We are proud to present the Chemelot Circular Hub investment agenda, a unique multi-helix partnership between companies, knowledge institutes, governments and residents in and around Limburg. We believe that we can occupy a leading position in the development of a European circular economy. Our approach and our ecosystem can help us act as a guide for other chemistry ecosystems in the Netherlands and Europe. This is our collective ambition.
Dear Reader,

Our society is taking the first real steps toward a fully sustainable and circular economy. This is an exciting phase during which urgent threats to but also enormous opportunities for sustainability arise. Collective action is needed! Taking action now will give us the advantage in circularity and sustainability that we need to make the transition a success for society. Chemelot Circular Hub is positioning itself as a testing ground of international importance for the transition to a circular economy and society, and deserves to be included in the Dutch and European action agendas. This investment agenda provides detailed information on the backgrounds, circular paths chosen and broad long-term investments. We invite you to join us in making our ambitions reality. New partnerships are necessary in order to achieve these plans.

Bert Kip
Chair regional board
Chemelot Circular Hub
Chemelot Circular Hub is ideally situated in Western Europe, right at the heart of the ARRRRA chemistry cluster.

ARRRRA:
- 340,000 jobs in chemicals
- 40% of European chemical sales

Chemelot:
- 8,100 jobs
- 100 nationalities
- 110 companies and factories
Multilevel Approach

Intensive integrated collaboration and investments

European

Euregional / ARRRA

National

Regional

Chemelot Circular Hub
At the heart
The ultimate growth accelerator for a circular society
Doing nothing isn’t an option

2030 is tomorrow

2050 is the day after tomorrow
The world is looking for a way to create a society in which we are in balance with our planet, and can guarantee a sustainable future for future generations. Doing nothing isn’t an option; in relative terms, 2030 is tomorrow and 2050 is the day after tomorrow. This is why our goal with Chemelot Circular Hub is to meet the social and economic challenges we face head on. A broad alliance of parties involved with the Chemelot chemistry and materials cluster is working on building a world with zero waste, one where used products and materials are processed to create new raw materials for new products. These products must be clean, safe and remain competitive for the long term. If we take the lead in this, it will have national and international impact. Time for Leading Circularity.

Together with Chemelot Circular Hub, Limburg is in the running to become the first circular hub in Europe.

The Chemelot site and the local region aim to be the ultimate growth accelerator for a circular society, a powerful hub for economic growth and future prosperity that is connected to people, the environment and society as a whole.
Chemistry is the solution

Chemelot Circular Hub is our key to solving the urgent and major transitions that we are facing as a region, and as the Netherlands and Europe. This forms the foundation for the strong position that companies at Chemelot have worked to achieve in the past. This includes parties such as SABIC, OCI, Fibrant, AnQore, Arlanxeo and many others, companies that supply the global market with essential products such as plastics, chemicals and fertilizer that our economy and prosperity will need for many years to come.

The raw materials used to make these products will however change in the circular world, from those with a fossil origin to plastic residual flows, waste and biomass. We want to accelerate and scale up this process to build a powerful collective circular movement, supported by the rapidly growing demand on the part of society, consumers and producers for sustainable circular products. This isn't just good for the environment; together we can also create new future-proof businesses and earning capacity.
Innovating together

Many of the organizations based at Chemelot and Brightlands Chemelot Campus are global leaders in their specific field, and we continue to build on this position. This is the ideal location in Europe to ensure the transition to circular raw materials will be a success. Industry and science have been innovating together here for 80 years, in a setting that offers plenty of expertise and the room to experiment and scale up. It’s an ecosystem that works closely with governments, knowledge institutes and society, and is situated right in the middle of Europe’s most important chemistry axis that runs from Antwerp and Rotterdam to the Rhine-Ruhr Area (ARRRA).

