INTERNATIONAL COUNCIL OF CHEMICAL ASSOCIATIONS

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

International Council of Chemical Associations
Position on Circular Economy

Circular Economy – Sustainability & Circularity

As the global voice of the chemical industry, the International Council of Chemical Associations (ICCA) is committed to playing a key role in the systemic transition to a circular economy as a key component of sustainability, whereby resources and materials are continuously cycled to eliminate waste while creating value for all. As chemistry provides the building blocks for nearly 96 percent of all manufactured goods, our industry plays an integral role in reimagining the products, technologies, resources and systems that will power a circular, sustainable economy.

Steps toward a Circular, Sustainable Economy

Progress toward a circular economy must include not only the responsible and efficient use of energy and natural resources, but also enable the reuse, repurposing, recycling and recovery of value locked in materials traditionally viewed as waste.

More than 33 years ago, the chemical industry launched ***Responsible Care®*** – our global commitment to pursue an ethic of safe chemicals management and performance excellence worldwide. Through implementation of Responsible Care and the Global Product Strategy programs, the global chemical industry is committed to strengthening product stewardship practices throughout the value chain and advancing sustainable management of materials in all phases of a product's lifecycle, ultimately achieving greater performance transparency in environmental, health, and safety performance.

Beyond the required elements of Responsible Care, practicing companies evaluate their own unique roles in sustainable development and take action accordingly. ICCA member companies extend the ethic of Responsible Care throughout the value chain, and we are committed to collaborating with others to make stepwise progress toward circularity through:

- Innovations that help improve the reuse, repurposing and recycling rates of products like plastics.
- Technologies that recapture and repurpose chemicals used in manufacturing and break down discarded materials into their basic chemical building blocks, to extend the lifespan and create additional value for these molecules as raw materials that can be manufactured into new products or support new industrial uses.
- Sustainable product design and materials selection that improve product durability, enhances lightweighting, extends product lifespans and enables repurposing of product components, preserving their value and usefulness in a regenerative system.
- Use of systems approaches and lifecycle accounting to pursue technologies and products that reduce resource requirements and waste across the chemicals supply chain.
- Technologies that advance the production of bio-based materials and products through enhanced use of biomass feedstocks that require limited land and inputs to use.

- Innovations that help drive advancements in energy recovery technologies for non-recyclable materials.
- Greater resource efficiency and optimization of manufacturing processes that allow raw materials to go further, so more can be done with fewer resources and less waste, such as through Carbon Capture and Utilization (CCU) and gasification feedstocks.
- New commitments and investments that will allow industry and society to maximize the value, usefulness and societal benefit of every molecule, material and product that chemistry enables.
- Collaborate pro-actively with customers, scientists, communities and governments to improve end-of-life practices such as waste collection, segregation and processing so they can be upcycled back into valuable products.

To untap the full potential of a circular economy, industry, the value chain and policymakers, along with all stakeholders, should take into account the following principles:

1. **Safety first.** The circulation of resources in loops must be managed in a safe and transparent way for workers, consumers and the environment.

2. **Life-cycle thinking.** Prioritizing innovative material design and designing systems approaches that promote new business models, life-cycle thinking and advanced operational efficiency, materials reuse and resource conservation, in order to maintain the value of resources longer in the economy with consideration of all environmental possible impacts.

3. **Holistic value-chain approach.** Creating partnerships across the whole value-chain (including e.g. chemical manufacturers, distributors, downstream users and consumers) is the right way forward.

4. **Chemicals and health/Transparency and IP**. The industry is engaged in the journey towards a safer and healthier circular economy. Transparency on chemicals along the whole value chain as well as in end-consumer products will be essential for retailers, brand owners and the society, which will be a challenging balance with Intellectual Property for a business that relies on innovation to develop more sustainable solutions.

Circularity for the Greatest Societal and Environmental Benefits – Addressing Challenges

Circular Economy initiatives must embrace a holistic view of the economy that considers economic, environmental, and societal impacts of a product or material across its lifecycle. Approaches that measure circularity based on a single attribute, such as recyclability, rely on an overly simplistic formula, which can ultimately forfeit significant societal or environmental benefits that advance sustainability through the use of the currently non-recyclable product.

For example, certain chemistry innovations enable critical applications in health care, personal hygiene, transportation, infrastructure and packaging that are essential to sustainability, even if

the products themselves are by nature intended for a single use. Forfeiting those innovations in the short term for the sake of circularity could jeopardize decades of advancements that have led to a healthier, more vibrant society. Instead, the chemical industry supports pursuit of technological innovations and approaches that improve upon these materials over the long term, to eliminate waste and cycle resources and materials, while maintaining societal and sustainability benefits from chemical products.

Similarly, moving from waste management to resource management should be the long-term objective of the circular economy. The first step is to prevent valuable materials from being considered as waste altogether. All too often, materials which can be easily reintegrated in to production processes, without any safety and pollution risks, are defined as waste. Therefore, the chemical industry supports a life-cycle evaluation approach to help choose between different end-of-life management operations.

The Journey Ahead

Even as chemistry is enabling progress toward sustainable development and a more circular economy, there is much more to do to fully transition to business models where resources are continuously cycled to eliminate waste and maintain value. The chemical industry is committed to collaborating with members from industry, government, civil society and academic research institutions, in pursuit of outcomes that optimize materials, resources and technologies to create value for all.