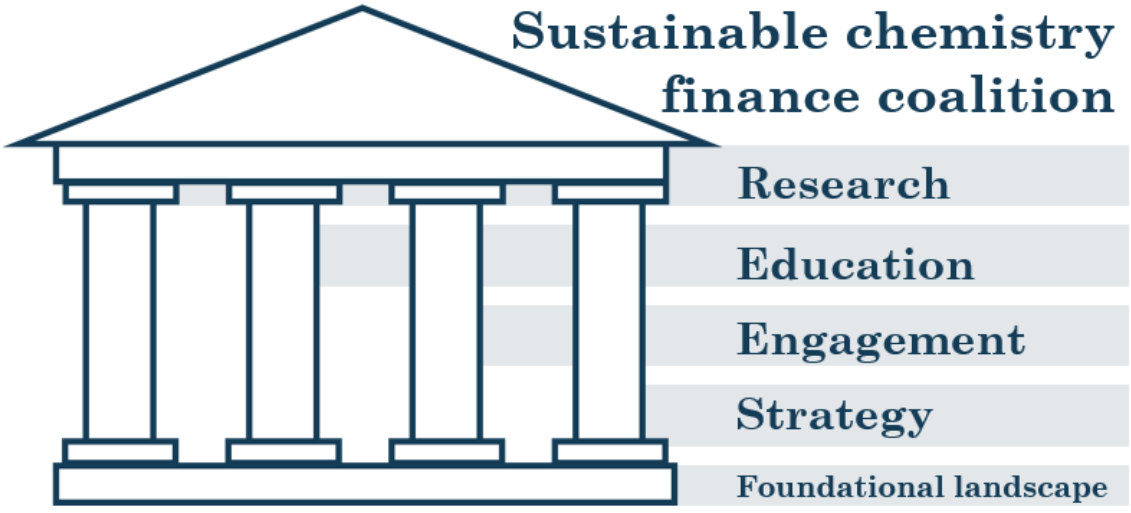
JUNE 2023

Strategic approach to transition finance for sustainable chemicals and materials:

A blueprint for the finance community



UMASS LOWELL

Sustainable Chemistry Catalyst

INVESTOR ENVIRONMENTAL HEALTH NETWORK

Clean Production Action

CONTENTS

BACKGROUND AND CONTEXT

Many chemicals on which our global economy depends have been linked to disease in humans, biodiversity loss, and climate change.[1] The impacts of chemical pollution on human and ecosystem health, particularly on vulnerable populations, are now breaching planetary boundaries—the parameters within which humanity can safely operate—with significant costs to the economy in terms of health care, clean-up, lost services, and lower productivity (**FIGURE 1**).

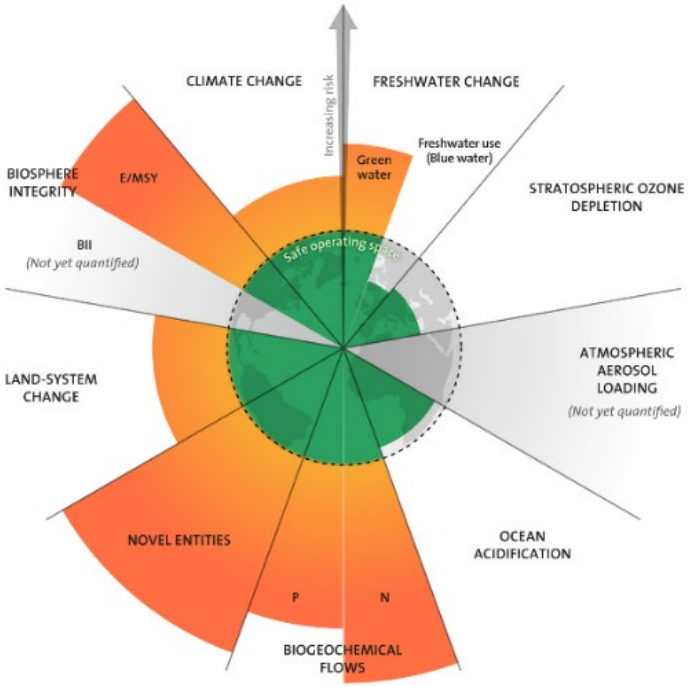


FIGURE 1: A planetary boundaries assessment demonstrates that novel entities (i.e., chemical and material pollution) pose a high risk to humans and the environment.[2]

Companies across the value chain are undermanaging the growing regulatory, legal, reputational, and redesign risks from hazardous chemicals in production and products. This undermanagement creates unexpected financial liabilities and makes it difficult for the finance community to calculate costs.

