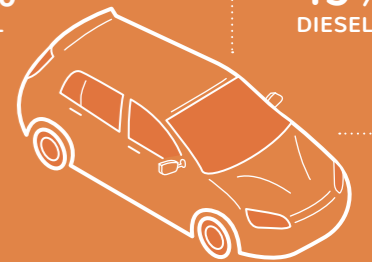
GHG EMISSIONS IN 2016

931 Mt CO₂ eq⁶⁴.

- ⊕ 22% of total EU GHG⁶⁵.
- ⊕ 13 million EU auto jobs⁶⁶.
- ⊕ 222 million passenger cars on EU27 roads in 2016, 51% petrol, 45% diesel, 4% alternatives, including hybrids, 0.1% electric⁶⁷.
- ⊕ Half of all freight delivered by truck⁶⁸.

51%
PETROL

45%
DIESEL



4%
ALTERNATIVES
INC HYBRIDS

0.1%
ELECTRIC

PROSPECTS FOR THE FUTURE

- ⊕ 100% of new car models are expected to be zero emission by 2040 at the latest⁶⁹.
- ⊕ Transport GHG emissions to fall 90% by 2050⁷⁰.
- ⊕ Trucks share in freight could decline to 36% by 2050⁷¹.

NEEDS FOR CHANGE

- ⊕ Around two thirds fewer private cars should be on the roads by 2050⁷².



CHALLENGES

- ⊕ Decarbonising long-distance shipping and aviation is difficult due to battery limitations.
- ⊕ Mobilisation of upfront financing of the network of long-distance rail to facilitate a shift from aviation is challenging.
- ⊕ Changing habits of urban and rural mobility requires a mix of instruments beyond price signals.
- ⊕ New vehicles with internal combustion engines could remain in use for over a decade.
- ⊕ Safe and sustainable batteries should include environmental and recycling standards, carbon footprint accounting for the entire manufacturing process and ethical production standards.



OPPORTUNITIES

- ⊕ Fewer cars will mean less congestion.
- ⊕ Moving away from internal combustion engines will provide cleaner air.
- ⊕ Quality of life will improve, especially for the three quarters of Europeans living in urban areas.
- ⊕ Strengthening of the EU rail infrastructure and market will make public transport more accessible.
- ⊕ Better urban transport will develop with more public transport, bicycles, zero-emission vehicles and associated infrastructure.
- ⊕ Improved footprint reporting will help citizens make better transportation choices.



TRANSPORT: POLICY OPTIONS

CENTRE STAGE

The Union has agreed new CO₂-standards for cars and trucks in 2025 and 2030. These guide carmakers into the realm of electro-mobility and away from carbon fuels. However, a review starting in 2022 is both an opportunity to accelerate this transition and a risk it may be slowed by powerful interest groups.

Finance infrastructure for sustainable mobility

Member states tend to spend EU funds on roads not rail, and often neglect rail freight in particular. EU investment in rail-road terminals and other multi-modal projects is relatively low, in addition with nine out of ten Trans-European Transport Network projects situated in Western and Northwestern Europe, reflecting a big geographic disparity. A similar geographic imbalance between Western and Eastern Europe could temporarily develop in electric vehicle charging infrastructure. Public charging infrastructure in Southern, Central and Eastern Europe is expected to lag behind Northern and Western Europe, according to an assessment of state plans. The Connecting Europe Facility and the Sustainable Europe Investment Plan in the new Commission must ensure **continent-wide rail connection and a comprehensive charging network**⁷³.

Boost transport efficiency and end dirty fuels

Vehicle demand reduction and modal shift are the most important short-term levers available in transport policy. Vehicle efficiency will also help and needs to improve by at least 15% for cars and 20% for trucks if the sector is to decarbonise⁷⁴. Internal combustion engine cars should gradually be banned from sale across Europe, following a lead already set by Ireland, Slovenia, France and the UK. The upcoming **review of CO₂ standards for cars**, starting in 2023, should ensure that most new passenger cars are zero and low-emission vehicles (ZLEVs) by 2030, with potential binding ZLEV sales mandates.

