



# What makes climate action and innovation transformative?

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To avoid re-labelling all climate action as transformative, we need to be honest about where change is needed and what transformation looks like in practice.

This Insight acts as a series overview, offering emerging lessons and new directions for transformative climate action, as well as reflections from within EIT Climate-KIC.

## KEY MESSAGES

- Transforming systems requires deliberate strategies to address and break down the embedded political structures and social norms that are supported by resources, institutions and established networks to maintain the status quo.
- Governments, communities, intermediaries, youth groups and faith organisations all have roles to play in creating change within a system, with unique levers of change available to each.
- Innovation can help to de-risk transformative ideas, by creating alternative imagined futures within which new ideas and technologies can gain traction.
- Systems to track change need to be open to unexpected outcomes and pathways, look for spillovers between systems, and allow for outcomes over long timeframes. Traditional monitoring and evaluation tools do not capture these dimensions well and risk stalling transformative work.

## Introduction

The Intergovernmental Panel on Climate Change (IPCC) has called for “rapid, far-reaching and unprecedented changes in all aspects of society” to respond to impacts we have already locked in and to prevent runaway climate change. Despite these calls, current pledges fall short of what is needed to keep heating well below 2°C.

Given the urgent timelines for real-world impacts outlined in the IPCC’s 2018 special report, climate policy, programming and finance leaders are increasingly interested in how to generate transformational change, and what it looks like in practice.

Experience with the coronavirus pandemic shows that rapid transformative change is possible when there is collective agreement on the necessity of such change or when business as usual is suddenly impossible. But we are still some way from understanding what could support transformative change across social and political systems before a crisis hits, and how we might catalyse change through politics, policy, governance, technology or behaviours to deliberately and urgently instigate these shifts in practice. We need to act on this information now and start gathering insights to support and strengthen our efforts to prepare for climate change.

This Insight series brings together avenues of experimentation and debate that EIT Climate-KIC has been exploring in our work to support our own thinking and practice. While these are not the only approaches, they do offer different perspectives to the debate on this issue. The series covers:

- Cross-cutting lessons from the series and our own reflections from experience within EIT Climate-KIC (Insight 5.1)
- Learning from measuring transformation in international climate programmes (Insight 5.2)
- The political economy of transformative processes and the role of governments (Insight 5.3)
- The role of intermediaries such as EIT Climate-KIC in orchestrating transformative processes (Insight 5.4)
- The role of social values in underpinning decisions (Insight 5.5).<sup>1</sup>

## What does transformation look like?

Transformation is widely used as a stated ambition, policy approach and description of the level of change required. The danger of this wide use of the term is that it becomes co-opted. The term has been used to describe business-as-usual and other approaches that do not address the root causes of climate vulnerability.

Not all changes need to be transformative; in some cases, incremental shifts will work fine. Calling a change transformative when it does not go far enough in terms of scale or urgency is at best misleading and at worst, harmful. Working for transformation is risky and will lead to failures along the way. If everyone claims to have achieved the transformative action they had hoped for, we are doing something wrong.

Ideas from transitions theory (Insight 5.4) highlight that reaching transformative change might not initially look like a step change in approach. Rather, it can look like stretching every decision towards a more ambitious direction until something shifts or gives in the system and regime change can be provoked or supported. This shift cannot necessarily be predicted or foreseen.

Our experience in using innovation for transformative change at EIT Climate-KIC has led us to use a participatory method to define with stakeholders the system changes required.<sup>2</sup> We then go on to explore what significant actions are needed to reach that change and therefore address the underlying causes of the problem.

Using this approach, we do not know where the leverage points for transformative change will be until we start unpicking the system and its dynamics. We may find that they are not where we expect them to be. Achieving change is not always the result of careful planning and models of change; it can sometimes be the result of happy coincidences or unintended consequences. We must accept this uncertainty in our ways of working and around what will lead to transformative outcomes.

