



ROUNDTABLE REPORT

Introduction:

The annual Change Chemistry Innovators Roundtable was hosted by Nike in Beaverton, Oregon from October 28-30, 2024. The event brought together 177 participants (147 in-person and 30 virtual) representing 106 organizations across the value chain, including chemical companies, retailers and brands, startups, consultancies, investors, government officials, and NGOs. Attendees connected with peers across industries and sectors to address challenges and opportunities, share best practices, discuss key sustainable chemistry topic areas, and identify areas for collaboration to accelerate the scale and adoption of green and sustainable chemistry solutions.

Change Chemistry is a collaboration of more than 125 members committed to making safer and sustainable chemistry solutions widely available in the marketplace. Our members span diverse industries and include innovative startups, leading chemical companies, brand owners, and large retailers. We also engage and collaborate with policymakers, non-profit organizations, financial institutions, and consulting firms to advance our mission. Together, we align value-chain players to create a strong market demand that drives supply of safer, more sustainable chemistry alternatives. We do this by collaborating on projects and initiatives aimed at breaking down barriers to safe and sustainable chemistry commercialization and implementation, accelerating innovation and advancing supportive policies.

Over 3 days, the program explored a number of topics important to advancing safe and sustainable chemistry, including:

- Identifying key barriers and opportunities across the value chain to accelerate the transition to safer and more sustainable chemistry;
- The need to consider detoxification of chemicals alongside defossilization efforts;
- Incentives and funding necessary to innovate, scale and adopt safer and more sustainable chemicals and technologies;
- Building and empowering champions to institutionalize sustainable chemistry practices in organizations and creating communities of change;
- Opportunities and challenges for innovating future fit plastics across the life cycle;

- How the use of artificial intelligence (AI) can enable the design of safer and more sustainable chemistry;
- Scaling the use of more sustainable solvents across a variety of product categories.

Key Takeaways:

Accelerating the transition to safer and more sustainable chemistry requires innovation around aligned criteria and priorities, as well as engagement and collaboration with a broader set of communities.

- Collaboration accelerates innovation. Representatives from industry, government, NGOs, and academia need to align on priorities, standards, and strategies that are crucial to creating and accelerating the sustainable chemistry solutions of tomorrow. Aligned criteria for positive attributes will help shape the market in the right direction.
- Companies along the value chain, regulators, and investors need to more meaningfully engage with frontline and impacted communities throughout the lifecycle of development and commercialization of sustainable chemistry solutions to better understand how communities could be positively and negatively impacted. The “justice molecule” is one that addresses these impacts from the outset.
- Sustainable chemistry requires considering a broad range of sustainability attributes including climate and ecosystem impacts; health and safety impacts; as well as equity and justice. Sustainable chemistry solutions need to first and foremost be safer throughout the lifecycle but often must also address other critical sustainability considerations such as Scope 3 emissions. Assessing solutions for other potential unintended consequences or tradeoffs is essential. If a technology or chemistry shifts the burden (i.e. decreases carbon emissions but increases the material’s hazard), creates new biodiversity impacts, or disproportionately impacts specific communities, it is not a sustainable solution.

Growing sustainable chemistry in the long term requires institutionalizing it as a key priority within organizations.

- Sustainable chemistry is intrinsically connected to other business goals, such as reducing carbon emissions, circularity, business growth, performance, and brand reputation. This value must be communicated through all levels of an organization to build the business case for sustainable chemistry and support its widespread adoption.
- Education plays a crucial role in building a sustainability minded workforce. Modifying the chemistry and engineering curriculum to prepare the next generation of professionals to tackle sustainability challenges is crucial and cannot be disregarded.
- As recognition of the role of sustainable chemistry in achieving a number of sustainability goals increases, there is a need for professional development and learning across corporate functions in order to understand and embed the importance of integrating sustainability as a KPI, along with cost and performance, in chemical product development, particularly to

maintain the focus on sustainability as other priorities or business conditions change. Such training across business roles can help create champions and institutionalize learning and change across the firm. Organizations like Change Chemistry, Beyond Benign, and the ACS Green Chemistry Institute are prepared to support companies in professional development, but industry input on what skills are needed across business roles is important.

Data transparency, standard metrics, and certifications or recognition programs should be employed in concert to measure and signal progress towards safer and more sustainable alternatives.

- Data transparency is needed to accelerate the adoption of sustainable chemistry as it provides companies, regulators, and investors with critical information about the safety and sustainability of chemicals and materials. Collaboration through the supply chain is key to increasing transparency about chemical use and the health, safety, and other sustainability attributes of sustainable chemistry solutions.
- Achieving data transparency remains a key challenge. For example, the lack of information about both the use and toxicity of plastic additives used at various stages of the supply chain creates a knowledge gap about product hazards as well as challenges to recycling and circularity.
- AI could provide an important tool for enhancing transparency and accelerating design and evaluation of sustainable chemistry solutions. As AI becomes more advanced, leveraging it fully will also necessitate greater understanding of intellectual property (IP) and how to best share data.
- Harmonized metrics and definitions of sustainability attributes are necessary to measure progress and confidently evaluate chemicals and products. This will also enable investors to better assess risk during the innovation process, enabling capital to be moved and distributed more confidently.