Sustainable chemistry considers health, safety, and decarbonization in the development of new chemicals, materials, and products from production through to disposal.[3] This focus helps to "design out" the current financial risks that can negatively impact companies and investors (**FIGURE 2**) However, chemical risk and the opportunity space for sustainable chemistry as an innovative, enabling solution to address multiple risks—chemical, climate, and biodiversity—are not yet common practice in the investment community.

The finance community played a critical role in building the current generation of chemicals and materials and has a unique responsibility and opportunity to support the next generation of chemicals and materials that reduce chemical pollution. The finance sector can leverage

[1] Tickner et al. Transitioning the Chemical Industry: The Case for Addressing the Climate, Toxics, and Plastics Crises. Environment: Science and Policy for Sustainable Development. 2021.
[2] Persson et al. Outside the Safe Operating Space of the Planetary Boundary for Novel Entities. ES&T. 2022.
[3] ECOSChem. Definition and Criteria for Sustainable Chemistry. 2023

FIGURE 2: Sustainable chemistry definition and criteria developed by the Expert Committee on Sustainable Chemistry[3]

its incredible power to grow economically successful solutions that address converging planetary crises.

The Sustainable Chemistry Catalyst at the University of Massachusetts, Lowell, and Clean Production Action's Investor Environmental Health Network (IEHN) undertook a collaboration to develop a blueprint to accelerate necessary investments that support the design, commercialization, and adoption of sustainable chemistry across sectors and value chains. The two organizations collectively have over three decades of experience scaling market and policy solutions for a safer, more sustainable chemicals economy. The Catalyst and IEHN have built trusted relationships among the industrial, financial, government, and nonprofit advocacy communities whose efforts, strategies, and subsequent policy and marketplace successes serve as a foundation of knowledge and research for financial leaders committed to growing investments in sustainable chemistry innovations.

This work includes research on:

- **The investment case:** Avoidable financial risks and unavoidable macrotrends that impact companies manufacturing and dependent on hazardous chemicals. The investment case also presents the investment opportunity in sustainable chemistry.
- **Tools available for the finance community:** Investor-based disclosure frameworks measuring corporate performance on chemicals manufacturing, use, and management.
- **The finance landscape for sustainable chemistry:** The investment and capital stack that funds chemistry and material innovation from early-stage research and development through manufacturing.

Two hybrid meetings and numerous one-on-one discussions with experts from the financial sector provided key insights into the background research and blueprint. A project advisory committee (see acknowledgements) representing financial sector leaders in sustainable chemistry and materials met regularly through the course of the project, shaping overall directions. The resulting papers reflect our research and insights gained from the many

engagements with financial leaders held over the course of a year (available online here). These findings informed the prioritized action items outlined in this blueprint.

A QUICK NOTE ON DEFINITIONS

Chemicals of concern have detrimental impacts on human health and the environment either during their manufacturing, transport, use, or disposal. Although specific definitions of chemicals of concern vary slightly depending on context, there are lists that assemble these chemicals. These lists include the 'Substitute it now' (SIN) list as defined by a chemical-focused nongovernmental organization called ChemSec, 'Substances of very high concern' as defined by the European Union, and 'Candidate Chemicals List' as defined by the California. These chemicals should be prioritized for substitution with sustainable chemicals and materials.

Finance community refers to the actors directly involved in funding companies through various mechanisms and the actors that support the structure of the financial system, such as rating agencies and the brokers of international finance frameworks.

Sustainable chemistry is the development and application of chemicals, chemical processes, and products that benefit current and future generations without harmful impacts to humans or ecosystems. Its criteria include equity and justice, transparency, and circularity, as well as considerations of impacts on the climate, ecosystems, human health, and safety.[4] Sustainable chemistry encompasses green chemistry.

Sustainable chemicals and materials are designed, implemented, and subsequently evaluated based on the definition and criteria for sustainable chemistry.