## Can we support transformation from existing systems?

Addressing climate change will not only require new technologies, markets and behaviours; we will also need to dismantle some systems that lock in high-carbon trajectories. Insights 5.3, 5.4 and 5.5—on the political economy, intermediaries and the role of social norms—all highlight that changing high-carbon systems and the

resources, networks and power that sustain them is a key part of realising transformation to address climate change. This is in a context where fossil fuel political giving in the USA outdoes renewables 13-to-one<sup>3</sup> and state elites in Kenya do not allow changes that challenge their position and disrupt the clientelist politics from which they profit.<sup>4</sup>

Breaking down systems or moving power away from some networks to others—rather than just adding new approaches—is not something that policy and programming around transformation have considered well so far. This is understandable, as these political dimensions create winners and losers. As such, it is difficult to gain the political support and alignment needed to provide the ownership climate change action needs from national stakeholders.

But to reach transformation on the scale and urgency needed, we need to create more explicit plans and strategies to counter the networks, resources and actors that support the current regime and act to block change (see Insight 5.3 for how this works in practice). Such an approach must be attentive to power dynamics within and between systems.

Merely working with the incumbent power base to identify levers of change in systems will not generate the insights or range of ideas needed to genuinely challenge that incumbency. As we see in Insight 5.3 and the working paper it is based on, for example, biofuels and fracking emerged and endured as solutions because they aligned with existing networks and industries and so gained traction despite doing little to challenge fossil fuel incumbency or reduce emissions.<sup>5</sup>

Social norms and values are another oft-overlooked dimension of change that underpins any given system (Insight 5.5). Path dependence and availability bias describe unspoken, unexamined normative judgements and assumptions that can limit the range of possible options. Norms of practicality or pragmatism can reinforce the status quo or business-as-usual incumbency. For example, we may not stop to ask ourselves and others, 'Is it possible?', before we settle into shared assumptions of impossibility, in relation to new ways of regulating, behaving and governing.

Norms and values underpin decisions at multiple scales. This includes those made by senior decision makers, public choices over what policy and economic approaches are acceptable, and individual behaviour change.

Among senior decision makers in government, business and industry, norms associated with high emissions

include prioritising economic growth over environmental sustainability, using frameworks that cannot incorporate large risks associated with non-linear changes, externalising environmental and climate change costs, and favouring market mechanisms and technological approaches to deliver emissions reductions. Among members of the public, the 'flight shame' phenomenon has been credited with shifts in personal behaviour by changing norms around the acceptability of frequent flying among certain groups, reducing the number of flights taken.

Another value underpinning decisions is around short-termism and assessing the costs and benefits of choices people make. We have identified this as one of the critical barriers to ensuring adequate investment in sustainability and climate action. Together with innovators across the EIT Climate-KIC community, we are embarking on designing interventions that will promote long-termism across society and across all the above-mentioned topics. These should catalyse systems change and have the impact required to meet the broad and complex challenges posed by climate change.<sup>6</sup>

## What is the role of innovation and experimentation in transformation?

Some transformative ideas need de-risking. Innovators and entrepreneurs also need space to imagine what is possible and how innovations can support different futures. By convening innovators and entrepreneurs in a safe space and exploring possible futures for innovation, we can avoid higher material and opportunity costs and mistakes. This approach means we make the mistakes in our imaginations during a collaborative design phase rather than further down the road once people have committed time and money.

At EIT Climate-KIC, we collectively imagine a variety of pivots for technology with our partners. We then use funding to overcome the financial barrier of commercialising the pivots. For example, we supported the development of a platform where you can input any asset or archetype in the world by location and look at the likely effect of 100 years of climate change on that asset or archetype.<sup>7</sup>

By identifying who is responsible for keeping continuity of transport, power and other systems rather than just who owns the asset, this technology pinpoints the true cost of risk and risk ownership. In other words, it identifies all the related pieces that constitute resilience or could be a source of fragility.

