Climate Recon 2050:
Dialogues on Pathways and Policy

Briefing Note 01:

2050 Climate Strategies in EU Countries: State of Play

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Key Messages

- **Twelve EU Member States already have national long-term climate strategies** and thirteen others have started their strategy preparation processes. The existing strategies of France, Portugal and the UK are already being updated to reflect the countries' new, more ambitious targets – driven by the Paris Agreement.
- A key benefit of long-term strategies is that they provide **policy direction** and create an **environment of certainty and policy coherence** beyond electoral cycles.
- The **process of creating a long-term strategy** provides opportunities to elaborate a transformative vision of a carbon-free future, seek consensus and generate political support for the strategy through a **broad stakeholder dialogue**.
- Policymakers should strive to make this process **inclusive**, involving civil society, communities, businesses, local governments and others in a meaningful way.
- As countries create transformative pathways for their societies and economies, developments in each Member State will have impacts on others. **Close cooperation between EU Member States** can help identify those impacts, unlock additional options and reduce costs.
- A **coordinated approach between the EU institutions and Member States** is essential. The anticipated EU-level 2050 strategy could play a crucial role in identifying options beyond the scope of individual national strategies. Intra-EU exchange can also facilitate information flow on methods, data and assumptions and promote opportunities for harmonisation of national and union-level plans & strategies.
- **Policymakers stand to gain from a national debate** on just transition in the face of the deep changes necessary to make the goals of Paris Agreement a reality.

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DTU Technical University of Denmark

ENEA Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

Climate Recon 2050 project is financed by EUKI, a project financing instrument by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB). Its implementation is supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). It is the overarching goal of the EUKI to foster climate cooperation within the European Union in order to mitigate greenhouse gas emissions. It does so through strengthening a cross-border dialogue and cooperation as well as exchange of knowledge and experience.

This Briefing Note presents the first insights from Climate Recon 2050 – a project aiming to facilitate intra-EU exchange and foster the creation know-how and networks essential to develop effective and ambitious national long-term climate strategies as a tool to guide a successful transition to a low-carbon economy. The Briefing Note brings together insights from the project's activities – including a day of discussions on long-term climate planning held among policymakers from 10 EU Member States - and builds on related research by project partners.

Context: the transformative influence of the Paris Agreement

Since the turn of the decade, **12 out of the 28 EU Member states have published their long-term climate strategies** – the planning documents that indicate greenhouse gas (GHG) emissions reduction targets for the mid-century, and provide a roadmap for reaching those targets. Virtually all other EU Member States have undertaken some activities to inform such long-term planning. These strategies are unlike most other government strategies in more ways than one: they create plans for a much longer time period and encompass an unusually broad spectrum covering almost all economic activities.

The impulse for many of the current national strategies can be traced to the Paris Agreement (PA) and the period leading up to its adoption. Achieving the PA's ambition requires the world community to undertake joint efforts to reach net zero emissions in the second half of this century. To facilitate this transition the PA's article 4.19 mandates all parties to formulate and communicate "long-term low greenhouse gas emission development strategies". Parties are invited to communicate such strategies by 2020.

At the EU level, the commitment to implement this forward-looking vision of the PA is reflected in Article 14 of the Regulation on the Governance of the Energy Union. The **Governance Regulation (GR) obliges all Member States to prepare long-term climate strategies by 1st January 2020,** with a perspective of at least 30 years into the future (Article 14 GR). The strategies should contribute to achieving net-zero emissions "as early as possible" and to eventually reach net-negative emissions. The strategies are to cover plans for emissions reductions in a number of individual sectors, links to other national long-term objectives and, "to the extent feasible" expected socio-economic effect of the decarbonisation measures (Council of the European Union, 2018). Most of the currently existing Member States strategies (some of which predate the PA) refer to the European Council 2009 goal of 80-95% emissions reductions below 1990 levels, to be reached by mid-century.

