Ketentransitie in de procesindustrie

Green chemistry, new economy

The importance

The chemical industry located in the south of the Netherlands faces an enormous task to achieve the climate objectives set for 2030 and 2050. If the substantial CO2 emissions are not reduced in time, the industry is threatened in its existence. The southern Dutch region can be considered the 'chemical manufacturing region' of the Netherlands for plastics and fertilizers. These are raw materials for many downstream industries (construction, textiles, cars, etc.) and therefore largely determine their sustainability profile. Furthermore, the chemical industry is of great economic importance, as it provides employment to approximately 100,000 people in the provinces of Zeeland, Noord-Brabant and Limburg. The three major industrial areas Moerdijk, Terneuzen and Chemelot are anchored in the National Climate Agreement and house hundreds of large and small companies in the (petro) chemical, logistics and manufacturing industries.

The opportunity and approach

In order to meet the climate objectives in the chemical industry, raw materials should come from renewable sources. In addition, raw materials production must be based on clean energy, mainly by using electricity. However, circular solutions as such have hardly been demonstrated on an industrial scale. It is often not economically viable, due to the highly efficient existing solutions based on oil and gas. Therefore, a step-by-step implementation plan supported by companies, knowledge institutions and government is critical. This plan should lead to a large application of biobased and circular raw materials and electrification in the industry – on a relevant industrial scale in 2025. These measures will cover several tens of percent of the climate objectives due in 2030, and will lay a strong foundation for the roadmap to 2050.

New green value chains can be created by connecting the large chemical players with innovative SMEs and scale-up companies, supported by knowledge institutions. This will lead to new economic activity and opportunities for employment. Organizations within the region must be connected within three areas:
o the agricultural sector for biobased raw materials,
o the recycling sector for the reuse of materials,
o the high-tech manufacturing industry for electrification and digitization.

By stimulating collaboration, best practices can be shared, even as the bear of risks. The region has various triple-helix organizations that can facilitate and guide the upscaling process, including the ENZuid partners (Economic Cooperation South Limburg, Keyport, Crossroads Limburg, Brainport Eindoven, AgriFood Capital, Midpoint Brabant, REWIN, Economic Board Zeeland) and more specifically the Brightlands Chemelot Campus, Brightsite, Circular Biobased Delta, the port companies Moerdijk and North Sea Port and Smart Delta Resources. Cooperation with the port of Rotterdam and the chemical clusters in Flanders and North Rhine-Westphalia offers opportunities for synergy and upscaling.

Let's get started…

.. *with the companies:* numerous SMEs and scale-up companies in the region are ready to start realisation.
Nine promising initiatives are described in the Plan 'Chain Transition in the process industry'. However, none of them are low-hanging fruit projects: companies often experience the same bottlenecks. Together with the triple-helix organizations, the value chains can be further developed and strengthened, while aiming for a long-term supply and sales for the chemical industry.
.. *with funding organisations:* many funds are available or have been announced: regionally through the development companies, nationally through instruments such as the Future Fund, SDE + (+) and Invest-NL, and at a European level such as the Innovation fund and InvestEU. The nine initiatives from the southern region have so far been unsuccessful in obtaining funding. This is in line with the statements of the government's Industry Letter on such high-risk, high-cost projects: they are not financed by the market and are difficult to get off the ground without government assistance. A joint effort is therefore required.
.. *with the authorities:* the region must work together to investigate how the climate improvement instruments of 'The Hague' and 'Brussels' can stimulate the upscaling of circularity and electrification in the process industry as optimally as possible. The south of the Netherlands is maximizing its efforts to use (new) funds from Brussels for the intended green transition. Both via the current structures for the deployment of regional EU funds (OP Zuid / Stimulus), as well as through programmatic collaboration. Circularity, including the electrification of production, has been identified in the policy frameworks of Europe (Green Deal), the Netherlands (IKIA, Letter to Parliament for the Basic Industry, the Growth Letter, the Hydrogen Agenda) and the EN-South region (RIS3). Topics that still require attention are:
o existing instruments could be optimised, for example access to the SDE+ (+),
o the usage of biomass should focus on value creation in chemistry: currently, applications in power generation are mainly promoted,
o the ETS system and its associated legislation (such as a CO2 tax) does not stimulate the use of circular materials by the process industry (there is no recognition for reduction of 'scope-3 emissions').

Invitation to work together

A Plan for chain transition in the process industry has been defined, which will serve as a starting point to accelerate initiatives around 'Green chemistry, new economy'. The ambition here is to scale up sustainability initiatives towards an industrial scale by 2025. The first nine examples are ready, but several others will follow. We invite all stakeholders in the region, in The Hague and in Brussels to support the next phase, towards a detailed Action Agenda on November 4th, 2020!