Staying competitive

The companies at Chemelot are feeling the sense of urgency to become more sustainable. Since they operate on a global level, a level playing field is key when it comes to legislation, regulations and environmental and other levies. A focus on this level playing field is necessary in order to remain competitive from a base in the Netherlands. Another factor involves the enormous investments this transition will require, both for companies currently based at the site as well as new arrivals. When it comes to costs, “nothing ventured, nothing gained” applies, and circular processes will have to be innovated and scaled up alongside the need to maintain current production processes. Supporting contributions are needed to help bridge this phase and keep competitive conditions intact and to strengthen them.
Social impact

Over the next thirty years, we here at the Chemelot Circular Hub will be cashing in on the opportunity to bend the effects of industrialization in a sustainable direction. We are creating the leverage needed for the transformation to a circular society, one in which every resident can participate. For residents, this must lead to an even cleaner, safer and healthier living environment. We are captivating young generations and securing their loyalty with educational programs focused on circularity, appealing career prospects and the connection to a vital labor market. This also applies to people who are interested in retraining to acquire circular knowledge and skills. New social development opportunities are arising in the area, creating synergy with the Province’s spatial development challenges.

For entrepreneurs, small- and medium-sized enterprises and industry, it generates economic opportunities, and provides knowledge institutes with a top position globally and structural embedding in the region. It is only by working closely with residents and SMEs that we can proudly make a successful shift towards a forward-looking circular society with national and international impact. Chemelot needs the region and the region needs Chemelot.
We are taking the lead
For a circular future
Circular Hub Development Agenda

Our ambition has been set out in a Circular Hub Development Agenda by a broad alliance of companies, government agencies and knowledge institutes. We have chosen four routes to show what we want to change in the short-, medium- and long term: circular innovations & applications, circular competencies, circular foundation and circular society. When it comes to these investments, we are taking a multi-level approach to the financing options on a regional, national and European level. We are going to be developing a roadmap with flagship projects over the coming period.

Chemelot Circular Hub deserves a position on the Dutch and European action agendas with the related funding and investment instruments. We welcome the opportunity to enter into a dialog with representatives of national and European government bodies and other relevant stakeholders. We are committed to a strong partnership to stimulate the acceleration of growth towards a circular society.
The road to the circular society: the journey has already begun!

SABIC/Plastic Energy is working on breaking down plastic waste to produce original building blocks through the TRUCIRCLE initiative. This innovation is already being used in the packaging industry.

Ioniqa is committed to expanding its successful methods for recycling PET products to also enable using them in the future to recycle other types of plastic, such as bioplastics.

This is just a small selection of the many initiatives and breakthroughs already achieved. The Chemelot Circular Hub alliance will bundle and accelerate these initiatives in the coming years.
Sitech is working with its partners to produce circular water, another of Chemelot’s ambitions. This ensures that waste water from the manufacturing facilities doesn’t get lost in the environment, gets reused and can also generate heat.

AnQore is producing the world’s first sustainable, non-fossil, certified acrylonitrile.

Fibrant is working on the rapid reduction of greenhouse gas emissions, including nitrous oxide.

CHILL, Zuyd Hogeschool, VISTA college en de Universiteit Maastricht are connecting education and business in the Chemistry domain. The goal is to educate students at different levels on current issues while also helping companies with their innovations.

Brightlands Chemelot Campus is acquiring several companies such as Coolbrook, Recycling Technologies and Deep Branch Biotechnology that want to develop and demonstrate their new circular technologies at the Campus.

Niaga scaled up successfully with carpets that are “designed to recycle”.

Fibrant is working on the rapid reduction of greenhouse gas emissions, including nitrous oxide.
A global top position
Chemelot Circular Hub is leading circularity
The Netherlands is facing enormous challenges. How can we emerge stronger from the corona crisis, while at the same time making our world more sustainable, ensuring everyone can participate and help make and keep us all healthier? There is also a growing awareness in the region of how urgent it is to look ahead together, and to put our nose to the grindstone when it comes to making the economy stronger.

Failing to act now can have major, far-reaching consequences for the chemical business park as we know it today. If today’s major global market players turn their backs on Chemelot, the impact on Limburg will be enormous and the economic strength of the Netherlands will also be susceptible to taking a hit. We must act now and start plotting out the path to a circular future. We can and are doing this; after all, there’s a reason “leading circularity” is our motto.
Our strength
We are taking the leap to circularity in a well-considered manner and based on our strength.

This strength is also evidenced in the unique combination of Chemelot Industrial Park and the innovative Brightlands Chemelot Campus. Together, the industrial park and the campus form a powerful and enterprising ecosystem that safeguards the entire value chain, from product conception to production, and from startup to full-fledged business. The strength of our ecosystem, the concentration of business activities, the years of development and accumulation of skills means that we can be the leader in the circular transition. We are happy to share our experience with other chemistry clusters in the Netherlands and Europe. This allows us to play a guiding role for the circular economy within the total national and European chemistry and materials sector.