Sustainable chemistry finance refers to the system and actions related to the circulation of funding that supports sustainable chemistry, which includes credit, debt, and investment.

OVERVIEW: A STRATEGIC APPROACH TO TRANSITION FINANCE FOR SUSTAINABLE CHEMICALS AND MATERIALS

The Strategic approach to transition finance for sustainable chemicals and materials—herein called the blueprint—identifies key actions needed to significantly grow investments and financial sector engagement that support the transition to sustainable chemistry over the next thirty years. To frame these actions, we propose a Greek temple as a model, where the pediment (roof-like structure) extends over four pillars. A solid foundation supports these four pillars (**FIGURE 3**).

[4]ECOSChem. Definition and Criteria for Sustainable Chemistry. 2023

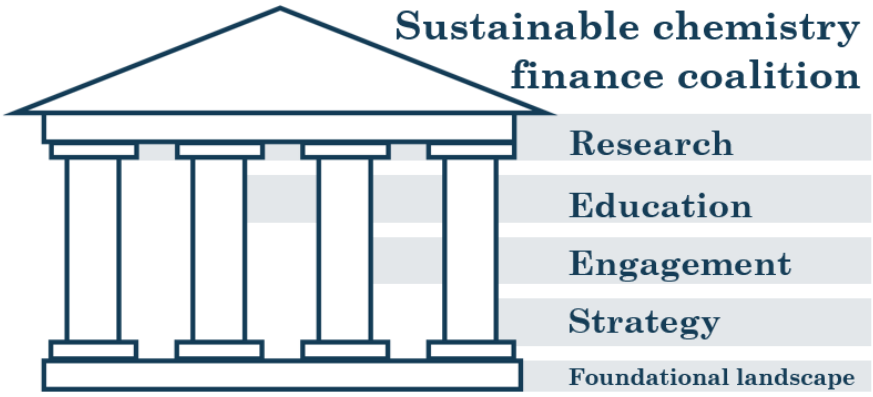


FIGURE 3: Graphical representation of actions needed to finance the transition to sustainable chemicals, with research, education, engagement, and strategy coordinated by a coalition.

The overarching goal of the blueprint, symbolized by the pediment, is to create a **sustainable chemistry finance coalition** of leaders from the finance community and experts in the academic, nonprofit, and industry spaces. The goal of the coalition is to build aligned finance community engagement and drive necessary changes in private and public sector finance to significantly grow support for sustainable chemistry over the coming decade. Proposed actions (the pillars) supporting the establishment of the coalition include:

- **Research** to build a business case for sustainable chemistry investment that is sector specific. The coalition can also develop metrics that standardize company action on sustainable chemicals to support finance community decision-making.
- **Education** to build understanding and expertise in the finance community regarding chemical risks and the opportunities from investment in sustainable chemicals and materials. The coalition will also create and host accessible resources for the finance community.
- **Engagement** through the coalition to connect financial sector actors to investors, businesses, policy makers, scientists and others working to address hazardous chemicals, biodiversity, and climate change.
- **Strategy** to prioritize actions that could have the most impact and be leveraged in driving sustainable chemistry transition finance. These priorities will be informed by experiences in the growth of climate finance and clean tech. The coalition will evolve the strategic approach, considering emerging barriers and accelerators.

This coalition will build on a **foundational landscape**, the basis for characterizing and assessing the financial risks and opportunities in sustainable chemistry finance. The landscape was informed by project background research and will be regularly updated based on further research and engagement in the coalition.

A key desired outcome of this coalition is to measurably increase the finance community's understanding and support of sustainable chemistry as an emerging area of growth that

simultaneously addresses chemical risk and delivers new opportunities. Key to our success is demonstrating that these investments result in value creation in companies of interest to the finance community. Also of critical importance, the coalition will refine the metrics and develop the case studies needed to show how sustainable chemistry delivers necessary market-based solutions to multiple areas of concern such as climate change, biodiversity, and plastic waste.

We consider the blueprint a work in progress, one that will evolve as a greater understanding of risks, needs, barriers, and opportunities emerges. Nonetheless, we see the core goal—building a community dedicated to advancing investments and other forms of finance community support that grow solutions to chemical and material impacts—as a critical first step. We invite feedback from the finance community and others involved with growing sustainable chemistry to refine the blueprint so that it most effectively aligns with evolving community needs.