In some countries**,** however, **the strategy processes emerged as a result of a strong domestic interest**. The United Kingdom, for example, published its first long-term climate strategy, *The UK Low Carbon Transition Plan*, already in 2009. The strategy was mandated by the 2008 Climate Change Act, which itself was a result of several years of intense political engagement, supported by the findings of the 2006 Stern Report (see Duwe et. al., 2017). In both Germany and France, the long-term climate planning processes were triggered by a national debate on nuclear energy and the country's energy future.

Why long-term climate strategies?

Insights generated from the Climate Recon 2050 project, supported by emerging literature on the topic (see e.g. Rüdinger et. al., 2018), suggest that long-term climate strategies (LTSs), and their underlying models, are essential to reaching long-term emissions reductions targets, as they **provide a clear trajectory to inform policy planning** and translate the international obligations into the national context. To this end, LTSs often contain milestones, which show how the efforts need to be distributed in time, if the

country's targets are to be reached and allow to monitor progress and identify need for additional measures. Comprehensive modelling exercises allow to understand the size of the gap between the current pathways and what will be required to meet the 2050 targets, and the ways to bridge those gaps.

A 2050 strategy provides a clear message for all stakeholders, both internal and external to the government. A comprehensive LTS forms an implementable plan with clear **responsibilities** across the government and creates an environment of policy certainty and policy coherence beyond electoral cycles. A clear, forward-looking vision of a low-carbon economy signals the transformation to investors and provides certainty in this regard and thus also allows avoiding infrastructural lock-ins and path dependencies. The modelling exercises that (in most cases) accompany the production of a LTS can provide social and economic impact assessment of the transformation, which allows proactive preparation for and thus avoidance of potential negative impacts and risks.

Additional benefits stem from the process of preparing a strategy. Creating an LTS can provide opportunities to raise public awareness and facilitate in-country dialogue about climate change and approaches to mitigation. In the face of the significant changes needed to achieve the deep emissions cuts required, the process of creating an LTS provides opportunities to communicate to society the importance of climate planning, to seek consensus and to create a transformative vision, clearly outlining the costs and opportunities of a transition to low-carbon economy. Such a process can also reveal conflicts between different national interests which can be used to turn it into a platform to negotiate solutions. Such proactive engagement with the impact of transformational change can help ensure a just transition for those involved in sectors particularly affected.

In particular, policymakers point to **the importance of conducting an extensive public consultation** and a comprehensive stakeholder involvement process. In Estonia, over 80 interest groups were included from the very beginning of the strategy preparation, from problem definition, to discussing impact assessments prepared by the government. In Germany, such dialogue and consultation resulted in a catalogue of 97 climate measures presented to the Environment Ministry. In this specific case, the process is said to have raised awareness of the transformation debate and the importance of the long-term climate plan's development amongst many constituencies. However, there were also some frustrations with the way the input was reflected in the final plan. In addition, Members of Parliament had been largely left out of the dialogue, and thus no support was created for the plan among that group. In France, the broad public consultation and stakeholder involvement process were instrumental to ensuring a broad buy-in into the strategy that is meant to be legally binding for the public sector but also engaging and applicable to all. In Portugal, the driver for the public consultation also included the desire to access the dedicated knowledge that specific sectoral stakeholders can provide – as a means of enhancing the strategy's quality.

State of play: long-term climate strategies in the EU

The following overview table highlights the **variety among the existing national LTS in the EU**. While some of the strategies take a form of a ministerial or governmental report with little or no binding power, others are officially adopted by parliament or cabinet, or are published as a requirement of an existing law and contain binding provisions. The **formal responsibility of strategies varies**. Most strategies are prepared by ministries dealing primarily with environment, or climate, but some lie within the competence of ministries of economic affairs, as is the case in Italy, Finland and the UK. Almost all existing strategies have a broad sectoral coverage and often include pathways for emissions reductions and sectoral goals