As the fifth economic center of gravity in the Netherlands, we make an important contribution to the national earning capacity.

The region is one of Europe's top centers for ground-breaking innovations in chemistry and materials, and holds a leading position when it comes to the added value of chemical clusters in the Netherlands. It is also an important part of the ARRLA cluster, the largest and best-positioned chemical cluster in Europe.
Thanks to the companies based at Chemelot, South Limburg accounts for 20% of the direct added value generated by this sector in the Netherlands.

In South Limburg, 12,000 people work in the direct chemical industry, representing nearly 12% of the total of people employed in this sector in the Netherlands. South Limburg boasts the highest added value per person employed in the chemical industry, 67% above the national average. This makes the Chemelot Circular Hub the most productive chemical industry cluster in the Netherlands.

The acceleration we are advocating will enable us to deliver solutions for the national and European challenges of the climate transition and other pressing environmental issues.

The circular transformation will allow us to create future earning capacity and labor productivity for the Netherlands and innovate the current broad foundation for prosperity. A successful transition will not only have an impact within Limburg, but also internationally, such as for the Euregional partners, the ARRRA cluster and beyond. The leading regional chemical industry alliances in the Southern Economic Network (EN-Zuid), and cross-border consortia such as Trilateraal in the Netherlands-Flanders-North Rhine-Westphalia triangle are already demonstrating this impact.
Another factor contributing to this success is our central location in the Euregion and Europe.

Chemelot is in the middle of the largest sales market in Europe, but is also favorably positioned for future raw material flows. The logistics connections are excellent for all four modes of transport: road, water, rail and pipelines. Without national borders, in one fell swoop the Chemelot Circular Hub conurbation will become the region with the largest range of jobs, second only to Amsterdam. Speaking of the power of agglomeration, adjacent partners in the Euregion the site works closely with offer valuable complementary advantages. The proof of this is knowledge institutes based at Brightlands Chemelot Campus such as AMIBM (Aachen Maastricht Institute of Biobased Materials), Brightlands Materials Center, Brightsite and CHILL.

And finally, we have an enormous ability to adapt.

We know what transitions mean, from small-scale agriculture to large-scale coal mining to chemistry and materials. We’re not just at the start of the next transition; we have been on this path for a long time, experimenting, implementing and scaling up promising circular innovations. This gives us cause to view the future with optimism and realism, and with full confidence in our investments in the necessary strengthening of cooperation between our companies, knowledge institutes, governments and citizens at all levels, both national and international.
Connected to people
Our goals
We are creating a circular value chain, circular business models and increasing earning capacity with the chemistry and materials sector as the main driver.

We place a high value on the companies and their current market positions; they form the foundation for future circular activities. We nurture the technical infrastructure and knowledge to ensure the permanent, relevant production of plastics, fertilizers and chemicals. We do this based on a real understanding of the major challenges our chemical companies are facing. We are creating circular value chains, securing the supply of renewable energy and making great progress in the use of residual heat (through integration with the built environment, among other things). We share our experience and sell knowledge through licensing where possible.

We are going to prove that investments in the Chemelot Circular Hub will generate strong economic and social returns.

These investments don’t just benefit innovation and competitiveness in the chemistry and materials business cluster, but also regional SMEs, customers and suppliers active in other markets, employees, job seekers, students, people with a passion for research or the ambition to start a business.
We are committed to Euregional cooperation.

In addition to economies of scale, this contributes to an enormous strengthening of the region’s knowledge position, and this attracts talent and business activity. The Euregion as a showcase of European cooperation. After all, a circular future is not reserved exclusively for this region, even though we do want to be the first mover.

Chemelot Circular Hub will make a major contribution to our society by applying circular processes to lower the CO₂ footprint per resident.

Investing in our transition reinforces our competitive strength, and also makes a positive contribution to promoting sustainability and achieving climate targets, even far beyond our own region. In the transition to a circular economy, the Chemelot Circular Hub is guiding for the Netherlands and Europe.
Chemelot is the economic crystallization point and driving force for broad prosperity and the development of social welfare for the entire Limburg region.