FOUNDATIONAL LANDSCAPE OF SUSTAINABLE CHEMISTRY

The transition to sustainable chemicals is fueled by two concurrent movements—one working to decrease the use of hazardous chemicals and one working to increase safer, more sustainable chemicals in the marketplace (**FIGURE 4**). The Catalyst and IEHN teams analyzed the drivers for both to build an initial foundational landscape that underpins this blueprint. The results of this analysis are summarized below, and the full investment case is available online.[5]

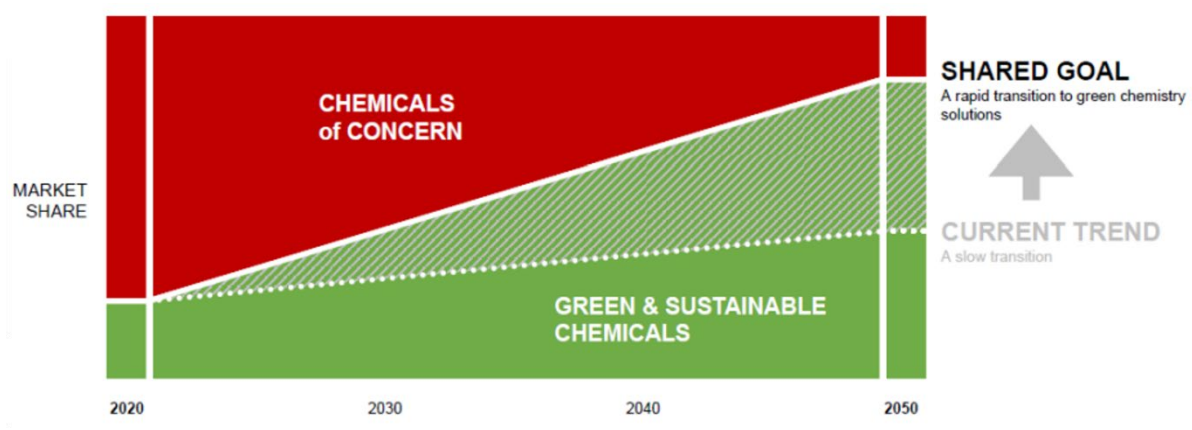


FIGURE 4: The growth of sustainable chemicals requires a decrease in chemicals of concern and a concurrent increase in sustainable chemicals. Greater involvement from the finance community has the potential to accelerate the transition. [6]

Decrease the use of hazardous chemicals:

There are increasing regulatory, market, and scientific drivers for reducing the use of hazardous chemicals in chemical processes and products. The trifecta of increased litigation costs, growing consumer concern about product safety, and market forces being driven by a

[5] Sustainable Chemistry Catalyst. Sustainable Chemistry Investment Case. 2023.
[6] Image Source: Institute for Safer Alternatives. 2021.

global rise in regulations is resulting in major market leaders establishing efforts to reduce their chemical footprint by decreasing the use of chemicals of concern. Companies with over $1 trillion in annual revenue collectively achieved a chemical footprint reduction of 37 million kilograms, as reported in the 6th annual Chemical Footprint Project Survey.[7]

Increase the use of sustainable chemicals:

The availability of sustainable chemicals and materials is growing as consumers and businesses demand safer products that are also more sustainable. Trust in these innovations has been supported by sector-specific certifications. This push for safety and sustainability has resulted in product growth, as recent analyses by the Green Chemistry & Commerce Council (now Change Chemistry)[8] and McKinsey[9] have shown.

Competitors are increasingly collaborating on solutions, which is scaling impact toward safer chemicals. Companies that are positioned to transition their operations and supply chains to sustainable chemistry ahead of their peers will benefit from competitive, lower costs and access to markets restricting chemicals of concern.

Build on the financial community's current actions to accelerate sustainable chemistry:

Through this project, we researched how chemical management and sustainable chemistry are reflected in investor-based assessment and disclosure tools.[10] Leading firms such as MSCI and Sustainalytics include chemical risk in environmental, social and governance (ESG) risk ratings for certain sectors but do not reward companies that are building value by investing in sustainable chemistry solutions. And voluntary disclosure frameworks like the Sustainability Accounting Standards Board (SASB) require disclosure on chemical management programs and investments in sustainable chemistry programs only for sectors where the risks are considered material, such as the chemical industry and the retail, personal care, and household goods sectors. Corporate disclosure to these SASB disclosure benchmarks is limited and does not provide enough quantitative or qualitative data to use for corporate performance assessments.