Support decarbonisation of freight and heavy transport

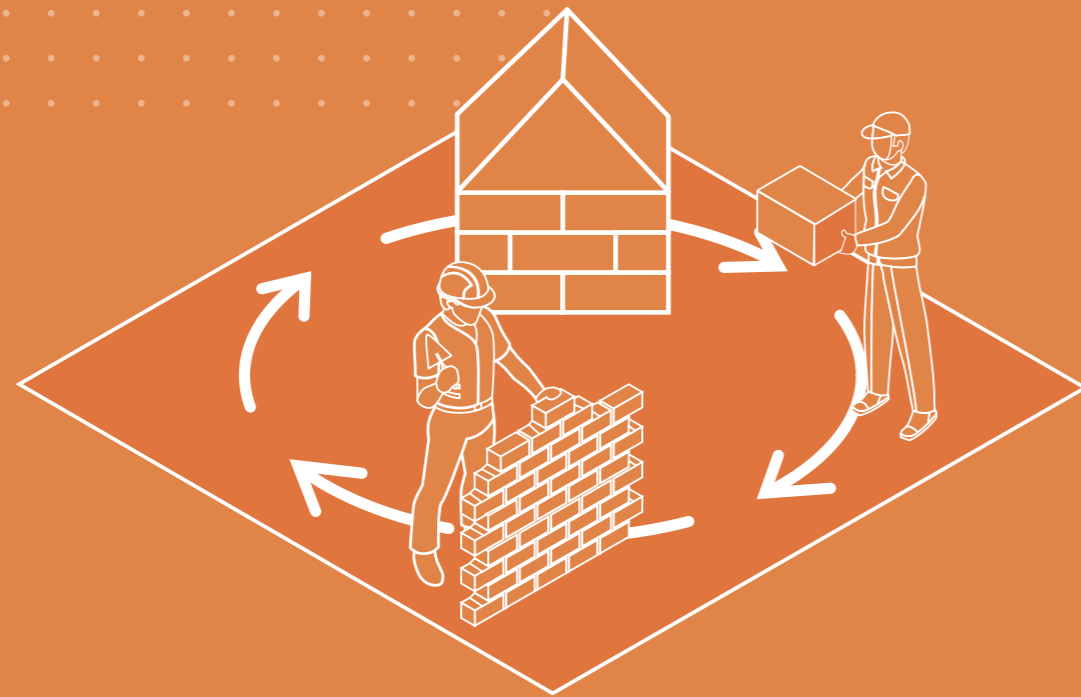
The Commission should propose a **New Vehicle Deal** by 2022, requiring a 40% reduction in emissions from heavy-duty vehicles as well as a binding ZLEV national sales quota of at least 25% by 2030. It should revise the Eurovignette Directive on road charging to enable member states to integrate CO₂ costs of **at least at €100 per tonne** into national road charging regimes, as well as the cost of key infrastructure investment⁷⁵.

Make shipping and flying greener

It is not yet possible to decarbonise planes and long-distance shipping until bio-kerosene and e-fuel technologies mature. Electrification is expected to expand after 2040. Hydrogen technology also awaits commercialisation and scale. To ease these challenges, the Commission should propose a **Decarb-Fuel-package**, spearheaded by an **ambitious kerosene tax**. It should introduce an alternative fuels quota in EU aviation and shipping, together with measures to prevent avoidance strategies among operators, such as moving transport hubs outside Europe. The package should also include robust safeguards for the sourcing of CO₂ for electrofuels production, as a complement to the sustainability framework developed for green hydrogen⁷⁶.

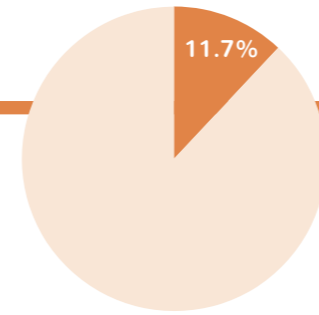
Develop efficient multi-modality for everyone

More efficient travel requires fresh thinking, technology and political signals. We need to change the way society is organised, boost shared transport and remote working patterns. Autonomous and shared vehicles are part technological, part social challenge, with citizens needing to embrace these new alternatives without massively increasing travel demand. In order to reduce emissions from individual mobility, the new Commission must ensure that **citizens have a right for efficient mobility**. This includes an initiative to give citizens easy access to affordable public transport, support for pedestrian and cycling infrastructures, and improve cooperation between public transport operators e.g. providing commuters with a tool to travel across borders without a physical ticket. A carbon footprint calculator should be provided to travelers, offering them information on CO₂ emissions and the possibility to offset them.



SECTOR RECOMENDATIONS

CIRCULAR ECONOMY



JUST 11.7% OF MATERIALS USED ARE RECYCLED, THE REST IS VIRGIN⁷⁷.

THE SECTOR TODAY

FACTS & FIGURES

- ⊕ Europeans each consume 14 tonnes of material on average⁷⁸.
- ⊕ Earth Overshoot Day is reached on 10 May⁷⁹.