We are taking economic advantage of our leading position in making the economy circular by increasing disposable income and creating valuable new and future-proof jobs. The transition to a circular economy requires residents to take a different view of the economy and society, to examine new business activities, earnings models and (platform) cooperation. Every student, employee, self-employed person and entrepreneur in the region is involved in lifelong development. This leads to better employability and increased participation in the labor market.

Every resident of the region is part of the efforts to develop greater awareness of, familiarity with and the skills involved in circularity.

In addition to specialist professional expertise, the development needed to create a circular society also requires awareness, acceptance and behavioral change from residents about the impact circularity can have on their daily lives, such as the sustainable and circular use of products and the separation of residual flows, and the acceptance of these changes, particularly in logistics flows. Promoting the region as a circular hub fuels collective pride, and is an invitation for people to actively participate.
Cashing in on opportunities
We are making our ambitions concrete in three guiding goals
Reinforcing Chemelot's leadership position as the ultimate epicenter for the circular chemical industry and Brightlands Chemelot Campus as the place to be for talented researchers, engineers and entrepreneurs who achieve circular innovations and scale up circular processes and products.
Guiding goals 2

The structural strengthening of the regional economy, an economic and social growth track for an inspiring place to live and work.

This is an environment with great potential for attracting, training and securing the loyalty of talent from the region and beyond. Activating the lifelong learning capacity and raising the community spirit of (South) Limburg.

Guiding goals 3

Increasing regional, national and Euregional earning capacity and accelerating the sustainability and climate transition.

This must be done not only by making the economy more sustainable, but also by preventing the potentially excessive financial consequences of the energy and climate transition for the Dutch population. This has a positive effect on the important support base among citizens and consumers.
We are the key
Long-term Investment Agenda
2020 - 2030
An integrated action agenda for achieving our growth ambitions

The Chemelot Circular Hub consists of a broad alliance of companies, knowledge institutes and government bodies that advocate an integrated, future-proof investment in its core quality: making chemistry, the economy and society circular. It is a direct response to the needs of consumers and residents, the market and society. Limburg is positioning itself as an international hub for circular economy and society.

We are undergoing a radical transition process, making it all the more urgent get started now with an action agenda to mobilize strength. This means an agenda that exudes both willpower and resilience to meet the challenges ahead, to respond flexibly to opportunities and developments that arise in the future.
Four pillars

We have chosen an integrated approach based on four pillars that support our development and growth ambitions.
Pillar 1
Circular investments, innovations and applications

Central challenge
How can we improve our ability to innovate and do business so that we can make an indispensable contribution to the transition to a sustainable, circular economy in the Netherlands? What investments in new first-in-kind installations are needed? Which parties with new technologies do we want to attract to the Chemelot Circular Hub?

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Pillar 2
Circular competencies

Central challenge
How can we strengthen the employment market’s position in the region to ensure it will be able to fulfill the Chemelot Circular Hub’s long-term growth ambitions?

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Pillar 3
Circular foundation

Central challenge
What is needed for the transition of Chemelot and its external environment to create a Chemelot Circular Hub with European significance?

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Pillar 4
Circular society

Central challenge
How can we develop the surrounding cities and region to build a leading circular testing ground with simultaneous improvement of both the physical and social living environment?

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Major interventions
Implementation through flagship projects (listed below). These projects are worked out in detail using prudent, action-oriented and functional roadmaps. Strong links to programs and investment funds on a national and European scale are being sought.
Pillar 1

Circular investments, innovations and applications

We help give substance, form and momentum to the mission-driven innovation policy of the national government and top sectors. We do this through a targeted acquisition and innovation agenda, the electrification of processes, circular value chains, circular raw materials and efficient industrial processes, materials and product design with and for circularity, innovations and applications with added social value.

Flagship 1

Design for and with circularity, circular applications

We are investing in new design methods for our daily products to make circular consumption possible.

Flagship 2

Residual flows as raw materials

We are transforming the process steps to turn waste into raw materials. How: by investing in the development and realization of new technologies, by attracting parties that will scale up their technology at the campus, by attracting parties that are applying technology they have already developed for the first time on a large scale here at the industrial park, or by developing new technologies in the research centers.