Investor-led engagement campaigns are setting expectations on companies to reduce their use of chemicals of concern because of rising financial costs and business risks associated with consumer concern, new regulations, and litigation. For example, asset managers in the Investor Environmental Health Network are driving corporate participation in Clean Production Action's Chemical Footprint Project. ChemSec's Investor's Initiative on Hazardous Chemicals is putting pressure on leading chemical companies to reduce their use of chemicals of concern—in particular per- and polyfluoroalkyl substances (PFAS), also known as "forever chemicals"—and invest in safer substitutes.

While investor collaboratives focused on the problems of plastics and hazardous chemical use are gaining momentum and achieving positive changes, no collaborations are specifically

[7] Chemical Footprint Project. Sixth Annual Report. 2022.
[8] Green Chemistry & Commerce Council (GC3). Green Chemistry: A Strong Driver of Innovation, Growth, and Business Opportunity. 2021.
[9] McKinsey. Consumers care about sustainability—and back it up with their wallets. 2023.
[10] See full analysis on disclosure frameworks (available online here)

dedicated to mobilizing the finance community around accelerating the market transition to sustainable chemistry.

A critical part of building a coalition for sustainable chemistry finance is understanding the structures and motivations of investors along the continuum from early stage to production scale. Financing sustainable chemistry innovation will require coordinated private-public investment along the finance continuum—including an aligned capital stack and patient capital—given the long timeframe and capital needs at every step, from R&D to pilot, deploy, and scale. A need for foundational data, case examples, and communication resources can underpin coalition-building efforts and strengthen the case for investment.

PEDIMENT: SUSTAINABLE CHEMISTRY FINANCE COALITION

The finance community has organized in the past to address sustainability issues of global concern, resulting in the development and widespread use of ESG frameworks to inform investment decisions. Early efforts led to the development of reporting initiatives and tested whether socially responsible investments could outperform the market. Such early ESG efforts culminated in various reports in 2000–2010, backed by the United Nations and the broader finance community, that outlined methods and motivations for socially responsible investing and brought ESG reporting frameworks to the wider finance community.[11] These reports created the foundation to mobilize financial support for major initiatives, such as the UN Framework Convention on Climate Change, the Kyoto Protocol, and the UN Global Compact.

Our coalition can learn from and leverage the growth of organizations collaborating on ESG reporting frameworks and assessments, as well as more recent coordinated efforts to drive climate transition finance, as models. Efforts to build finance community engagement on climate change—led by organizations such as CERES, Net Zero Investors Alliance, and others—have been around for more than two decades. While these organizations' efforts have made significant progress in encouraging companies to establish net zero commitments and transition plans, significant additional advocacy will be needed to shift the oil and gas sectors toward more sustainable investments. And the challenges for financing sustainable chemistry are similar to or greater than those for climate transition finance, including insufficient data, financially material metrics, and analytical tools to measure and manage transition risks.[12] It will take a similar amount of time and effort to build a sustainable chemistry finance coalition.

However, given increasing scientific evidence of chemistry's connection to other key concerns for investors, including biodiversity and climate change, there is opportunity to accelerate this timeline of coalition building. Recent UN-backed efforts in the global biodiversity framework, global plastics treaty, and the Strategic Approach to International Chemicals Management (SAICM) Beyond 2020 framework could present motivating forces for investors to coalesce around the need to support the innovation and adoption of sustainable chemistry. For example, to accelerate the transition to sustainable chemicals, the UN Environment Programme (UNEP) and UNEP Finance Initiative are proposing efforts to guide strategic actions in the finance sector to address chemicals and waste goals globally.

[11] UN Environment Programme Finance Initiative. A Legal Framework for Impact: sustainability impact in investor decision-making. 2023.
[12] OECD. Financial Markets and Climate Transition: Opportunities, Challenges and Policy Implications. 2021.

