



**MISSION
POSSIBLE
PARTNERSHIP**

CHEMICALS: LOW-CARBON EMITTING TECHNOLOGIES

OBJECTIVE

The Collaborative Innovation for Low-Carbon Emitting Technologies (LCET) coalition, hosted by the World Economic Forum and part of the Mission Possible Partnership, is the first CEO-led coalition in the chemical industry focused on transformation towards a net-zero and circular future. The initiative aims to put the global chemical sector on a path to reach net-zero emissions by midcentury by accelerating the development and upscaling of low-carbon technologies for chemical production and related value chains. This acceleration will be supported by an enabling policy and financing environment.

THE CHALLENGE

Due to global population growth and the expansion of the middle class, the demand for chemicals and materials is predicted to quadruple by 2050, as compared with 2010 levels. The chemical industry currently represents around 5 percent of global greenhouse gas (GHG) emissions, with annual emissions of 1.5 gigatonnes. Of these emissions, 85 percent are energy-related and 15 percent are process-related.¹ CO₂ is emitted at all stages of chemical production but is concentrated at the beginning of the value chain, in the basic chemical production.

To achieve carbon neutrality, the chemical industry has to master two challenges:



1. Reliable access to large quantities of competitive zero-carbon energy
2. Development and implementation of new technologies that utilise renewable sources of energy and raw materials

THE MISSION POSSIBLE PARTNERSHIP

The Mission Possible Partnership (MPP) launched in 2021 to accelerate the decarbonisation of global industries representing 30 percent of global emissions. MPP is an alliance of climate leaders (the Energy Transitions Commission, RMI, the We Mean Business Coalition, and the World Economic Forum) focused on driving faster decarbonisation in industrial sectors. Our goal is to propel a committed community of CEOs from carbon-intensive industries, together with their financiers, customers, and suppliers, to agree—and more importantly, to act—on the essential decisions required for decarbonising industry and transport in this decade.

MPP represents a step change in ambition. It brings together a remarkable group of business leadership coalitions, public-sector institutions, and expert organisations already accustomed to working together into an unprecedented collaboration to support growing CEO appetite for net-zero transformation. Our work builds on growing momentum, investor pressure, consumer expectations, and analytical tools to design and execute net-zero pathways for industries, their customers, their suppliers, and their capital providers.

¹ The Future of Petrochemicals, International Energy Agency, 2018.

OUR APPROACH

The LCET initiative is accelerating the development and upscaling of low-emissions technologies for chemical production through the development of intra-industry, cross-industry, and public-private collaboration on pilot projects for prioritised technologies. At the same time, LCET is addressing technology, regulatory, funding, and market challenges to decarbonisation.

MAJOR OBJECTIVES

LCET will focus on several key areas necessary for transforming the chemical industry. These include:

Coalition building: LCET is the first CEO-led coalition in the chemical industry focused on transformation towards a net-zero and circular future. The expert community is collaborating in several working groups and is engaging 70-plus senior chemical industry executives across technology, sustainability, finance, policy, and legal functions.

Roadmapping: Based on the outcomes of the technical studies and LCET cross-cluster work delivered in 2019–2021, LCET will develop an implementable, industry-driven roadmap for net-zero emissions by 2050 in the chemical sector.

Technology implementation: The initiative aims to foster alliances for the collaborative implementation of the prioritised technologies, potentially structured as joint ventures, startups, alliances, and others.

Policy: LCET identifies joint policy priorities for the deployment of low-carbon technologies in the chemical industry. In addition, the initiative will develop a map of supportive regulatory frameworks and public funding sources for implementation of LCET pilot projects in key geographical areas (e.g., China, Europe, Japan, the Middle East, and the United States). Furthermore, LCET aims to build a dialogue series with policy stakeholders in key regions to strengthen public-private collaboration on reducing GHG emissions.

Finance: LCET will develop a financing gap model to assess the optimal financing structure for potential pilot projects that deploy and scale low-carbon technologies. Furthermore, the initiative aims to increase understanding of low-carbon technology pathways and investment needs for the industry transition. Finally, LCET will seek to strengthen collaboration between the chemical sector and financial institutions.

Ecosystem collaboration: The initiative aims to build collaborations within the broad LCET ecosystem including feedstock and energy suppliers, technology providers, and value chain partners.





OPPORTUNITY FOR FUNDERS

In the global response to climate change, the chemical industry plays a dual role. First, because the chemical industry is highly integrated across other value chains, it provides essential solutions and products to enable other industries and consumers to transition to a net-zero future. Second, the industry itself is on an innovation journey towards net-zero emissions.

Considering the complexity of the transition ecosystem and the scale of transformation required, the chemical industry will need to collectively deploy multiple low-carbon technologies. The industry will also need increased collaboration with a wider ecosystem of suppliers (e.g., providers of renewable energy, biomass, or plastic waste), value chain partners (e.g., in the automotive, packaging, and construction sectors), policymakers, and financial institutions.

In order to secure its deliverables, LCET is seeking funding of 700–900 K CHF per year to run this initiative. This funding will support resources needed to develop a net-zero roadmap, initiate an assessment on potential demand signals to accelerate GHG emissions reductions in chemical value chains, and support the setup of cross-industry collaborative pilot projects.



For more information or to engage in this project, please contact:

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