See infographic on page 82
Biomass as a raw material

We are investing in the development of biomass supply chains to guarantee the availability, quality and logistics flows of bio-based raw materials, while at the same time developing technology to create more usable building blocks from the diversity of biomass flows. How: through innovation, by attracting technology companies that scale up their technology at the campus or are applying their technology for the first time on a large scale at the industrial park.

See infographic on page 84

Tackling emission problems

We are designing an integrated innovation approach with innovation projects aimed at reducing emissions, such as microplastics and nitrogen emissions from fertilizer. We are also working on a circular wastewater system to eliminate the need to dump wastewater into surface water.

Electrification of production processes

We are focusing on electricity as an energy source for our production processes.

Cross-sectoral integration of water, heat and digitalization

We are focusing on circular water and the integration of the energy supply for industry (through adequate and sufficiently stable CO₂-free electricity supply) and the built environment (electricity, residual industrial heat), including energy efficiency through heat pumps, for example) and energy storage (heat; stored electricity in discarded car batteries) and developing the required supporting integrated digital innovations to stabilize the regional balance of supply and demand.

Biomass as a raw material

Not all products can be fully designed and used in a circular manner. Products such as soap, cosmetics, paint and food additives cannot be retrieved, and some plastic materials age in a way that makes direct reuse impossible. This “carbon leakage” in the chain must be compensated with another source of carbon: bio-based raw materials. Since there are many different bio-based sources, and it isn’t possible to put these smaller, different biogenic sources to direct use in existing large-scale industry, it is a major challenge to convert these streams into one or a few large-scale building blocks that can be used to replace fossil carbon.

In order to guarantee the availability, quality and logistics flows of bio-based raw materials, while at the same time taking a targeted approach to developing technology capable of creating more usable building blocks from the diversity of biomass flows, we are implementing major system changes in the affected supply chains that include radical technological innovations, new earnings models and new players to complete the value chains and ensure we can work together like a well-oiled machine.
Infographic 1

Waste-based Feedstock

Crude oil
Natural gas

Crude oil
Natural gas

Naphtha
Hydrogen

Synthesis gas

Gasification

Chemical Recycling

Depolymerisation/Gasification

Solvolyse/Purification

Mechanical Recycling

Re-use

Out of scope

Naphtha replacement

Pyrolysis: Sabic
Plastic Energy Recycling Technologies: Itero...

Depol: Ioniqa
Plasma: Brightsite...

Recycling Avenue...

QCP CHILL
Blue Plastics...

RWE

Goal 2050
0% Crude oil necessary

Goal 2050
0% Natural gas necessary
The region has a complete, collaborative chain of educational and research institutions at its disposal, making it an excellent starting point for adaptive education with attractive hybrid learning environments, training and retraining of the workforce to hone current skills and develop circular competences.

Strengthening the education chain

We are formulating an integral research agenda and the related resources to ensure we will be able to handle the impact of the transitions, naturally in line with the action lines from the Circular Innovations and Applications domain.

Employability and involvement of people

We are transforming our educational system and retraining teachers on new circular knowledge and skills in the form of the Circular Academy.
Real estate for education and research

We are developing co-locations that bring together the elements of the integral education column, connected to the business community. It is a place where vocational and university-level students can be trained in the practical aspects of their profession, yet also do business. It is also where startups form and new businesses and regional SMEs can take advantage of the availability of unique facilities (see also 10.).

Setting up labs and professional premises

We are setting up labs and professional premises for purposes ranging from research projects (including digital) in urban centers - in cooperation with regional SMEs and also together with residents - to research centers with (expensive) equipment to accommodate research and training.

Furnishing labs and professional premises

We are setting up a Circular Materials Field Lab. This “maker space” is a place where students, young entrepreneurs and startups working with corporate businesses and knowledge institutes begin to work on circularity focused on: new designs, new and adapted processes, working methods, earnings models, all focused on efficient, recyclable applications, and so on.
The Chemelot industrial cluster offers unique opportunities thanks to its integration in the production processes of the companies based at the site and the available infrastructure. We can maintain this leading position and capitalize on it through follow-up investments in future-proof infrastructure for (chemical) recycling and sustainable energy, intrinsic safety and room for industry to develop.

