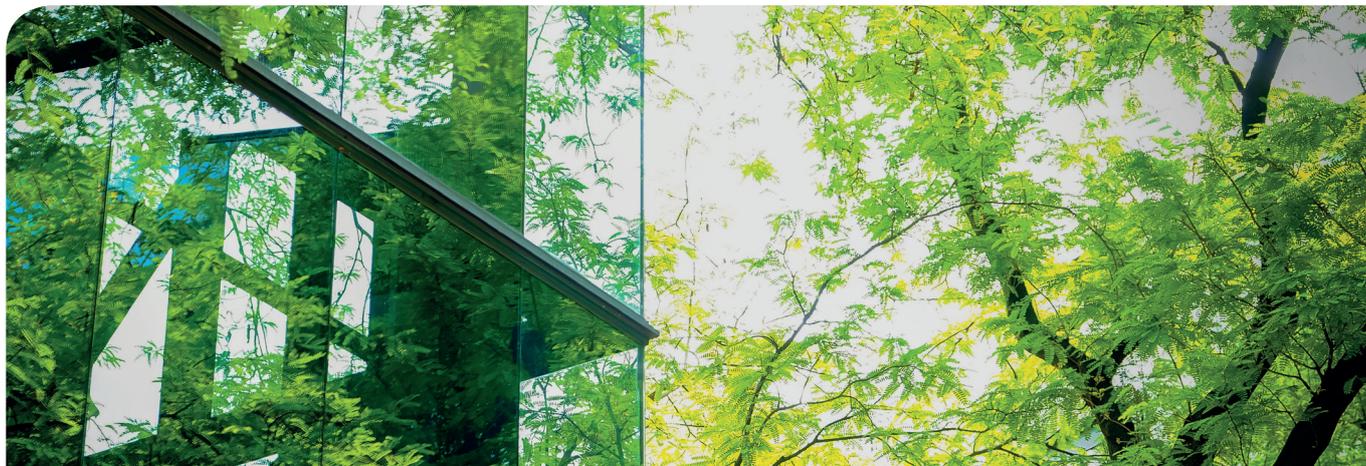


*This special series of EIT Climate-KIC Climate Innovation Insights captures key arguments, presentations and examples of our work that will be shared at various events during the first ever London Climate Action Week.*



# Transformation Capital: A new investment logic for catalysing systems change

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- The IPCC is calling for the rapid and unprecedented transformation of energy, land, urban, infrastructure, and industrial systems. Current capital markets—including sustainable finance approaches—will not be able to fuel such transformation at the pace and scale required.
- We need a new investment logic for catalysing the transformation of socio-technical systems such as national economies, industrial supply chains, regional transportation systems, and urban built environments. Transformation Capital is EIT Climate-KIC's initiative to develop such a logic.
- Transformation Capital differs from other sustainable finance initiatives—e.g. ESG, TBL, SRI, and impact investing—in its strategic intent and in the methodologies, capabilities, and decision-making frameworks it calls into service to meet its transformation agenda.
- Central concepts include sensitive intervention points (SIPs), dynamic asset allocation, strategic blending, innovative public-private investment partnerships, transition dynamics and indicators, and transformative return on investment (tROI).
- Truly transformative capital is best deployed in alignment with a broader systems innovation portfolio that engages non-investable levers of change such as policy and regulatory frameworks, social norms and behaviours, skills, citizen participation models, and collective narratives.

## A world in peril

To safeguard human civilization as we know it, the world requires rapid and unprecedented transformations not just in energy but in land, urban, infrastructure and industrial systems [1]. The way money flows and accumulates through these different parts of our economy

will determine whether we can reduce greenhouse gas emissions and become climate-resilient in line with the Paris Agreement.

Yet today's capital markets are ill-suited to fuelling these real-economy transformations. This is also true for investment approaches branded as "sustainable finance" such as ESG, TBL, SRI or impact investing. Given how little



time we have to reverse our emissions trajectory, there is now an urgent need to rethink the way we will deploy capital over the next decade. We need an investment logic that accelerates the transformation of socio-technical systems such as national economies, industrial supply chains, regional transportation systems, and urban built environments; a new logic that deploys capital with a different intent and mindset and with different methodologies, structures, capabilities, and decision-making frameworks. EIT Climate-KIC is developing this new investment logic under the banner of Transformation Capital, and we are looking for partners to design, test, and scale it.

