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THE POLITICS OF CLIMATE ROADMAPS

LESSONS FOR THE EU'S NEW LONG-TERM CLIMATE STRATEGY

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Countries across the world are developing long-term climate roadmaps to 2050 and beyond. These strategies are used as tools to understand emissions reductions pathways, identify infrastructure choices, shape investments, set climate targets and inform policymaking.

While they are often supported by economic and energy system modelling, long-term climate strategies must be seen as political rather than purely technical processes. Experience from "early movers" shows that getting the best value from roadmaps requires embedding them inside decision-making processes and institutions. This integration allows for a more informed debate about the politics of structural reform.

The European Commission is developing a new EU long-term greenhouse gas reduction strategy for publication later this year. EU member states are set to produce long-term strategies of their own by 2020. This paper outlines lessons to be learned about the value of climate roadmaps, the politics of doing them in practice, and what they mean for the EU's new long-term climate strategy.

When you hit a difficult problem, make it bigger

As has been often said in politics: when you hit an impossible problem, make it bigger. If you want to solve the difficult politics of the low carbon transition, then experience from the last decade suggests the most productive way is to embed the debate firmly inside governance systems in a way that makes all parts of society and the economy take responsibility and ownership.

Long term climate roadmaps are not new. The EU, Germany and the UK have had long term comprehensive roadmaps since the mid-2000s. In 2005 South Africa pioneered

an open stakeholder engagement process to develop climate change planning scenarios. China's 5 Year Economic Plans have long-been informed by longer term modelling of low carbon trajectories. The common experience across these roadmaps is that their success depends not only on the quality of the technical input and modelling conducted, but also on how the associated political and governance processes are run.

Shifting boundaries

Roadmaps and climate strategies can shift the boundaries of policy conversation.

Following a protracted process of target-setting and policymaking for the 2020 time horizon in the late 2000s, the European Commission's 'Roadmap to a Low Carbon Economy'[1] was published in 2011.

The Roadmap had several immediate impacts on EU climate policy-making. The macroeconomic analysis strengthened confidence in the viability of deep decarbonisation efforts and helped cement a broad consensus on direction of travel.[2] Multiple pathways to an 80% GHG reduction in 2050 were modelled and were all comparable in cost to the baseline.

The roadmap shifted the focus of climate policy discussions to domestic decarbonisation, in contrast to the then-popular notion that use of international carbon credits could avoid the need for deep emissions reductions within the EU. It confirmed that in a global pathway to 2 degrees, there is unlikely to be a guaranteed pool of cheap carbon credits for Europe to draw upon.

The roadmap also shifted time horizons. In contrast to the incremental emissions reductions needed to hit the 2020 targets, it illustrated that over the longer term deep decarbonisation is needed in all sectors. This longer-term perspective eventually filtered down to influence areas such as market design, innovation policy and infrastructure planning (though there is still further to go in making sure EU infrastructure plans are fully consistent with deep decarbonisation).

In attempt to build consensus, a rather conservative approach to the 2050 climate roadmap was taken. The roadmap only looked at the lowest end of the 80 to 95% emissions reduction target range associated with the 2 degrees temperature goal, and assumed only slow improvements in clean energy costs. Since the Roadmap was published, international climate objectives have been strengthened: in recognition of the damages and tipping point risks of even small amounts of warming, the Paris Agreement strengthened the temperature goal to 'well below 2 degrees' with an aim of 1.5^{o}c. Meanwhile, the costs of solar and wind generation and other clean technologies have already exceeded the cost reductions foreseen to 2050.

[1] Including: **Roadmap to a Low Carbon Economy**; **Energy Roadmap 2050**; **Transport 2050**

[2] The trajectory 20% in 2020, 40% in 2030, 60% in 2040 and 80% in 2050 was broadly shared except by Poland, who refused to endorse Council conclusions on the Roadmap. They have however signed up to legislation based on this trajectory.

Despite the changes in underlying assumptions, the outputs of the 2011 Roadmap have acquired a life of their own independent from their initial calculation. The Roadmap's milestone of 40% greenhouse gas emission reductions in 2030 was agreed as a political target in 2014 and has subsequently been embedded into the Effort Sharing Regulation and Emissions Trading Scheme, as well as influencing the targets on energy efficiency and renewables – even though it may no longer represent the most cost-effective pathway to 2030.