Its technical capability has several possible applications. By exploring these potential pivots collectively, we were able to consider impact scenarios. Ultimately, by choosing the climate bond application and thus overcoming the main stumbling block of assurance for scaling green and resilience bonds, the innovation product contributed to developing the world's first resilience bond, issued by the European Bank of Reconstruction and Development in 2019.<sup>8</sup>

Innovation can also bring together new groups of actors with new technologies and approaches to address a blockage or gap within a system that is preventing the transformative shifts needed. EIT Climate-KIC's role as an intermediary is to bring together and orchestrate the configuration of actors needed to support innovation for transformation.

We have learnt that bringing in actors such as new social movements, edge communities, arts and cultural bodies and marketing agencies can re-open debates from first principles, question long-held assumptions and provoke fresh analysis of what needs to change. For example, online community Edgeryders worked with science fiction writers to reimagine what economic futures could look like,<sup>9</sup> while in Madrid, an artist is working with local people to find ways to bring eco-fictions to life in an artistic installation within their community.<sup>10</sup>

These conversations do not jump to solutions. Instead, they vision the change we need to see and create space for alternative pathways and approaches. Then, we orchestrate innovation experiments to explore what might work to move towards the collective vision.

Work within EIT Climate-KIC's climate risk information portfolio<sup>11</sup> established that convening spaces for interaction allows actors to move beyond competition to work more collaboratively. Testing and delivering related innovations in different projects, with various starting points, market targets and operational contexts provides a wealth of potential learning. Critically, it creates a collaborative forum for actors, who may otherwise see each other as competitors.

It is vital that actors work together within the climate innovation ecosystem, as society has neither the time nor resources to indulge a siloed approach to the climate emergency. The willingness to challenge and be challenged—on both assumptions and approach—is now well-established within EIT Climate-KIC portfolios, and this is a crucial part of moving change past the status quo.

Such an approach allows information to flow between innovations and actors. Having synergy in the portfolio enables a cascading impact and reach, as project initiatives and partners nudge different parts of the information, behavioural and decision-making chain.

For example, partners recently discovered that using the technical outputs of one innovation project as a modelling input into another can increase robustness in circumstances where significant topographical relief is key to flooding risk. Despite differences in stakeholder type and geographical context, we found that innovative actors face surprisingly similar challenges around stakeholder engagement in co-design, and market maturity in uptake.

## Funding and tracking transformation

With many programmes being asked to report or learn about transformative impact from a funder, the information collected has a propensity to report positive findings and lean towards optimism on the chance of work being transformative (see Insight 5.2). Innovative ways of working will require innovative funding mechanisms and a willingness to challenge the traditional accountability frameworks that favour safe, predictable projects.

Transformative change may be risky and uncertain, and the need to pre-define and deliver predictable results within a given timeframe can act against such transformative change. Transformation is often only realised in hindsight, which makes it difficult to hold as a compass setting. For example, EIT Climate-KICs work to integrate climate risk into fund and bond ratings with partners Carbon Disclosure Project and Beyond Ratings paved the way for a proliferation of ratings and standards that may not support the transformative change we hoped for.

Several assumptions need to be questioned and surfaced around evaluation, the power structures and incentives that enable or constrain change, and the roles measuring or monitoring play in enabling and constraining transformation.

At EIT Climate-KIC, we use a sense-making approach that seeks to identify patterns in our emerging findings by putting a range of inputs and forms of data into a socialised learning process. This acts as a reflexive mechanism for those engaged in the work. It is also a way of consolidating findings and using them to make a strategic argument for the changes required in a system's surrounding components to increase the likelihood of transformative change.



## Conclusions

Transformation has become a widespread discourse and policy ambition for those working on the climate crisis. While supporting these ambitions and good intentions, we must also take a critical perspective to ask if these efforts are creating the conditions and/or have the potential to achieve the necessary shifts to reach change on the scale and urgency required.