Scaling, commercializing and adopting sustainable chemistry solutions requires strategic investments and incentives.

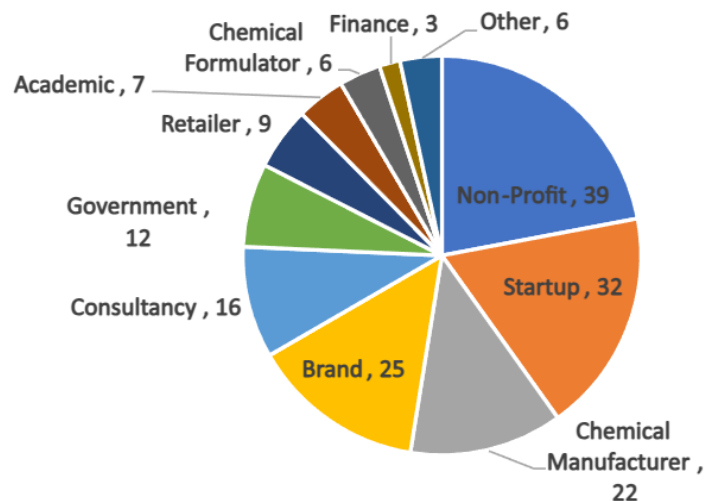
- A lack of funding can halt innovation. Investors, both public and private, play a key role in supporting the scale up of new technologies at different technology readiness levels (TRLs). Support at early stages of development is necessary, but securing funding at this level is often a barrier. Innovative, focused breakthrough venture funding can help accelerate sustainable chemistry deployment, particularly when combined with clear industry applications (validation). Innovators should actively work to lower their risk through methods like partnerships with academic institutions and offtake agreements with larger strategics (shared risk), but investors need to also take on more risk to drive innovations forward.
- Defossilizing existing feedstocks, chemistries, and materials is a long-term effort that will require significant sustained investment given existing backward integration of most chemistry to fossil fuel feedstocks. While investment in new technologies may be needed,

there may be existing ones with demonstrated success at smaller scale (niche high value applications) that need financing for replication and scale. To achieve sustainable sources of carbon for chemistry, it is important to consider potential sources and their tradeoffs, addressing areas where there are concerns or disagreements.

- The sustainable aviation fuel “playbook” may provide an inspiration for sustainable chemistry, including: global or national commitments that created plans to achieve net zero fuels; supply commitments; standards for renewable fuels; credits to create parity for renewable fuels; and industry demand and willingness to pay a premium from users (industry demand).
- For sustainable solutions to be competitive with incumbents, they must have the trifecta of sustainability, performance/functionality, and cost. However, until new technologies scale and are commercialized, higher cost often remains a barrier to adoption.
- Clearer incentives are necessary to encourage researchers to commercialize sustainable chemistry technologies. Signals on aligned interest and needs from large industry, funders, and government, as well as a clear willingness to support new technologies developed by startups and academia, will create a “market for ideas” and help bridge the commercialization gap between R&D and industry. Collaborative leadership is critical to driving growth.

Roundtable Participation and Feedback

Attendees of the Innovators Roundtable spanned the full chemical value chain, with both non-profit and startup organizations widely represented. Participants represented many different roles in an organization, such as sustainability, toxicology, marketing and communication, education, business development, and executive directors and CEOs.



In the post-event survey, 92% of respondents indicated that they are likely to attend another in-person Change Chemistry event. The collaborative nature of the Roundtable and the ability to network and connect with diverse stakeholders was highlighted as a key benefit of attending.

Next Steps

During the Roundtable, further discussion on driving sustainable plastics, incentives for sustainable chemistry, advancing sustainable solvents, policy incentives, and supporting professional development emerged as key needs and interests of the Change Chemistry community. In 2025, we aim to form new working groups to share best practices, identify barriers, and drive change in these areas. We also aim to establish a discussion on creating professional development tools to support organizations in distilling the value of sustainable chemistry and developing the skills needed to institutionalize it as a key priority. If you are interested in joining any of these groups, please contact our Program Director, Jenny MacKellar (jenny@changechemistry.org).

We look forward to continuing engaging our community in-person and virtually throughout the next year. To stay up to date on all our activities, follow Change Chemistry on [LinkedIn](#) and subscribe to our [newsletter](#). If you are interested in becoming a member, [click here](#) to find out more about the benefits of a Change Chemistry membership.

Thank you to our sponsors!



If you are interested in sponsoring a future Change Chemistry event, contact Rui Resendes (rui@changechemistry.org), Director of Partnerships and Business Development. If you are interested in hosting a Change Chemistry Innovators Roundtable or event, please reach out to our Program Director, Jenny MacKellar (jenny@changechemistry.org).