



# EIT Climate-KIC Position Paper

## EU Long Term GHG Emissions Reduction Strategy - Consultation

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**climate-kic.org**



Climate-KIC is supported by the  
EIT, a body of the European Union



# EU Long Term GHG Emissions Reduction Strategy - Increased Ambition and a Systemic Approach

## Summary

EIT Climate-KIC is supported by the European Institute of Innovation and Technology. We are one of six KICs acting together as global innovation leaders, delivering world-class solutions to societal challenges. The EIT brings together a large and diverse pan-European innovation community of partners from business, research, academia, public and private organisations. Collectively we operate across the entire value chain of innovation, from education to scale and have built a unique innovation ecosystem, providing pan-European added value.

For the EU Long Term GHG emissions reduction strategy, EIT Climate-KIC believes:

- The EU should take a leadership role and demonstrate increased ambition towards achieving **net zero- emissions**, targeting a date much faster than 2050, and coherent with the Paris Agreement aim of 1.5°C.
- To achieve the speed and scale of decarbonisation now needed, the EU approach cannot be based on step-by-step incremental improvements, but rather must help trigger **systemic change** for decarbonisation. The EU Long Term GHG emissions reduction strategy must create a much bolder vision for change in order to unlock the kind of mobilising environment and 'call to arms' that European actors need to accelerate innovation and transformation efforts.
- Systemic innovation is one way to do this. The EU Long Term GHG emissions reduction strategy should be deliberately designed to encourage and enable a more cross-cutting systemic approach. This means focusing innovation around multiple drivers of change simultaneously: **not only technological innovation**, but also innovation in **citizen engagement, behaviours and skills, finance, business models and policy**.
- The transformation needs to happen across systems that are 'harder' to decarbonise - in **cities, production, land-use and finance** systems.
- Efforts need to focus both on **mitigation and adaptation** measures, at the same time as placing well-being and equality at the heart of the transformation.

## Key Messages for the EU Long Term GHG Emissions Reduction Strategy

### 1) Show ambition and EU leadership

Europe has an extraordinary challenge and time is running out. Preventing catastrophic climate change and achieving the 'well below 2°C' Paris agreement target requires a speed of decarbonisation at least six times faster than anything the global community has achieved so far. If we are to slow global temperature rise down as fast and as effectively as we need to (e.g. in line with

a 1.5°C limit), Europe would need to **achieve net zero fossil carbon emissions by the mid-2030s**.<sup>1</sup> Such a goal is significantly more ambitious than current agreed European targets and very far from the progress made to date. EIT Climate-KIC therefore believes that the **EU should - and can - show leadership and increased ambition via their Long Term GHG Reduction Strategy**. We believe that a net zero future is possible, and that it offers significant opportunities for the European economy, society and citizens.

## 2) We need systemic change

Continuing to work through gradual, incremental changes, and focusing only on single-point step-by-step solutions will not be enough. **What is needed now is a fundamental transformation of economic, social and financial systems that will trigger exponential change in decarbonisation rates and strengthen climate resilience. What Europe needs is systemic change.**

The EU Long Term GHG emissions strategy therefore needs to be deliberately designed to encourage and enable a more cross-cutting systemic approach. Rather than an economic model based on growth-consumption-obsolescence-disposal that continually exploits the planet's resources, Europe needs circular economies where waste is a feedstock, recycling rates are close to 100%, design and new materials make that possible, cultural norms encourage re-use, maintenance and repair, and fossil carbon stays underground. Rather than large, polluting energy systems for domestic use, industry and transport, Europe needs to switch to clean and often localised clean energy production and consumption, and clean mobility-as-a-service that will require changes in the way we live and work. Our obsession for short-term returns in financial markets must be replaced with patient capital designed to value fully the social and environmental benefits of investment, accompanied by a radical shift away from banking on the 'stranded assets' of an expiring fossil carbon economy.

