

TRANSformative policies for a ClimaTe-neutral European UNION

To achieve climate neutrality by 2050, EU policy will have to be reoriented – from incremental towards structural change. As expressed in the European Green Deal, the task is not only to initiate the necessary transformation in the coming years, but also to enhance competitiveness, productivity, employment and health. To mobilise the creative, financial and political resources to achieve the required degree of technological, economic and behavioural change, the EU also needs a governance framework that facilitates cross-sectoral policy integration and allows citizens, public and private stakeholders to participate in the process and to own the results. The 4i-TRACTION project brings together nine partners from seven European countries to analyse how this can be done: Vrije Universiteit Brussel (*Belgium*), Itä-Suomen Yliopisto (*Finland*), I4CE (*France*), Climate Analytics, Ecologic Institute (*Germany*), CE Delft, Wageningen University (*Netherlands*), Wise Europe (*Poland*), Universidad De Vigo (*Spain*).

The project analyses what transformative climate policy could look like for the EU. Based on a stocktake of existing climate policies and their performance, it will spell out a number of policy avenues and an overarching governance framework to describe how the current mix of EU climate and energy policies needs to evolve in the 2020s to set course for climate neutrality by 2050. In doing so, it takes the realities of EU policy making as its point of departure – from the European Green Deal to the post-Covid-19 recovery efforts.

This also encompasses a thorough analysis of the factors that contributed to the achievement of the EU's 2020 climate targets, supported by an assessment of key climate policies and their implementation in seven Member States. The analysis will be structured around four cross-cutting core challenges, the four "i's":

1. fostering breakthrough **innovation**,
2. shifting **investment** and finance,
3. rolling out the **infrastructure** for a climate-neutral and resilient economy, and
4. **integration** of solutions across sectors.

This structure reflects that a systemic transformation will need to evolve beyond sectoral policy approaches. Incorporating scientific insights and policies from outside the EU as well as examining how the EU's efforts interact with those of other countries, the project will also look beyond EU borders. The analysis will be grounded in science, but also aligned with the EU's dynamic political environment. To receive input, provide feedback and validate conclusions, the project will closely engage with stakeholders throughout its lifespan.



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Objectives

The overall goal of 4i-TRACTION is to develop and assess transformative policy avenues for the 2020s, and an effective governance framework to implement them, aligned with the EU’s long-term objective of climate-neutrality by 2050 as the EU’s

contribution to achieving the objectives of the Paris Agreement and the implementation of the SDGs. The following table breaks down the general and specific objectives that 4i-TRACTION is designed to achieve.

GENERAL OBJECTIVES	SPECIFIC OBJECTIVES
<p>Identify key success factors and barriers for delivery of 2020 targets</p>	<ul style="list-style-type: none"> Analyse the performance of EU climate policies, including impacts on the environment, the economy and technology development and diffusion, and transformative potential Identify the main drivers and barriers for achievement of the 2020 climate and energy targets at European and national levels, including the contribution of low-carbon investment flows, finance models, industrial innovation Assess trade-offs and conflicts in reaching climate goals, e.g. related to the energy-land-use nexus or to distributional effects
<p>Determine critical points for political intervention in the 2020s to inform future policy</p>	<ul style="list-style-type: none"> Develop a concept of socio-economic transformation towards climate neutrality, structured around the “4i” transformation challenges Develop a robust transformational scenario including emissions pathways for key sectors in line with the EU climate goals for 2030 and 2050 and the goals of the Paris Agreement Using the concept of socio-economic transformation and the transformational scenarios as a benchmark, describe in detail the interventions needed in the 2020s, with focus on the “4i” challenges
<p>Identify and assess four alternative transformation avenues towards 2050</p>	<ul style="list-style-type: none"> Identify core policy instruments to drive transformative change, assembled into four alternative, consistent and cross-sectoral policy avenues specified for the short, medium and long term Assess the relative benefits, costs, and risks associated with the different avenues using customised quantitative and qualitative impact assessment tools
<p>Develop elements of a governance framework for implementation of transformative policy avenues</p>	<ul style="list-style-type: none"> Identify needs to improve the existing EU governance framework to enable effective implementation of avenues and increase their resilience in politically turbulent times Develop proposals for the extension or reform of existing EU governance mechanisms to address the needs identified, and to resolve trade-offs and conflicts between different objectives

Extend the analysis to major emitters and less-developed countries outside Europe