Member State	Long-term strategy status	Reduction target[1]	Includes other targets	Includes milestones	Sectoral coverage	Legal form	Leading Ministry / Department
Austria	*Process not yet started*						
Belgium	*Process started*						
Bulgaria	*Process not yet started*						
Croatia	*Draft published (2017)*						Environment and Energy
Cyprus	*Draft published (2014)*						Agriculture, Natural Resources and Environment
Czech Republic	Adopted (2017)	80%[2]	No	Yes	All sectors	Government resolution	Environment
Denmark	Published (2011-2016)[4]	80-95%	Yes	Yes	All sectors	Governmental policy plan	Climate, Energy and Building
Estonia	Adopted (2017)	80%	No	Yes	All sectors	Parliament resolution	Environment
Finland	Adopted (2014)	80-95%	No	No	All sectors	Parliamentary Committee Report & Climate Change Act	Economic Affairs & Employment
France	Adopted (2015), under review[3]	75%	Yes	Yes	All sectors	Published as a requirement of an existing law	Ecology, Sustainable Development and Energy
Germany	Adopted (2016)	80-95%	Yes	Yes	All sectors	Government resolution	Environment, Nature Conservation and Nuclear Safety
Greece	Published (2012)	60-70% (2005)	Yes	No	Energy only	Ministry report	Environment and Energy
Hungary	*Process started*						
Ireland	Published (2017)	80%	No	No	All sectors	Published as a requirement of an existing law	Communication, Climate Action & Environment
Italy	*Process started*						
Latvia	*Process started*						
Lithuania	Adopted (2012)	80%	Yes	Yes	All sectors	Parliament resolution	Environment
Luxembourg	*Process not yet started*						
Malta	*Draft published (2017)*						Sustainable Development, Environment and Climate Change
Netherlands	Published (2011-2016)[4]	80-95%	No	Yes	Energy, Transport, Buildings, Industry	Government report	Infrastructure & Environment (Climate Agenda); Economic Affairs and Climate Policy (Energy Agenda)
Poland	*Process started*						
Portugal	Published (2012), under review[5]	50-60%	No	No	All sectors	Environment Agency report; 2030 goals as Government Decree	Environment Agency
Romania	*Process started*						
Slovakia	*Process started*						
Slovenia	*Draft published (2010)*						Government Office of Climate Change
Spain	*Process started*						
Sweden	*Process started*						
United Kingdom	Reviewed (2017)	80%	No	Yes	All sectors	Published as a requirement of an existing law	Business, Energy and Industrial Strategy

[1] - % reduction by 2050 compared to 1990 levels (unless stated otherwise)
[2] - Actual target is absolute, aiming to reach 39 Mt CO2-eq of emissions by 2050, which is equivalent to 80% reduction against 1990 levels.
[3] - The strategy is currently under review, with an updated version due to be published by 2018. The updated version is expected to contain a revised goal of reaching GHG neutrality by 2050.
[4] - Strategy consists of more than one document, published over several years
[5] - In October 2017 a project to plan Portugal's transition to carbon neutrality by 2050 was launched by Prime Minister Antonio Costa

and milestones for the sectors of energy, industry, buildings, transportation, waste, agriculture and land use.

At present, the strategies with the most ambitious emissions reductions targets adopted thus far – the ones of Denmark, Finland, Germany, and Netherlands – plan for emissions reductions of 80-95% below 1990 level by 2050. However, currently both Portugal and France are in process of reviewing their existing strategies, to reach a new planned goal of net-zero emissions by 2050, and a similar target will be contained in Sweden's LTS, mandated by the 2017 Climate Act. With many of the strategies currently being prepared or undergoing a review process, the information in the overview table will require frequent review to capture new developments. All future iterations will be available under https://climatedialogue.eu/outputs

2050 strategies: opportunities and challenges

The Climate Recon 2050 work has identified a number of key topics and challenges that are of concern for EU Member State policymakers charged with preparing LTS.