PROSPECTS FOR THE FUTURE

- ⊕ Heavy industry carbon emissions could be reduced by as much as half by 2050 through circular economy policies⁸⁰.

NEEDS FOR CHANGE

- ⊕ Overshoot Day should be pushed back to the last trimester by 2030.
- ⊕ Average material consumption per capital should be halved to ~7 tonnes by 2030.



CHALLENGES

- ⊕ Waste prevention, reuse, repair and refurbishment have no EU targets.
- ⊕ No harmonised material flow metrics exist, including embedded emissions for imported goods⁸¹.
- ⊕ Large volumes of materials are contaminated by hazardous ingredients that are hard to trace. Some are so toxic they are now banned, but remain in waste streams. Some recyclers oppose greater transparency.
- ⊕ High demand for biomass means the bio-economy must be lean on resource consumption.



OPPORTUNITIES

- ⊕ Circular business models are often uneconomic compared to linear ones when wider social costs are excluded from pricing.
- ⊕ Competitiveness and material independence will improve from better product policies.
- ⊕ Innovation and progress will be triggered from strengthened green public procurement policies.
- ⊕ Cleaner supply chains will develop through a harmonised product information system.
- ⊕ Decarbonisation and dematerialization could be fostered from a renewed Industrial Policy Strategy and innovation promoting BAT⁸² benchmarks, for example.
- ⊕ Circular economy creates more jobs, compared to the linear economy.



CIRCULAR ECONOMY: POLICY OPTIONS

CENTRE STAGE

Transition to a circular economy needs to step up a gear. All 54 actions in the Circular Economy Action Plan⁸³ are complete or implemented according to the Commission⁸⁴, yet monitors⁸⁵ suggest circular transition has only just begun. Europe should get tough on product design, stop stalling on chemicals and waste policy and work harder to link dematerialisation to decarbonisation.

Reduce the demand for virgin material

The circular economy promises to cut the demand for virgin materials through dematerialisation, the more intensive use of resources, designing out waste and increasing recycled content in products. A **5% annual improvement target for resource productivity**, the amount of resources per unit of GDP, will help steer absolute reductions in virgin material consumption. Legislation should ensure products last longer, are easier to repair, disassemble, upgrade and can be recycled to a quality standard comparable to virgin materials. Design focused on repair and upgradeability of products, plus greater sharing will allow more intense use of goods, materials and less virgin extraction. The Commission should introduce a **'right to reuse and repair'** for consumers and facilitate the development of reuse and repair activities (professional certification, consumers guarantees, better access to repair information and spare parts).

Make products truly circular

Design is hugely important. Build a product bad and it usually heads to landfill. Circularity standards (repairability, disassembly etc.) should be created for products and materials affecting all sectors, but notably those areas already identified by the Commission as the main consumption areas: construction, automotive, textile, electric and electronic, packaging and furniture sectors. All semi-finished products should be **obliged to contain a share of recycled materials by 2030 and increased by 2050**. For example, all plastics produced or used in Europe must contain at least 30% recycled material by 2030, and half by 2050. For product packaging, the rates could be higher still. By 2030, all European public and corporate procurement over a certain threshold should include criteria supporting circularity and other environmental objectives.

Waste less

Waste prevention targets should cover all waste. Reuse targets for packaging and reduction targets for food waste and hazardous materials are so far missing. Municipal waste planning and infrastructure investment (e.g. incineration) need to be checked against the waste hierarchy. Quality standards for reusable and recycled materials should ensure they match the quality of virgin materials to boost their use. **By 2030, no non-reusable or non-recyclable material should get onto the market**, leading to a total phase out of landfill and incineration.

Develop clean waste streams

The material property and chemical content of a given waste stream is a black box. That has to change to ensure quality material flows. A **harmonised database** should convey properties and chemical contents of all products and materials placed on the market, as well as their environmental performance. This will dramatically enhance the potential for reusing and recycling materials, while avoiding toxic components. Digital tools should be mobilised to convey information along value chains.