## 3) Focus on multiple drivers of change: not only technological innovation, but also innovation in citizen engagement, behaviours and skills, finance, business models and policy

There is a need to **identify new and different assumptions, values, practices, standards and behaviours across all industrial, social and economic fields to move away from delivering single point solutions or substitutions towards transformational change**. By supporting efforts for strategic systems innovation, the EU can achieve the critical structural and exponential changes that must occur both quickly and on multiple fronts simultaneously to deliver the levels of GHG reduction necessary to meet the Paris targets. Systems innovation requires action across economic, political and social systems and along whole value chains. This means focusing innovation around multiple drivers of change simultaneously: **not only technological innovation**, but also innovation in **citizen engagement, behaviours and skills, finance, business models and policy**. To make this possible, the EU needs to bring together and catalyse large communities to innovate for systemic changes that trigger GHG reduction at scale.

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<sup>1</sup> Recent projections from the Climate Action Tracker. This includes a calculation for Europe to compensate for the development needs of low-income countries

## Where to focus for long term GHG emissions reduction?

The substantial gap between our current efforts and the reality of where we need to be is where we find Europe's climate innovation challenge. The EU Long Term GHG emissions strategy therefore needs to create a much bolder vision for change in order to unlock the kind of mobilising environment and 'call to arms' that European actors need to accelerate innovation and transformation efforts.

EIT Climate-KIC, by tapping into the collective intelligence of our diverse Pan-European community, has identified twelve areas where we believe Europe can achieve significant GHG emissions reduction – if **systemic change** is catalysed. They fall largely within the categories of **cities, land use, production systems, and finance**. Within all areas the EU will need to focus efforts on both mitigation measures and adaptation solutions:

### Cities

- Promoting **retrofit** and **decentralised energy**: driving a significant increase in urban retrofit rates and enable district-scale clean energy production, paving the way for deep cuts in emissions.
- Creating **green, resilient cities**: harnessing the force of nature in infrastructure design to build liveable climate-resilient cities.
- Accelerating **clean urban mobility**: triggering the switch to clean urban mobility to achieve considerable cuts in urban transport emissions.

### Land Use and Forests

- Making **agriculture** climate-smart: increasing the application of climate-smart agriculture solutions.
- Reforming **food systems**: transforming climate-damaging food value chains and enhance the climate resilience of food supply.
- Nurturing **forests** in integrated landscapes: growing carbon sequestration in forests and linked value chains, while avoiding deforestation.

### Production Systems

- Recasting **materials production**: catalysing a switch to a circular economy and transforming production for fossil-energy intensive materials.
- Reducing **industry emissions**: supporting industry stakeholders to cut scope 3 emissions to reach science-based targets
- Rebooting **regional economies**: transitioning carbon-intensive regions to become zero-carbon innovation hotspots.

### Finance

- Mainstreaming climate in **financial markets**: advancing metrics, standards and instruments that enable transparent, true-cost and benefit accounting for a well below 2°C pathway
- Democratising climate **risk information**: enhancing access to risk information through capacity building and a major expansion of the climate services market
- Fostering bankable **green assets in cities**: developing capacity in preparing projects and investment vehicles to boost the availability of sustainable investment assets in cities

## Why these focus areas?

### Cities

Sustainable urban development is a fundamental system to address for Europe to achieve the 1.5-degree pathway. Cities consume 75 per cent of natural resources globally (materials, energy, water), produce 50 per cent of global waste, and generate 60–80 per cent of GHG emissions. European cities are part of a growing globally connected marketplace; those cities that solve these challenges will be more productive, attract high value jobs and create the solutions that are globally valued. Cities also often have greater autonomy to be more ambitious than the state they form part of.

To catalyse change Europe needs to focus on the **entire city system to unlock deep - rather than incremental - change**, find new ways of engaging citizens, develop new finance instruments, seek out and scale the use of new materials and technologies and build capacity among decision makers. **Deep retrofit and decentralised clean energy use** are part of the solution, as well as increasing the provision of **nature and resilience in cities**. Finally, the EU needs to support the acceleration of **clean urban mobility** in cities triggering ‘avoid, shift, improve’ approaches to achieve considerable cuts in urban transport emissions.