A. Collaboration between the Member States

One key identified opportunity and need is increasing cooperation between Member States. Many policymakers voiced their regret over the **limited collaboration to date**. This seems to be a particularly important gap to fill given that, as countries create transformative new pathways for their societies and economies, the developments in each Member State will have impacts on others. Therefore, it is essential that national modelling takes into account both how they will be affected by planned future developments in neighbouring countries, and how, in turn, the domestic policies and activities will impact their neighbours and partners – and whether, once added up, those policy choices are sustainable. Moreover, **coordinated regional approaches could unlock additional options**, provide access to resources, stimulate investments and reduce costs – by e.g. facilitating access to offshore wind power to a landlocked country through interconnections and joint renewables projects. Given the multitude of existing interdependencies between the EU Member States - from interconnectedness of energy grids to the Single Market, such cooperation seems to be not only essential, but could also offer multiple synergies.

Apart from the aforementioned diversity of approaches – with different ministries in charge and different processes for formal adoption – there are wide discrepancies in tools and approaches used in the respective modelling efforts. Transferring the methods and processes used to model for and develop LTS has been identified as the most tangible first step, with policymakers calling for **more dialogue between countries** and more opportunities to exchange information.

Already, there are existing examples of successful cooperation between countries in this field. For instance, the UK 2050 Pathways Calculator – an energy and emissions model that allows even lay users to explore energy and emission pathway options the country, territory or region faces – is fully open source. In the UK, the tool has been used to strengthen the level of debate on climate and energy issues and allow stakeholders and citizens to explore options to reduce greenhouse gas emissions and help tackle climate change. To promote similar efforts abroad, the British government has been actively engaging with other governments to help them adapt and launch their own versions of the calculator (BEIS, 2017). For instance, the Czech Ministry of Environment has worked with colleagues in London to adapt the Calculator to Czech conditions, systems and resources landscape through consultations and debates. Apart from allowing users to directly engage with data and create their own scenarios, the calculator was used to create ten

possible emissions reductions scenarios and the options that they include, as a means of stirring a public debate. Tools based on the UK calculator were also published in Austria, Belgium and Ireland, in addition to a number of other countries around the world (BEIS, 2017).

B. Need for better integration between EU-level and national-level processes

Policymakers have also pointed to the role **EU institutions** could play **in facilitating a more coordinated approach** beyond implementation at national level and identified the need for **better information flow** between the Member States and the EU. This has several dimensions.

First of all, as the Union is currently in the process of preparing an EU-level Strategy for Long-Term Emissions reduction to replace the existing 2011 EU Low Carbon Economy Roadmap (European Commission, 2011) it is essential that this strategy considers and speaks to existing national-level developments. The development of the EU LTS is mandated by Article 14 of the Regulation on the Governance of the Energy Union. The legislation requires a first draft by March 2019, but at present a first Commission discussion paper is due to be published already ahead of COP24. While the regulation requires the Commission to take into account the draft national energy and climate plans (NECPs) – which lay down how the 2030 energy and climate targets will be met - it does not specifically require that the strategy considers the content of the existing national 2050 climate strategies (Council of the European Union, 2018). This leaves room for more effort to ensure consistency between the EU-level and national-level efforts, especially as the **EU LTS could play a crucial role in offering options that could not be included in strategies only considering national resources**. It has been recognised that the interaction of climate governance at national and EU levels will be critical for moving beyond the current levels of ambition (Rüdinger et al., 2018).

A challenge in designing the national LTS is that the Governance Regulation actually requires Member States to also draw up so-called integrated National Energy and Climate Plans (NECPs) in essentially the same time-frame. These NECPs have a ten-year horizon (2021-2030) and a somewhat different structure, content and purpose. The Governance Regulation requires the NECPs to be "consistent with the long-term strategies", and there is thus scope for but also a necessity to integrate the near and the long-term planning into a joint-up exercise. However, a number of factors (incl. responsibility lying with different Ministries) could make this integration difficult to achieve. **EU institutions could promote opportunities for harmonisation of data inputs and internal coordination mechanisms** to help Member States integrate the two processes.

Finally, the EU institutions (including supporting agencies such as the European Environment Agency or the Joint Research Centre) were identified as the ones that could also **facilitate information flow on methods, data and assumptions**, between the EU Member States. This is recognised in the Governance Regulation, which has assigned the European Commission with the task of supporting MS in their preparation of long-term strategies by providing information on the state of the underlying scientific knowledge and by providing opportunities for sharing knowledge and best practices (Council of the European Union, 2018).