- Contribute relevant insights for the implementation of EU policies and initiatives, such as the EGD, the Energy Union and the EU Adaptation Strategy, at EU and at Member State level
- Identify successful policy examples from other countries and regions with focus on the four i's, and assess their transferability to the EU context
- Analyse the effects of the EU progressing towards climate neutrality on the EU's interactions with international partners to deliver recommendations for the EU's climate diplomacy and bilateral cooperation efforts

Increase ownership, relevance and feasibility of proposals by engaging with policy makers and stakeholders

- Engage stakeholders in the Advisory Board and the Community of Experts in the research design and implementation
- Gather feedback and input throughout the project to validate findings and increase their relevance
- Involve experts from selected non-EU countries to identify effects of different transformation avenues, best practices and opportunities for learning and cooperation

Concept

Related to the need for transformational change and governance, 4i-TRACTION focuses on four core challenges that are critical for transformative climate action post 2020, and for the path toward climate neutrality by 2050. These challenges are

not exhaustive, but they represent core challenges that are at the heart of the long-term transformation effort: in all these areas, deeply ingrained path dependencies need to be redirected in the 2020s to enable transformative change.



In the 2020s, strategic investments into zero-carbon technologies and tools to promote zero-carbon innovation will be necessary. This requires a better alignment of the innovation policy mix with mitigation and adaptation goals, helping to develop breakthrough technologies that drastically reduce GHG emissions, lead them to market maturity and deploy them at the necessary scale.

This involves a smart mix of private and public innovation support, and sharing of the costs and benefits. In addition to energy-intensive industries, the issues involved include the circular economy, enhanced resource efficiency and the bioeconomy. Beyond technological change, the challenge requires consideration of societal change and acceptance.

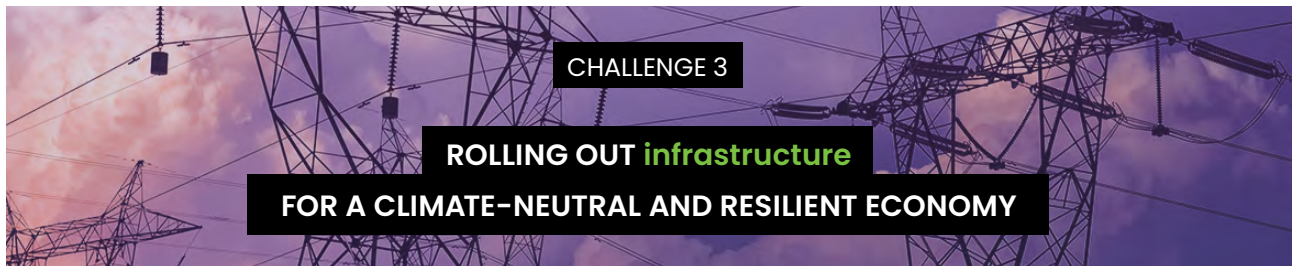


CHALLENGE 2

**SHIFTING *investment* AND FINANCE
TO OVERCOME MARKET FAILURES AND MOBILISE PRIVATE CAPITAL**

Shifting investment and finance will require novel financial instruments and tools to overcome market failures and mobilize private capital. Taking into account that different financial structures lead to significantly different overall costs, financial regulation and the governance of the financial sector need to evolve.

The EU and its Member States will need to understand and shape connections between financial flows and real-economy investments, which are evolving in a changing economic environment affected by climate change impacts and the transformation toward a carbon-neutral economy.



CHALLENGE 3

**ROLLING OUT *infrastructure*
FOR A CLIMATE-NEUTRAL AND RESILIENT ECONOMY**

This includes the energy infrastructure (electricity, heat, green hydrogen), the mobility infrastructure (e-mobility, low-carbon mobility, modal shift, urban form), building infrastructure and infrastructure for carbon capture and utilisation. Infrastructure will also be needed to connect different economic sectors ('sector coupling') to enhance efficiency, stor-

age and flexibility. Cross-cutting requirements are that any new infrastructure will need to be resilient against climate change impacts, and will need to be suited to exploit the full potential of digitisation. At the same time, infrastructure will also have to be embedded in societal needs and societal acceptance as this is the key driver avoiding carbon lock-in.