Specific overarching actions to build toward a coalition to transition finance for sustainable chemistry include:

ACTION ITEMS	
	A. Build a coalition across the finance community, from front-running actors to mainstream institutions, to advocate for financing the transition to sustainable chemistry. B. Build and publicize a platform that gathers resources in an accessible format for the finance community. Link this platform to other educational resources that demonstrate the scope of research and progress being made in this area among nonprofits, academia, industry leaders, and government. C. Bring together and empower a community of change agents in the finance community whom the coalition can support and who can contribute to the advancement of sustainable chemistry financing.

The four pillars in support of the coalition are research, education, engagement, and strategy.

PILLAR I: RESEARCH

As demonstrated by the growth of ESG approaches and early efforts to classify investments, the finance community needs specific tools, metrics, and rankings for sustainable chemistry investments with which to scrutinize financing of companies. Although the scientific, regulatory, and business communities have worked to define sustainable chemistry and general criteria, these need to be adapted into consistent metrics and best practices for the finance community that both direct innovation and avoid greenwashing.[13] In addition, there is a need for concrete examples of successful sustainable chemistry investments, their adoption across value chains, and their benefits for investors, as well as lessons learned from failed investments. Investors will need tools and certifications that enable them to evaluate the benefits and risks of chemicals and materials. Better data that helps build a case for financial risk, and for seizing opportunities will be essential to our collective success in broadening engagement with the finance community.

To execute the actions outlined below, the Catalyst and IEHN could partner with aligned financial firms to expand research competency and capacity. Proposed research actions include:

[13] For the purposes of this effort, we use the multi-sectoral Expert Committee on Sustainable Chemistry Definition (FIGURE 2). We recognize this was built from several other definitions. Some governments, such as the European Commission with its Safe and Sustainable by Design criteria, are also in the process of developing definitions for sustainable chemistry.

ACTION ITEMS	
	A. Identify priority sectors for sustainable chemistry innovation or implementation and develop sector-specific case studies that assess the potential growth and returns for companies in this space. B. Determine the barriers for implementation of sustainable chemistry in these sectors and their associated supply chains. Hypothesize how finance community support can address these barriers. C. Outline sustainable chemistry opportunities (companies and technologies) at different technology readiness levels (TRLs). Determine which opportunities at different TRLs are most in need of an influx of funding for lasting impacts. D. Advance standardized sustainable chemistry metrics by promoting existing metrics develop new metrics where needed in partnership with trusted data providers. Focus on metrics that compare companies with peers in their sector. E. Develop a systematic process to identify and prioritize sustainable chemistry initiatives by sector, product, performance, and cost.

PILLAR II: EDUCATION

In developing this blueprint, the Catalyst and IEHN's engagement with the finance community provided a baseline assessment of the finance community's existing understanding of sustainable chemistry. The community has a limited—though growing—understanding of chemical risk and an even lower familiarity with the opportunities associated with sustainable chemistry investment. Investors increasingly understand the role of the chemical industry in achieving decarbonization goals—for example, in bio-renewable chemicals and materials and process electrification. However, there is little evidence that investors are accurately pricing the risks of chemical pollution. This discrepancy could result in regrettable trade-offs if chemistry investments designed to mitigate climate risks lead to unintended toxicity impacts for specific communities.

A small set of investors is familiar with common tools used to assess chemical risk and safer chemicals, such as chemical footprinting, hazard assessment, and certain product certifications. But these tools need to be clearly connected to advancing sustainable chemistry. Just as the finance community learned to assess greenhouse gas emissions data—understanding the link between climate risk and investment opportunity in the renewable energy economy—without being atmospheric scientists, the finance community can learn to scrutinize chemical opportunity without being experts in sustainable chemistry or environmental health.

Engaging the spectrum of investors—from early stage to banks and public equity—can lead to a more coordinated bench-to-scale pipeline for investment. Other finance community actors, such as analysts, trusted data providers, research organizations, and those doing due

diligence for the investment community, will need to be part of the sustainable chemistry finance solution—building a stronger case, metrics, and aligned strategies.