C. The need to integrate multiple objectives into a crosscutting policy area

Reaching the deep emissions reductions needed to meet the obligations of Paris Agreement requires the involvement of all sectors of the economy but also breaking down sectoral silos and identifying synergetic

coupling strategies. Therefore, an important challenge identified by policymakers is the **holistic approach required to integrate considerations from multiple policy arenas** and sectors within this crosscutting policy area. This involves ensuring that the LTS is in line with the country's socioeconomic priorities and SDGs, and integrating it with other existing strategies (such as e.g. circular economy), or linking climate action to other environmental issues like air pollution, by combining processes and linking staff across ministries. Integrating other objectives into climate strategy also creates the opportunity to create a more enticing and inclusive political narrative that links climate action to economic development and a promise of a sustainable future (Duwe et. al., 2017). Crucially, good coordination and allocation of responsibilities across ministerial portfolios and policy action in all sectors, are essential to effectively manage the adoption and implementation of a whole-economy decarbonisation strategy (Rüdinger et al., 2018).

This approach is already reflected in a number of existing national strategies. The Estonian strategy requires the Government to present parliament with a report on considering the main principles of the climate policy in the preparation and implementation of cross-sectoral and sectoral strategies at least once in every four years (Riigikogu, 2017). The UK's Clean Growth Strategy contains detailed annex, which assigns responsibilities for implementing different aspects of the strategy to various government agencies and departments (HM Government, 2017). Lithuania's National Strategy for Climate Change Management Policy is meant to be jointly implemented by the ministries of Environment, Energy, Finance, Transport and Communications, Health, Education and Science, Foreign Affairs, Interior, Agriculture and municipal and other institutions (Seimas of the Republic of Lithuania, 2012).

Despite those efforts, more attention is required to ensure the LTS facilitate a holistic and comprehensive policy effort across sectors, as important coordination gaps remain. For instance, even within the domain of climate change policy, **most existing strategies do not explicitly take into account the severe climate impacts that are already locked in and are almost certain to occur** (anecdotally, this issue has come up in the review of the Portuguese strategy). In virtually all cases, **the adaptation to climate change is covered in a separate document**, usually developed by different departmental teams.

D. Planning for an uncertain future

The long-term planning process is made more difficult by the inherent uncertainty of future developments in various areas. This includes limitations to modelling real-world technological change, such as planning for technologies that do not exist yet or predicting the time lag between the technology's availability and its actual, wide deployment.

Future decisions will inevitably require facing difficult dilemmas, as demonstrated for example by the difference between the so-called "sunrise" and "sunset" policies. While it is relatively easier to garner political support for developments that create new jobs and stimulate growth – such as wide deployment of renewables – it is much more difficult to drive accompanying policies that require shutting down entire sectors – as is the case with coal. The fear of economic change and disruption is likely to water down ambitious policies, with some policymakers pointing to the fact that the national debates tend to stay on the defensive side.

However, insights from the work of the 2050 Pathways Platform indicate that rather than shying away from difficult topics, **policymakers stand to gain more from proactively creating a national debate** on just transition and the disruptive changes necessary to make the goals of Paris Agreement a reality. Only by conducting a meaningful assessment to understand what decarbonisation will actually mean in terms of

the required levels of change, and how those changes will affect specific communities, can countries launch a meaningful debate on how to take care of the households, workplaces, sectors and regions that will be affected by the transition – a debate necessary to create long-term climate strategies that offer a **feasible, inclusive and desirable visions to navigate the uncertain future.** The risks posed by uncertainty itself can be mitigated by ensuring the LTS comes with a forward-looking, adaptive governance framework which allows for adjusting specific pathways in line with new scientific evidence and technological developments, as well as a revision and progressive strengthening of the targets. Such an approach is demonstrated by e.g. the carbon budget approach, first introduced by the UK strategy, and now also applied in France, for example.

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