We need to enable and support high-risk approaches that may go against current institutional practices and challenge networks of organisations and individuals invested in the status quo. This will require innovative ways of working and new groupings of people to move past the social norms, values and power structures that underpin everyday socioeconomic policy choices and routines.

We must accept that the pathway to transforming a system is not linear; nor does it lend itself to conventional policy and programming tools and norms that require a clear objective and pathway to achieve change. And we need to put this understanding at the heart of our work. Failing to do so will risk co-opting a transformation discourse into our existing norms and values and missing the small window of opportunity we have left to halt runaway climate change.



## Endnotes

1. These Insights are summary briefings of longer working papers to be published by EIT Climate-KIC.
2. See, for example, our work with 15 cities across Europe. Osdoba, O. and Homan, J. (2019) 100 climate-neutral cities by 2030: A deep demonstration of rapid urban transformation. [uki.climate-kic.org/wp-content/uploads/sites/3/2019/06/190627\\_J721-CKIC-InnovationInsights-7.pdf](http://uki.climate-kic.org/wp-content/uploads/sites/3/2019/06/190627_J721-CKIC-InnovationInsights-7.pdf)
3. Kirk, K. (2020) Fossil Fuel Political Giving Outdistances Renewables 3 to One. [yaleclimateconnections.org/2020/01/fossil-fuel-political-giving-outdistances-renewables-13-to-one/](http://yaleclimateconnections.org/2020/01/fossil-fuel-political-giving-outdistances-renewables-13-to-one/)
4. Newell, P. and Phillips, J. (2016) 'Neoliberal energy transitions in the South: Kenyan experiences.' *Geoforum* 74: 39–48.
5. Newell, P. and Martin, A. (2020), The role of the state in the politics of disruption and acceleration, Climate-KIC working paper, London. [climate-kic.org/insights](http://climate-kic.org/insights)
6. Calnan, M. and Kim, R. (2020) Exploring Frontiers in Sustainability: Bringing Futures Literacy to Financial Services in Ireland and France. [climate-kic.org/wp-content/uploads/2020/04/Article-Exploring-Frontiers-in-Sustainability-042020.pdf](http://climate-kic.org/wp-content/uploads/2020/04/Article-Exploring-Frontiers-in-Sustainability-042020.pdf)
7. [easyXDI.com](http://easyXDI.com)
8. Bennett, V. (2019) World's first dedicated climate resilience bond, for US\$700m, is issued by ERBD. [ebrd.com/news/2019/worlds-first-dedicated-climate-resilience-bond-for-us-700m-is-issued-by-ebrd.html](http://ebrd.com/news/2019/worlds-first-dedicated-climate-resilience-bond-for-us-700m-is-issued-by-ebrd.html)
9. [climate-kic.org/events/sci-fi-economics-lab/](http://climate-kic.org/events/sci-fi-economics-lab/)
10. [climate-kic.org/community/madrid-a-city-turning-eco-fictions-into-eco-futures-through-systems-innovation/](http://climate-kic.org/community/madrid-a-city-turning-eco-fictions-into-eco-futures-through-systems-innovation/)
11. [climate-kic.org/projects/cri/](http://climate-kic.org/projects/cri/)

*Climate Innovation Insights Series 5* investigates the role of innovation in achieving transformational change in our societies. Aimed at policymakers and practitioners, it provides fresh perspectives and early lessons on how to generate genuinely transformative change, and what it looks like in practice. See the full collection of *Climate Innovation Insights* at [climate-kic.org/insights](http://climate-kic.org/insights).

### About

EIT Climate-KIC is Europe's largest public-private partnership addressing climate change through systems innovation to accelerate transition to a resilient, zero-carbon economy.

Our growing collection of *Climate Innovation Insights* offers a platform for reflections and lessons from our own work and from renowned climate innovation experts in our network. Themed series provide a mix of independent opinion pieces, reflection on best practices, case studies and success stories, and different methodological approaches to achieving systemic change for a 1.5°C world.

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