The finance community must also understand the unique R&D and resource demands in the chemical industry, including cash-flow certainty, processes to scale, and regulatory and multiple-supplier requirements. Chemistry investments require a long-term horizon and patient capital from the early stage through manufacturing and second facilities. The typical timeframe for new chemicals from development to scale is 10–14 years. Although innovative sustainable practices have been pioneered in the pharmaceutical and biotech industries, similar practices have not yet been scaled to the size needed for implementation in the commodity chemical industry. Similarly, these needs must be matched with an understanding of risk tolerance and return on investment requirements in the finance sector to address barriers to investment.

Specific education actions include:

ACTION ITEMS	D. Grow knowledge and exchange information and experience regarding the opportunities for sustainable chemistry through regular discussions with actors in the finance community, innovators, and advocates for sustainable chemistry. For example, host webinars and seminars that translate technical information into relevant metrics and analysis. Link interested finance community members to key resources developed by the sustainable chemistry community to assess and measure opportunities. A. Ally the efforts in decreasing hazardous chemicals and accelerating sustainable chemistry to avoid regrettable substitutions and accelerate transitions toward safer chemicals and materials. Demonstrate the link between accelerating sustainable chemicals, decreasing climate change, and enhancing biodiversity.

Any educational materials created should be easily accessible to the finance community and in a digestible and accessible format.

PILLAR III: ENGAGEMENT

The finance community is already involved with many sustainability initiatives, including biodiversity and climate, which may initially appear disconnected from chemical opportunity. Many do not have the bandwidth to engage in additional efforts. However, these initiatives are clearly linked to chemical risk:

- Chemical pollution is among the top five reasons for biodiversity loss.[14]
- Chemical pollution exacerbates the effects of climate change on human and environmental health.[15]

As such, it is essential to build a strong case for how products and practices designed with sustainable chemistry in mind can mitigate biodiversity loss and climate change. Engaging

[14] UN Environment Programme. 5 key drivers of the nature crisis. 2022.
[15] Healthy Building Network. Five Reasons Why Climate Change and Toxic Chemicals are Connected. 2019.

with existing finance coalitions focusing on other ESG issues, such as climate, water, and biodiversity, to leverage their networks can amplify sustainable chemistry solutions.

Given the clear need for aligned private and public sector funding, incentives, and policies to transition the chemical industry, it will be necessary to engage key governments, the United Nations, and the Organisation for Economic Co-operation and Development in building coordinated approaches. Engagement by key market sectors—such as retail—will enhance demand signals and stimulate the procurement necessary to ensure sustainable chemistry investments are viable in the marketplace. In addition, regular engagement with the scientific community (including health scientists, ecologists, and chemists) and innovators in the sustainable chemistry space will be key to educating the finance community on chemical risks and opportunities and building a stronger understanding of successes, challenges, needs, and opportunities.

ACTION ITEMS	
	A. Link the coalition to efforts in the finance community to decrease hazardous chemicals use to ensure these two movements can grow cohesively. B. Link the coalition to other coalitions advancing finance to address climate change, biodiversity, and plastic waste. Identify change agents who understand how sustainable chemistry can holistically address each crisis. C. Through a connection with Change Chemistry[16] and other business networks, create opportunities for finance leaders to network with leaders from companies that are developing and implementing sustainable chemistry. D. Leverage opportunities to align financial flows on innovative chemicals and materials targets into global treaties and policy framework developments, such as the global biodiversity framework, plastics treaty, and the Beyond 2020 framework. E. Collaborate with existing disclosure frameworks/standardization efforts to integrate sustainable chemistry into ESG frameworks, such as International Sustainability Standards Board, the Carbon Disclosure Project, and Science Based Targets initiative.

PILLAR IV: STRATEGY

Despite the increasing market drivers for change in the chemistry space, there are key barriers that directly impact sustainable chemistry finance including cost, reformulation, and recertification needs; different performance, regulatory hurdles; and the incumbency of existing optimized chemicals and materials.[17] These will need to be carefully considered and addressed to de-risk sustainable chemistry investment and for those innovations to be successful in the marketplace. Understanding the alignments that took place to build the current generation of chemicals in the 1940s, ’50s, and ’60s and strategies that have successfully launched other transitions (including renewable energy and information

[16] Change Chemistry. Formerly known as the Green Chemistry & Commerce Council (GC3) is a business organization that convenes companies throughout the value chain to drive the commercial adoption of sustainable chemistry.
[17] GC3. Advancing Green Chemistry: Barriers to Adoption & Ways to Accelerate Green Chemistry in Supply Chains. 2015.

technology) will be also useful for building the strategy to grow sustainable chemistry. In the end, aligning aggregated demand signals with coordinated finance, policy (restrictions, incentives, etc.), and industry strategies will play an important role in accelerating change.