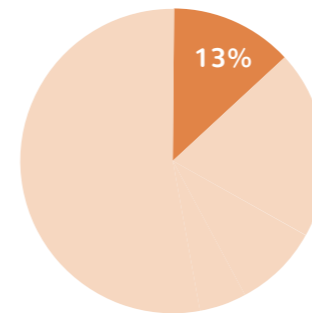
Foster circular economy through fiscal policy

A **tax shift** to reflect the real climate and environmental impact of products throughout their lifecycle will ensure the true cost of virgin material and single-use material and make circular products more attractive. Integrating the carbon savings achieved through use of recycled, reused or sustainably sourced virgin materials can be achieved by including waste incinerators in the next revision of the EU ETS. Taxes on landfill and incineration should rise before incineration and landfill are phased out. Carbon taxation, including a carbon border tax, could unlock economy-wide incentives for circularity and GHG emissions reductions. Greater use of fee modulation in extended producer responsibility schemes, an application of the polluter pays principle, will improve packaging and cut emissions. Tax on building demolition should be raised to support deconstruction, enabling the recovery of materials such as bricks, cement, glass, plastic, insulation and steel.



SECTOR RECOMENDATIONS

AGRICULTURE AND LAND USE



GHG EMISSIONS IN 2017

515 Mt CO₂ eq⁸⁶.

THE SECTOR TODAY

FACTS & FIGURES

- ⊕ Livestock produces 50%, chemical fertilisers 32%, agricultural land use 15%⁸⁷.
- ⊕ ~10 million European jobs⁸⁸.
- ⊕ Organic farmland Europe expanded by 25% in five years to 2017⁸⁹.
- ⊕ 39% of meat substitutes are sold in Europe, the largest share globally⁹⁰.

50%
LIVESTOCK

32%
CHEMICAL
FERTILISERS



15%
AGRICULTURAL
LAND USE⁹⁰

PROSPECTS FOR THE FUTURE

- ⊕ Non-CO₂ emissions are expected to be cut by > 46% in 2050⁹¹.

NEEDS FOR CHANGE

- ⊕ A fully circular and localised economy of nutrients should substitute synthetic fertilisers completely⁹².
- ⊕ Crop and grasslands should be converted to net CO₂ sinks⁹³.
- ⊕ A smaller number of livestock should be raised in Europe, in line with net zero carbon goals⁹⁴.



CHALLENGES

- ⊕ Growing demand for food, fibres and biomass from other sectors, such as energy, construction and clothing could lead to conflict of use.
- ⊕ High exposure to climate crisis, changes in temperature and precipitation⁹⁵ could harm the sector, which is sedentary by nature with slow adaptation.
- ⊕ Modest GHG emission reductions went into reverse in 2012.
- ⊕ Powerful lobbying led to a CAP that undermines the public goods of climate mitigation, resilience, biodiversity, clean air and water provisions.
- ⊕ Besides climate, unsustainable agriculture has caused disastrous biodiversity loss, pollution and soil poverty, which must not be made worse.



OPPORTUNITIES

- ⊕ Agriculture consumes 40% of the EU budget, creating massive potential leverage, if duly focused on effective climate mitigation measures.
- ⊕ Organic farmland is set to continue taking market share, responding to demand.
- ⊕ Vegetarian and even vegan diets are trending⁹⁶.
- ⊕ There is growing evidence that moving to sustainable diets will also benefit our health⁹⁷.
- ⊕ Sustainable land management is an effective response to climate threats⁹⁸.
- ⊕ Unlike other sectors, agriculture and forestry can become a natural carbon sink.



AGRICULTURE AND LAND USE: POLICY OPTIONS

CENTRE STAGE

Agriculture takes the biggest slice of the EU taxpayer pie, consuming nearly half the EU budget. Yet it has made virtually no climate progress to date⁹⁹. This is a major untouched policy lever. Active CAP reform, set for first reading this year, should drive transformational change through a mix of regulatory and financial instruments. Many indirect policies can contribute, including the circular and bioeconomy, trade, chemicals and land use change, to name but a few.

Transform farming for the better

Agro-ecological farming cuts emissions and pollution, rehabilitates shattered wildlife populations, rebuilds wrecked soil, builds food security during climate shocks and can even absorb carbon¹⁰⁰. The Common Agriculture Policy (CAP) is the biggest potential driver for a wholesale shift away from industrial agriculture. **Half of the CAP budget should be directed towards incentivising and rewarding farmers for helping achieve our environmental and climate objectives.** Farming subsidies should support agricultural practices that sequester carbon in soils, for example, such as conservation agriculture (no-tilling, constant soil cover and complex crop rotation) and agroforestry (integrating trees with arable farming or pasture)¹⁰¹. Structural change at DG level is also necessary, as noted in the governance chapter.

Keep carbon locked in the ground

Wetlands release massive amounts of carbon when drained but keep it in the ground when well managed. Grasslands release carbon when ploughed or store it when grazed. The CAP must guard **against conversion to cropland** and fund restoration of damaged carbon sinks¹⁰².