CHALLENGE 4

STRENGTHENING *integration* ACROSS SECTORAL SYSTEMS TO ALIGN SECTORAL DEVELOPMENTS, AVOID INCONSISTENCIES AND MAXIMISE SYNERGIES

In order to achieve climate neutrality, different sectors and sectoral systems will need to be coupled and integrated so that sectoral developments are aligned, inconsistencies avoided and synergies maximised. Particular attention therefore needs to be paid to the design of intersectoral nexi and the consideration of cross-sectoral effects. Prom-

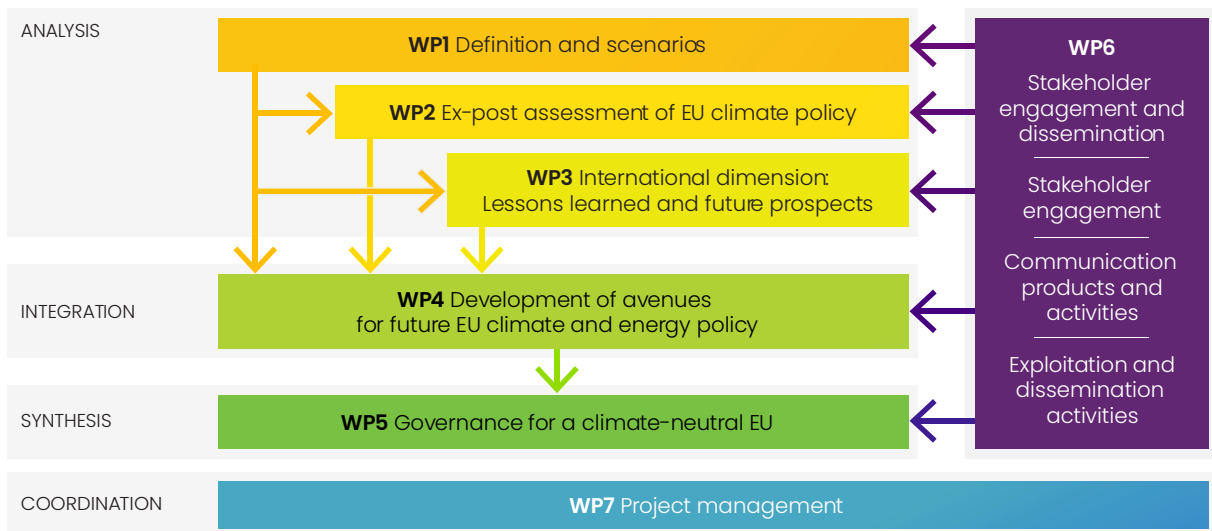
inent examples include the link between power generation and land transport as well as buildings through electrification as a decarbonisation strategy, but also the energy-land use nexus based on the role of forests and agriculture as sources of bioenergy (next to their crucial role as sinks/sources of GHGs and in adaptation).

Focusing on the four i's is expected to produce novel insights for the political management of the transformation. While 4i-TRACTION will not lose sight of sectoral specificities, the four i's will serve to structure the analysis and dive deeper into barriers and opportunities of the required transformation. This analysis will include a time

dimension which reflects that barriers and drivers are not static, but evolve over time. Anchored in a real-world perspective, the analysis will highlight trade-offs that can exist between different valid societal goals, and propose governance approaches to address them effectively.

Implementation – work plan

The project's objectives and overall concept are pursued through a set of seven interlinked work packages:



WP1 provides the conceptual groundwork and the quantitative framework for subsequent steps by providing a definition and taxonomy of transformative climate policies, and a quantitative scenario of what the transformation to a climate-neutral economy entails for the EU Member States.

WP2 provides an ex-post assessment of EU climate policy and the factors that have contributed to attaining the EU's 2020 climate and energy targets.

WP3 combines both a backward-looking and a forward-looking perspective, by analysing international best practice examples of transformative climate policies outside the EU, and

by developing recommendations how the EU could support such policies in its climate diplomacy and bilateral cooperation efforts.

WP4 develops a set of policy avenues to attain the EU's climate goals and provides an ex-ante assessment of their expected impacts.

WP5 builds on this by developing proposals for an EU climate governance framework that is capable of delivering transformative change.

WP6 coordinates the stakeholder engagement that is an integral part of the research activities in all WPs.

WP7 provides the project management activities.

About the project

4i-TRACTION – innovation, investment, infrastructure and sector integration: TRAnsformative policies for a ClimaTe-neutral European UNION

To achieve climate neutrality by 2050, EU policy will have to be reoriented – from incremental towards structural change. As expressed in the European Green Deal, the challenge is to initiate the necessary transformation to climate neutrality in the coming years, while enhancing competitiveness, productivity, employment.

To mobilise the creative, financial and political resources, the EU also needs a governance framework that facilitates cross-sectoral policy integration and that allows citizens, public and private stakeholders to participate in the process and to own the results. The 4i-TRACTION project analyses how this can be done.

Project partners



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