

Carbyon enables capture of CO₂ from the atmosphere

A sustainable solution to extract CO₂ from the air has been, until now, a crucial missing piece of the puzzle for converting green hydrogen into clean fuels. Solving this puzzle will make it possible to convert renewable electricity into chemicals and fuels, closing the organic fuel combustion cycle using only water, air and clean electricity.

Technical experts from both ASML and Carbyon, a spin-off company of TNO, joined forces to develop a technical concept for a very complex machine to extract CO₂ from the air in an economically profitable way. In particular the elaboration of a 'gas-flushing' concept for the transition from air to CO₂ and vice versa was developed in more detail based on technical experience from ASML. With ASML's active support, Carbyon has accelerated the design and realization of its proof-of-concept. It is moving toward becoming a scaleup company with €2.5 million in financing raised, and is in talks with various venture capitalists for capital growth. Thanks to Carbyon, we are one step closer to creating a sustainable future.

Make Next Platform

To support young innovative high-tech scaleups, ASML founded The Make Next Platform in 2016 together with Huisman, Vanderlande and the non-profit Stichting Technology Rating. Thales NL joined as a co-founder in 2019. The Make Next Platform puts the partners' network, competencies, expertise, and experience to work in answering questions that these scaleups encounter in their development. We help them grow into a sustainable company.

The Make Next Platform aims to help young technology companies that have moved beyond the startup phase and are ready to expand. These companies, so-called scaleups, face challenges such as finding the funding needed to grow, knowing how to target new customer groups, and recruiting new employees with the right skills. Through exchange of best practices, business experience and coaching from corporate experts, the Make Next Platform partners aim to support them in their development to become global players by giving them access to their inside networks.

Up to now, the Make Next Platform has screened more than 200 companies and engaged with the management teams of more than 50 of these. So far, seven scaleups have been adopted and more than 10 are currently in the pipeline.

Innovation ecosystem KPIs

The table below shows the key performance indicators (KPIs) and the related 2025 targets. The non-financial data may include a degree of uncertainty, because of limitations in measurement method and assumptions applied. *Read more in: Non-financial statements - About the non-financial information - Reporting indicators.*

KPI	2019	2020	2021	Target 2025
R&D expenses (€, in billions)	2.0	2.2	2.5	n/a
Number of R&D partner agencies	144	130	121	n/a
Startups reached Star level from total startups supported (in %)	17%	16%	15%	> 20%
Number of scale up companies supported (in #)	5	7	7	14
Start-ups and scaleups in-kind support hours	1,300	1,550	2,100	n/a

Contributing to the UN's Sustainable Development Goals

Our ambitions, commitments and programs as described in this chapter contribute to the following SDGs.

SDG target	How we measure our performance
SDG target 9.1 - Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.	<ul style="list-style-type: none"> Supporting startups to Star level Supporting scaleup projects Collaboration in EU projects
SDG target 9.4 - By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.	<ul style="list-style-type: none"> Collaboration with research partners Energy efficiency of our products measured per wafer pass
SDG target 9.5 - Enhance scientific research, upgrade technological capabilities of industrial sectors in all countries, in particular developing countries. For developing countries, this includes, by 2030, encouraging innovation and increasing the number of research and development workers per one million people, as well as public and private research and development spending.	<ul style="list-style-type: none"> Investments in R&D Collaboration with R&D partner agencies