Shift farming to natural fertilisers

Reducing the use of emissions-intensive synthetic fertilisers would bring considerable emissions reductions and wider environmental benefits. There are enough nutrients in animal manure, sewage waste and food waste, which farmers can re-use to fertilise their crops, with nutrient management plans. Handled locally, this shift will foster job creation and security of farming inputs. This is a rightful CAP funding priority which will **support the emerging bioeconomy**, the sustainable use of land and sea resources to make food, materials and energy. In parallel, the European Commission should also develop Best Available Techniques (BAT) for achieving CO₂-free ammonia production for fertilisers, using water electrolysis for hydrogen production.

Nudge us to better diets

We are what we eat, and what we eat is killing us. Reducing meat and dairy production and consumption will improve our health and planet¹⁰³. Europe should **promote dietary change**, albeit carefully, given the cultural significance of food. Policies to create structural change in the livestock sector can be more direct. The EU must work to reduce the number of animals raised in Europe if the bloc is to become sustainable. CAP funding should help farmers to move away from intensive livestock agriculture towards more diverse agricultural systems that are more self-sufficient in feed and fodder.

Ensure CAP money spent on climate mitigation achieves results

The European Court of Auditors has heavily criticised how the European Commission calculates how much CAP money is spent on climate mitigation, arguing that spending is not related to actual results. **Emission reductions should be the only basis to count EU spending towards climate actions**, backed by a transparent methodology. Agriculture and climate policies should be better joined-up to ensure action in one policy area is compatible with other areas. For example, agriculture and energy should not compete for biomass in NECPs. ~240,000 coal jobs¹⁰⁴ in 41 regions of 12 member states, mostly Central Eastern Europe (CEE).



SECTOR RECOMENDATIONS

EMPLOYMENT

**~ 240,000
COAL JOBS**

IN 41 REGIONS



OF 12 MEMBER STATES



THE SECTOR TODAY

FACTS & FIGURES

⊕ ~1.5 million European renewables jobs¹⁰⁵. 2.7 million new renewables jobs by 2040¹⁰⁶.

**1.5
MILLION EUROPEAN
RENEWABLE JOBS**



PROSPECTS FOR THE FUTURE

⊕ 1.5 million additional jobs from energy efficiency investments¹⁰⁷.



CHALLENGES

- ⊕ Large employment shifts a significant challenge for the education and training sector.
- ⊕ Coal, oil and gas dependent regions face social and economic challenges.
- ⊕ Balancing the costs and benefits of transition equitably is a challenge, particularly for tax policy.



OPPORTUNITIES

- ⊕ In most or all sectors, more jobs will be created in a carbon-neutral economy, frequently local, national or European¹⁰⁸.



EMPLOYMENT: POLICY OPTIONS

CENTRE STAGE

The transformative character of the net-zero pathways accelerates societal transformations with winners and losers. To maintain the support for going carbon-neutral, the policies targeting households and industry must be accompanied with social measures like the European Social Fund⁺¹⁰⁹ to support the most vulnerable and mitigate inequalities.

Support a just transition

The Commission should tap the **European Pillar of Social Rights** to ease the transition to a carbon neutral economy. It should assess whether the pillar is adequately influencing national just transition strategies, both through its online scoreboard and through annual Country Specific Recommendations under the European Semester¹¹⁰.

Finance a just transition in coal regions

For as long as carbon capture remains unaffordable and theoretical, coal power remains a dangerous threat that has to be phased out. Three-quarters of coal jobs are in Central and Eastern Europe. The transition to zero carbon is a compelling opportunity for regions to develop local jobs and economic activity and for the EU to close the gap between regions. Due to the length of training and other factors, such a transition is best planned well in advance and be embedded in broader regional development strategies developed together with the communities affected. The Commission has already launched the Coal Regions in Transition Platform to support dialogue and the sharing of experience between regional governments and stakeholders. To turn the platform into a vehicle for driving change, the Commission should **give the Regions in Transition Platform a clear climate and energy transition mandate**, including a foresight component. This must be supported by robust financing opportunities in the next EU budget^{111 and 112}.

Use the European Social Fund (ESF+) to support the social transition

European Social Funds should contribute towards transition. These could be used to attract new employers, fund retraining and infrastructure upgrades. Where coal jobs can be substituted for ones in renewables, the ESF+ should finance the necessary training. It should also support the training of builders to install clean energy and efficiency upgrades.