This suggests a role for the EU's new long-term climate strategy in shifting the boundaries of the policy conversation once again, including identifying pathways for Europe to reach net zero emissions, as well as beginning to open up the question of what happens after 2050.

Avoiding expensive mistakes

Long term roadmaps of how to meet climate change goals have a proven track record of helping countries avoid expensive mistakes. However, this has not been a straightforward or technical process in any country.

The UK Government began looking at long term climate and energy trajectories in 2002; driven as much by the energy security implications of declining domestic oil and gas production as by climate change. The UK use of long-term road maps was institutionalised by the Climate Change Act in 2008. This established an independent Commission to set a series of binding medium term "carbon budgets" to cost-effectively achieve the UK's 2050 goal.

An early recommendation of this process was the that a least cost approach required rapid decarbonisation of the power sector by 2030; as much of the aging and polluting UK power fleet had to retire in the early 2020's. Originally, companies planned to fill this gap by building a new generation of coal and gas power plants, but 2050 analysis showed that much of this investment would become "stranded assets" as the UK decarbonised.

Identifying this time inconsistency in market incentives led the government to ban any new coal power plants without CCS and further analysis showed that relying on the EU-wide carbon price to drive investment would result in too much gas investment and not enough zero carbon power.

The UK subsequently embarked on extensive Electricity Market Reforms to support the climate transition, establishing auctions for all new low carbon power capacity. This maintained investment and drove down renewable energy costs. This radical change in market structure was opposed by many as a major reversal of 1980s liberalisation and a shift towards intervention and state control. However, opponents of reform failed to propose alternatives that would reliably deliver a cost-effective trajectory to meet the UK's long-term carbon targets.

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Without a robust long-term roadmap showing the high cost of inaction, it is highly unlikely that the UK would have carried out such fundamental reforms to its electricity markets. The roadmap provided Ministers with the evidence needed to face down incumbent interests in the energy industry, and among regulators and academics invested in existing market structures.

Roadmaps don't have to be 'right' to be useful

Roadmaps can be useful even when they are subsequently proved "wrong" by events or technology. For example, all the least cost pathways analysed by the EU in the early 2000s had a large dependence on CCS in the power sector. The EU's Energy Roadmap 2050, published in 2011, foresaw CCS shares in power generation ranging from 19-34%.[3] The EU created a multi-billion Euro demonstration plan to make CCS commercially available before major investment decisions would be taken in the 2020s. All new coal power stations were also legally required to be "CCS ready".

Ultimately, the CCS demonstration programme failed to materialise. However, identifying the criticality of CCS galvanised a broader debate on the risks of "lock-in" to new fossil infrastructure. This debated resulted in a generation of planned coal plants being cancelled as governments and investors internalised future risks.

Using roadmaps to start conversations

These examples show that the most important aspect of long term climate roadmaps is not so much their detail, which will constantly change as technology and markets evolve, but that they open-up a different conversation about long term development choices. In most countries there is no venue to talk about long term choices. Infrastructure still tends to be built based on cost-benefit analysis of incremental development rather than through a more systemic analysis.

The implications of long-term roadmaps often do not immediately emerge from the official analysis but through open – and often robust - public debate, frequently supported by additional independent analysis.

For example, one of the big impacts of the EU roadmap has been increased targets for electricity grid interconnection. This was not initially a high-profile result in the official roadmap. It became a focus for advocacy from some (under-connected) Member States in partnership with industry, think tanks and NGOs who commissioned additional research showing the EU's 2050 trajectories were not credible or affordable without far stronger grid connections.[4]

[3] European Commission (2011) **Energy Roadmap 2050**

[4] European Climate Foundation et al (2010) **Roadmap 2050: a practical guide to a prosperous, low-carbon Europe**

An abundance of roadmaps

Since the EU's last 2050 Roadmap was published in 2011, there has been a plethora of new 2050 strategies and plans published by cities and regions, companies, industry associations and civil society, as well as member states.