## Why today's capital markets fail to be transformative

Our financial industry operates under axioms that limit its ability to be transformative. One such axiom is that everything of value must be measurable in monetary terms. Capital markets cannot relate to—or engage with—sources of value outside the narrow definition of money.

This affects how risk and return are conceptualised in financial mathematics. Risk is defined as the quantifiable chance of an outcome—the *known* unknowns. Financial markets thus have no ability to consider and mitigate fundamental uncertainty—non-quantifiable chance, or the *unknown* unknowns—including tipping points and non-linearities. Nor can they account for systemic risks

such as the vulnerability of institutions and other social constructs to the radical impacts of wicked problems such as climate change.

Similar problems arise through the conceptualisation of return, generally defined as the change in the value of an investment over time. Based on this definition, monetary stock (investment) and flow (change) relate to each other, so investors cannot recognise—let alone appropriate—any value their investments generate outside of this self-referential frame of reference, including positive externalities.

A second axiom is that the future can be predicted, when in fact the world behaves like a complex adaptive system and is thus inherently unpredictable [2]. The implication is that investors rely on probabilistic models to forecast the evolution of the economy at large and of individual assets. Once committed to an investment thesis, investors often lock themselves into a self-created path dependency with little capacity to respond to whatever emerges in the system in which they hold exposure.

To uphold its axioms and ensure conformity with its mathematics, the financial industry embraces and enforces a set of idiosyncratic structures and practices. Finance professionals are educated and socialised through homogeneous courses offered by universities (e.g. business schools) and professional education providers (e.g. the CFA Institute). Knowledge is organised—and decisions are taken—within paradigms that take the form of investment theses, selection approaches (active vs. passive), financial instruments (stocks, bonds, derivatives), asset classes (equity, debt, real estate), and investment horizons (short-term, long-term). Many of the industry's recruitment practices are geared toward maximising cultural and educational fit, which drives conformism and tribalism. Its incentive systems are biased toward short-term profits, which double as determinants of self-worth and social status.

Together, these axiomatic, mathematical, and structural idiosyncrasies make financial markets rigid and strip them of the capacity to adapt and be responsive. In fact, they create a dependency on the status quo—systemic stability is beneficial, systemic volatility is detrimental. This status quo dependency is so large that it is self-perpetuating. Capital markets prefer assets that conform to its axioms, mathematics, and structures because anything else is not investable. And herein lies the problem: If capital markets depend on—and indeed nurture—the perpetuation of the status quo, they are unlikely to fuel the type of profound transitions the world needs to cope with the gravest challenges of the 21st century.

## “Sustainable finance” will do too little, too late

Under the banner of “sustainable finance”, a massive global effort is underway to correct for these shortcomings. Its purpose is to develop the building blocks for a new steady-state orthodoxy, to shape the conditions for financial capital to flow to more sustainable places.

These are important and necessary steps. But they won't produce tangible outcomes fast enough.

Not only does it take a long time for structural changes to affect monetary flows in significant ways—just remember that, 20 years after the launch of the Dow Jones Sustainability Index in 1999, sustainable investing is still far from being mainstream—but many actions undertaken in the name of “sustainable finance” do not alter the course of the real economy, which is where emissions occur and resilience is built. Consider an investor shifting a global stock portfolio into the MSCI World ESG Universal Index, which includes amongst its top 10 holdings stocks of Microsoft, Pepsico, Amazon, Intel, and Facebook—hardly the companies that will prevent dangerous global warming. The same problem applies to efforts focused on divestment—while laudable in intent, selling your coal company shares to someone else does little to prevent new mining operations to start up.

Further, most sustainable finance efforts provide no guidance to decision-makers in the real economy—such as corporate executives, national and regional government officials, and employees at public sector financial institutions—on where and how to invest capital for transformative effect. Efforts focus on moving highly aggregated indicators—such as growing the size of the green bond market—but not on how to discern from the myriad of investment propositions a green bond holder must choose from.

## Transformation Capital: different intent, new spirit

What distinguishes Transformation Capital as an investment logic from other sustainable finance approaches is its strategic intent. The goal is not to reform capital markets toward a new long-term common sense or to influence financial flows at aggregate levels. Instead, Transformation Capital is mission-driven and intends to kick or shift human (socio-technical) systems in specific directions.

Implied in this intent is the necessity to articulate a transformation agenda. What does a national government want its economy to look like in the future? How shall a regional transportation system operate? What is a

corporation's vision for a more sustainable, inclusive, and resilient supply chain? Problem owners must take a position on the systems outcomes they are working toward and make a resource commitment to enable such transformation.