A viable coalition to advance sustainable chemistry finance must adapt to evolving needs of the finance and business sectors and changing scientific, economic, and political circumstances. The coalition will need to priorities actions —including the sectoral focus of the coalition— to have the greatest impact in effectively engaging the finance sector and building a stronger case for broader investment and a sustainable coalition.

Specific actions related to strategy include:

ACTION ITEMS	
	A. Refine the mission and research, education, and engagement goals of the coalition. With the resources and connections available to the coalition, prioritize areas with the most impact. Evolve the strategic approach of the coalition based on noted barriers and accelerators and work with other stakeholders to address these.
	B. Identify key leverage points in the finance community and match these with growing efforts in sectors implementing sustainable chemistry, particularly with high-visibility opportunities. Learn and build from experiences in the growth of climate finance and clean technology to develop strategic opportunities.
	C. Create a communication plan that markets, brands, and builds widespread visibility of sustainable chemistry in the finance community through webinars, presentations, conferences, and publications.
	D. Engage and empower specialist investors to demonstrate the viability and profitability of sustainable chemistry investments to build a community of change agents.

TRANSLATING THE BLUEPRINT INTO ACTION

The moment is now for growing the financial community's role in sustainable chemistry. Given our increasing understanding of the impacts of chemical and plastic pollution on health and ecosystems; strong finance community action on climate and biodiversity; and increasing market, regulatory, and consumer pressures to move away from chemicals and materials of concern, the opportunity space for sustainable chemistry investment is clear and compelling.

Strong and aligned demand signals alone will not address chemical risk. A growing global population will need materials and products built on sustainable chemical foundations. Building a new chemical industry that supplies high-value chemicals and materials that meet societal needs and facilitate achievement of the UN Sustainable Development Goals will require significant private-public investment, combined with aligned environmental, health, and industrial strategy. Transitioning the chemical industry and its downstream consumers is entirely feasible, as efforts to transition the energy sector and the rapid development of today's chemical industry demonstrate. This blueprint outlines the path to building a coalition that will engage the finance sector at the level needed to accelerate the transition. This transition will not only create unrealized financial benefits but also solutions

that are needed to meet targets and goals established for climate change, biodiversity, and reduction of plastic waste.

We will use this blueprint as a starting point for outreach and engagement with the varied actors in the finance community to gather feedback and to identify key priority action items and next steps. The Sustainable Chemistry Catalyst and Investor Environmental Health Network are well positioned to support the development of a burgeoning sustainable chemistry finance coalition. We look forward to working with all those who provided input throughout this project and those whom we have yet to engage to build a stronger case for investment that drives win-win sustainable chemistry solutions for all.

Authors

The Sustainable Chemistry Catalyst is an independent research and strategy initiative based at the Lowell Center for Sustainable Production at the University of Massachusetts, Lowell. The initiative is focused on accelerating the transition to safer, more sustainable chemistry through research and analysis and stakeholder engagement with scientists, policymakers, and commercial actors.

The Investor Environmental Health Network (IEHN) is a membership-based investor collaborative that promotes the use of safer chemicals to enhance shareholder value, public health, and the environment. IEHN recognizes that a company's brand reputation, public trust, and market share are linked to the environmental and human health risks and safety of its products.

Acknowledgements

The project team was supported by an advisory committee of leaders in the finance and sustainable chemistry fields that provided significant input and insights into the blueprint and supporting documents:

- Susan Baker, Trillium Asset Management
- Alison Carlson, Forsythia Foundation
- Dominic Charles, Minderoo Foundation
- Julie Gorte, Impax Asset Management
- Peggy Lefort, United Nations Environment Programme
- Martin Mulvihill, Safer Made
- Mark Rossi, Clean Production Action

Additional valuable insights and input were provided through one-on-one interviews and two in-person meetings. We appreciate the significant input from members of Change Chemistry, members of the Investor Environmental Health Network, and ChemSec's Investor Initiative on Hazardous Substances.