These roadmaps give a wealth of data, experience, ideas and visions to draw upon on. They also mean that the EU and national governments will be able to count on a diverse set of engaged and informed stakeholders as they develop their long-term strategies.

However, existing roadmaps will invariably offer only a partial view. An industrial roadmap focusing on a single sector, for example, may neglect opportunities from demand management or circular economy approaches.

Similarly, different roadmaps were built on different assumptions and pathways, not all of which will be compatible. For example, electricity industry and gas industry roadmaps both show it's possible to get to net zero emissions for their sectors by 2050 but offer very different visions for what a zero carbon Europe looks like.

The role of a national or EU long-term strategy is not to choose a single pathway, but rather to make transparent the choices that need to be made.

The new EU long-term roadmap faces an added challenge: it must not only integrate perspectives from non-state actors but also align with the long-term climate strategies produced by EU member states. The member state strategies and plans produced so far have very different time horizons, areas of focus and underlying assumptions. New long-term climate plans to be produced by member states should follow a common template, but nevertheless are unlikely to magically add up to exactly the same pathway modelled at EU level.

Decision-makers should feel comfortable with this diversity. The value of developing roadmaps at different levels of governance is in exposing underlying assumptions and enabling better informed conversations. Alignment on direction of travel should emerge over time as subsequent iterations are developed, rather than being a strict requirement from the start.

Embedding long-term strategies in governance systems

It is not just important to design the process by which stakeholders input into roadmap development, which is vital for their credibility and legitimacy, but also to carefully design how the results of the roadmap will be used inside decision making processes. In other words, how long-term climate roadmaps are embedded inside national and European governance systems.

There are many ways that roadmap processes and results can be embedded inside executive, legislative, regulatory, sub-national and stakeholder governance systems. Germany and South Africa have both used different models of stakeholder engagement around roadmaps which were advisory to the executive. The UK started with a roadmap process focused on "joining up" executive ministries, but has since moved to an independent process founded in statute. France has used more formal negotiated multi-stakeholder agreements to define their long-term energy transition. The Netherlands have probably the most institutionalised stakeholders participation with a mandatory participation of key groups in order to reach a national consensus.[5]

Each of these approaches to governance has different strengths and weaknesses in terms of shaping debates and shifting the politics of transition. Every country has different political and constitutional dynamics which will determine the best way to embed long-term road maps, but some general lessons can be drawn from existing experience.

The UK's first long-term climate road map was produced by the Prime Minister's Strategy Unit. However, the Climate Change Department successfully argued that it should develop subsequent roadmaps. However, as a relatively weak Ministry it was unable to make other departments follow its analysis. As debates over the roadmap were held inside the Executive there was little public or Parliamentary scrutiny and a lack of pressure to force consistent action across government. The subsequent move to embedding the UK's long-term plan in an independent Committee on Climate Change supported by the Climate Change Act has proven far more effective at driving a "joined up government" by shaping public debates with Parliament and stakeholders.

The South African Long-Term Mitigation Strategy (LTMS) Process took a different approach, convening a wide variety of government and non-government stakeholders in a process facilitated by external thinktanks. This was considered a success in terms of engagement but there was a lack of clarity in how the resulting "scenarios" would be used. When the South African government used one of the scenarios as its national submission to the Copenhagen climate talks many industrial stakeholders believed they had been involved under false pretences. This soured relations and made industry more cautious in engaging in future in policy development.

The South African government then moved to an executive driven process of five-yearly climate and energy plans; developed with limited external consultation. This reflects a reluctance to engage stakeholders on more difficult political issues such as coal mining and energy intensive industries but has left investors without clear guidance on the energy system's trajectory.

[5] Jan Erik Janssen (2018) **Towards a Climate and Energy Plan: will the Dutch Polder model succeed?**

More than paper

Countries often hope that just publishing a long-term plan will facilitate more and cheaper investment. However, investors are suspicious of "paper plans" and more interested in any restrictions on retrospective regulation or damaging policy swings. Investors will look carefully at how plans will - or will not - shape the development of detailed policy and regulation. Is consistency with plans mandatory? Do market and infrastructure regulators have to "take them into account" when making decisions? Under what conditions can deviation from long term plans be justified?