Investing for transformative effects means that investors need to re-imagine the spirit in which capital is deployed. They must choose collaboration over competition and form consortia with a common transformative agenda. They must rethink how risks and rewards are shared across a wider set of interventions, where some are investable and others are not, and between public and private actors. They must select specific investments based not on their individual merits but on the aggregate value they can generate at the systems level—which will sometime require innovative public-private investment partnerships [3] and, in the long-term, more progressive financial mathematics.

Investors must also acknowledge that societies, politics, and economies are complex adaptive systems with self-organising dynamics, feedback loops, and non-deterministic and non-linear behaviour. So they must de-emphasise categorisation and specialisation and instead embrace porosity, blurriness, and paradox. And they must embrace structures that promote diversity, multi-disciplinarity, and norms and incentive systems geared for long-term sustainability.

Bringing Transformation Capital to life does not mean overthrowing capitalism or revolutionising the monetary system. While it is evident that today's capitalism is unsustainable, much can be achieved by engaging capital on the basis of its current needs and interests—by simply deploying it in a smarter way and on a bigger playing field.

## From investment logic to investment programme

Transformation Capital is best deployed in the context of a broader systems intervention strategy that also engages non-investable levers of change: policy and regulatory frameworks, social norms and behaviours, skills and capabilities, citizen participation models, and identities and narratives of communities. Being nestled within a broader systems innovation portfolio de-risks the investment proposition while allowing investors to engage the self-transforming properties of adaptive systems in service of their transformative agenda.

Investing with transformative intent requires new capabilities that draw from a broad range of disciplines, including:

- Defining the boundaries of a (socio-technical) system and characterising the nodes and relationships within that system—as a hypothesis and not a statement of fact
- Conjecturing transition pathways and transformation strategies
- Identifying and engaging Sensitive Intervention Points (SIPs)—those places in a system where a relatively small investment can trigger a larger change that becomes irreversible, and where non-linear feedback effects act as amplifiers [4];
- Convening and orchestrating investor consortia with a common transformative intent, often in innovative forms of private-public investment partnerships that thrive on a fair distribution of risk and return;
- Designing a portfolio of financial instruments—from private and public actors—for directional synergy and complementarity (strategic blending), whilst leveraging public funding through the crowding-in of private capital;
- Advising public sector officials on how to align financial policies and regulations, fiscal policy levers, and information instruments to create supporting conditions for sustainable financial flows in the long-term [5];
- Right-sizing an investment portfolio commensurate with the challenge and allocating money to individual investment propositions using systems-level sense-making and decision-making frameworks [6];
- Measuring the effects of the investments on the transition dynamics within the system [7], spread over time and in response to what emerges in the system, and quantify the transformational return on investment (tROI).

## Call to action

Transformation Capital is a bold and ambitious proposition. We need sharp systems thinkers, experienced innovation practitioners, courageous investors, determined public sector officials, smart financial services professionals, and creative voices to bring it to life. So if you are keen to develop an investment logic capable of addressing the most pressing and tangible problems of our time, we want to hear from you.

## Endnotes

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3. cf. Mazzucato, M. (Editor) and Penna, C.C.R. (Editor) (2015): Mission-Oriented Finance for Innovation: New Ideas for Investment-Led Growth. Policy Network. 1st edition.
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5. cf. Whitley, S. et al. (2018): Making finance consistent with climate goals. Insights for operationalising Article 2.1c of the UNFCCC Paris Agreement. Published by ODI, WRI, RMI, and E3G.
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7. cf. Schot, J. et al. (2019): Transforming Experimentation: Experimental Policy Engagements and Their Transformative Outcomes. Published by University of Sussex - Business School, Transformative Innovation Policy Consortium (TIPC), University of Utrecht - Centre for Global Challenges.

### About

EIT Climate-KIC is Europe's largest knowledge and innovation community focused on the rapid, broad-based systems transitions we now need to build prosperous, resilient, net zero-carbon societies in time.

Across most industries in Europe, the 'easier stuff' on the path to net-zero has already been done, mostly through cleaner energy supply and efficiency. What lies ahead is unprecedented and more difficult: structural change in social, economic and financial systems; fundamental transformations of city-systems, industry and land-use. New concepts of value and relationship. EIT Climate-KIC is building portfolios of co-ordinated innovations that work together to address these 'systems level' challenges.

We invite new partners and funders to help shape and scale these portfolios for large-scale climate impacts.

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