### Land use and Forests

Land use is key to achieving the necessary levels of GHG reduction to achieve the Paris targets. Through improved land use, soil carbon sequestration can be enhanced, damages due to deforestation can be reduced, and huge quantities of fossil carbon can be substituted with newly mobilised carbon. A small 0.4 per cent average annual increase of the organic carbon contained in soils could be achieved by improved agricultural practices and would alone capture our annual anthropogenic greenhouse gas emissions, while increasing soil fertility. Yet the challenges are as great as the potential. Many land use actors (farmers, foresters) do not currently benefit economically from climate-friendly practices, which means that other change agents and leverage points need to be mobilised. The EU needs to facilitate the realisation of this potential through systemic approaches that increase the application of **climate-smart agriculture solutions**; transform climate-damaging **food value chains** and enhance the climate resilience of **food supply**; and grow **carbon sequestration in forests** and linked value chains, while avoiding deforestation.

### Production systems

Resource productivity is still underexploited as a source of wealth, competitiveness and innovation. According to recent studies, Europe loses 95 per cent of material and energy value, while on average using materials only once<sup>2</sup>. Research on the built environment, food and automotive sectors shows that a **closed-loop economy** could reduce emissions by as much as 48 per cent by 2030 and 83 per

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<sup>2</sup> McKinsey (2015): Europe’s Circular Economy Opportunity <https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/europes-circular-economy-opportunity>

cent by 2050 (compared with 2012 levels)<sup>3</sup>. To advance a transition to a sustainable production system, the EU needs to focus on areas that have potential to shift the system as a whole: recasting the **materials production of high emission materials**, supporting key **industry stakeholders to reduce scope three emissions**, and rebooting regional economies by supporting the **transition to low carbon economies**.

## Finance

The global financial system plays a critical role in the climate agenda. Financial markets offer both the biggest threat to advancing toward a zero-carbon resilient future, and the greatest opportunity for investing in this future. On the one hand, the short-term and return-driven motivations of financial markets run counter to the long-term ambitions of achieving a zero-carbon future. On the other hand, small changes to the way in which financial markets operate can redirect significant flows of money into climate-aligned investments. By **integrating climate into mainstream financial markets**, the impacts and effects of climate change will become a necessary and accounted cost in the economy; creating strong, financial incentives to do something to reduce emissions.

The EU therefore needs to focus on developing the information, tools and capabilities needed within the financial system to **transform the way financial markets operate**. Financial markets need to systematically **integrate climate considerations, risks and costs** into their value models, and in doing so will produce a step-change improvement in Europe's progress toward a zero-carbon future. Integrating new non-monetary considerations into financial markets will ensure that the global financial system shifts to become climate-aligned and becomes a significant contributor to overall climate progress.

## Conclusion

The substantial gap between our current efforts and the reality of where we need to be is where we find Europe's innovation challenge. The areas outlined above represent some of the biggest challenges holding back the shift to a zero-emissions economy, but at the same time they present some of the most significant opportunities for innovation-enabled growth in Europe. The magnitude of these challenges, crossing national boundaries, industrial sectors and societal norms, creates significant inertia and means that solutions need to **work on multiple points of intervention and leverage simultaneously** – adopting a systemic approach. To achieve long term GHG emission reductions, Europe needs to position itself at the **forefront of systems innovation in these areas**.

Systems innovation will require action across economic, political and social systems and along whole value chains. To drive long term change, Europe needs to consider not only technological solutions, but also innovation in the financial system, policy and regulatory frameworks, citizen engagement, and new business models. To accelerate the transformation, Europe will likewise need to support the development of the necessary skills, competencies and behaviours among European citizens.

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<sup>3</sup> McKinsey (2016): The circular economy: Moving from theory to practice. <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/the-circular-economy-moving-from-theory-to-practice>

Building awareness and knowledge are among the first steps to helping individuals and sectors to act on -and adapt to - the challenges and opportunities that the transition to a net-zero emissions economy will bring.

## About EIT Climate-KIC

EIT Climate-KIC (Knowledge and Innovation Community) is the EU's largest public-private partnership addressing climate change through innovation. Our community consists of over 300 leading partners from business, academia, the public sector and NGOs. Our purpose is to help create a prosperous, inclusive, climate resilient society founded on a circular, zero-carbon economy.

We focus on levers of systemic change, looking for where innovation is most needed to accelerate deep decarbonisation (elimination of fossil fuels and negative carbon) and effective adaptation. EIT Climate-KIC is predominantly grant-funded by the European Institute for Innovation and Technology, a body of the European Union and acts as a platform to work across boundaries and across sectors, fostering innovation as a catalyst for transformation.