Providing investors with higher transparency and "certainty" will limit a country's ability to flexibly respond to changing circumstances but can also lower financing costs—vital when building a capital-intensive clean energy system. Both flexibility and certainty have costs and the art is embedding long term plans in a way that balances these tensions. Though there are no hard and fast rules, experience suggests that 5-year revisions of detailed plans that go out 10-15 years inside a broad 30-40-year framework is a reasonable compromise given technology and investment lifecycles.

The EU failed to embed its 2050 roadmaps as legal policy due to objections from some Member States. This has led to higher costs as there is no binding and consistent long-term benchmark for EU energy decision making. For example, gas import infrastructure has been massively expanded - often backed by public funding - while EU gas demand has been dropping due to climate policies. However, without binding EU level guidance on future gas demand, public authorities and banks have found it hard to object to large scale projects which will struggle to earn a return if the EU meets its climate goals.

Managing difficult transition politics

Looking forward, governments are beginning to explicitly use long term road maps to address some of the most politically difficult areas in the climate transition. The EU has said it will produce a "social transition" roadmap as part of its next 2050 plan. This will aim to anticipate disruptive social impacts from the transition and put policies in place to manage them. A similar approach has been taken in the latest German 2050 plan which mandates a Commission for 'Growth, Structural Change and Regional Development' to handle transitions in sensitive sectors such as coal and lignite.

When done in the right way long term roadmaps change the choices – and shape the politics – in a country. Long term strategies can provide a "space" where new solutions which cut across traditional boundaries can emerge, and where the value of decisions can be tested across long time scales, and where groups often excluded from decision making can raise neglected issues.

Conclusions: the value of open processes

Achieving deep decarbonisation consistent with the Paris Agreement goal of keeping global warming well below 2c and aiming for 1.5c requires change in every sector of the economy.

Experience shows that be effective in shaping good decisions the design of roadmap governance must be done with an eye to the political dynamics necessary to drive real change, not just the technical requirements of policymaking or procedures for stakeholder engagement.

If embedded in the right way, long-term road maps can open-up difficult issues before they become toxic, allowing solutions to be developed and supported more widely. Constructing a broader conversation which brings in new voices also reduces the power of incumbent interests to seek rents, delay progress or move money into sub-optimal investments.

More independent approaches involving the legislature or commissions can give more confidence to investors in a country's decarbonisation trajectory. Clarity on how regulators and other authorities must use roadmaps can ensure consistency and least cost across policy areas. This lowers costs and helps avoid wasteful investment in stranded assets.

For governments, running a technical roadmap process with limited consultation can appear attractive as it maximises direct control and allows difficult questions to be avoided. However, this is an illusion of control if the government is serious about shifting to a low carbon path. Decarbonisation requires active alignment between all levels of the public sector, investors, companies and consumers; this is impossible if they are excluded from the process of developing and debating long term plans.

For the EU and national governments, the new long-term strategies offer a useful tool for enabling a managed transition. As much attention is needed on how these strategies are used as the assumptions and analytics that go into them.

As a result, the new long-term climate strategies currently under development in the EU and member states should be seen as the beginning of a process of political and institutional change, rather than as stand-alone pieces of technical analysis.

Embedding long-term road maps inside broader and more independent governance processes will make the process more messy, but their results more impactful, as they will help shape and advance the politics of transition.

Further reading on 2050 strategies

Ecologic: **"Paris compatible" governance: long-term policy frameworks to drive transformational change.**

WWF: **Maximiser: Strategies for a low carbon EU by 2050**

2050 Pathways Platform

World Resources Institute site on **Long Term Climate Strategies**

E3G **Input paper for the OECD: Key political economy and entanglement issues of the low carbon transition in G20 countries**

An earlier version of this paper was published on the **WRI Long Term Climate Strategies** site. Many of the case studies are based on unpublished research carried out by Camilla Born, Senior Policy Advisor at E3G.

About E3G

E3G is an independent climate change think tank operating to accelerate the global transition to a low carbon economy. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2017, E3G was ranked the fifth most influential environmental think tank worldwide.

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