New investments and the establishment of circular industrial activities

Creating boundary conditions within which existing and new companies can maximize the return on their investments in circularity. This includes the necessary infrastructure to accommodate these new circular industrial activities.

Security of the supply of renewable raw materials (circular and biogenic)

Coordinating the circulation, collection, sorting and pre-treatment of plastic waste streams and biogenic streams resulting in maximum value utilization of these streams.
Pillar 3

Security of renewable energy supply
Securing availability and access to renewable energy and strengthening the electricity grid.

Adequate capacity for logistics infrastructure
Optimization of modes of transport for renewable raw materials via water, road, rail and pipeline networks.

Urban-industrial symbiosis
Creating connections with regional SMEs and improving the perception of safety in the surrounding area.

Awareness & acceptance
Achieving broad social acceptance, participation and awareness of the transition.

Security of supply of renewable raw materials (circular and biogenic)
We will coordinate the circulation, collection and sorting of organic waste streams and make maximum use of the value of circular and biogenic raw material streams. This involves both the quantity and quality of raw material flows and the infrastructure to transport them to Chemelot.

Attention will be placed on the coordinated collection and sorting of organic waste streams, including end-of-life plastics, household waste and sewage sludge. The free movement of organic waste streams across national borders and maximum value utilization of biomass through regional symbiosis; cooperation with the agro-chemistry sector in the Euregion. The decentralized compaction of recycling streams and biomass to optimize logistics flow (developing satellite sites) and the creation of a robust pipeline network for CO₂, H₂, LPG, propylene and ammonia are also part of this approach.
A circular society will differ from today’s society in many aspects of everyday life, and its development affects everyone. Everyone can take on a role and join in these efforts. However, society is not only facing many changes, it must also be able to train or attract the people building these changes and, last but not least, accommodate them conditio-sine-qua-non.

Compared to the current regional and social point of departure, this is reflected not only in stronger Euregional links, connections and cross-sectoral interaction in terms of energy and water issues (see flagship 6), but also in the future creation of an attractive regional business and investment climate. For current and future residents, local pride and support for our transition traditions and circular ambitions will increase.
Pillar 4

We are working on improving the health of the population
Starting with the scaling up of “the healthy elementary school of the future” for the entire province of Limburg.

City lab
The creation of an inspiring place to live, starting with test neighborhoods and centers such as city labs, where the circular society arises in connectivity between knowledge centers such as Brightlands Chemelot Campus and the urban environment.

Acceleration of sustainable energy consumption
We are working on sustainable energy consumption in regional housing construction, starting with the upscaling of Chemelot’s reuse of residual heat for 100,000 homes.

Intelligent handling of waste in society
We are working on encouraging citizen participation to achieve a circular economy. This starts with the involvement of citizens, and circular waste collection for all Limburg households from 2024 onwards.

Strengthening Euregional links and connections with a focus on public transport infrastructure
We are considering possibilities such as testing grounds to experiment with driverless taxis travelling between the knowledge institutes; the connections between city labs and expert centers, etc. This also involves the creation of concrete connections between Euregional SMEs, including expansion in a Euregional context.

Social support and regional pride
We will create community support and regional pride for the circular transition, starting with the sense of ownership on the part of today’s young people (also through primary and secondary education) and resident participation in the transformation to the circular society.
The Chemelot Circular Hub represents the formulation of an ambitious agenda. The projects mentioned here demand a commitment from the business community as well as authorities and other stakeholders in the region, on behalf of the national government and the European Union.
The Chemelot Circular Hub represents the formulation of an ambitious agenda. The projects mentioned here demand a commitment from the business community as well as authorities and other stakeholders in the region, on behalf of the national government and the European Union.

Achieving the Chemelot Circular Hub ambitions will require a minimum investment of €4 billion over the next ten years (2020-2030). This involves additional public-private investments, in other words, on top of those that companies or governments already intend to make in the greening of production processes, creating infrastructure or introducing new applications and/or competencies.

These investments serve as major leverage both in terms of economic earning capacity (contribution to gross national product) and social benefits (valuable employment, public support and broad prosperity). The added social value is expressed as more favorable scores for South Limburg on the Broad Prosperity Indicator.

The Chemelot Circular Hub provides additional job opportunities in the industry (directly) and related suppliers and service providers (indirectly). Over the next ten years, a total of 8,000 to 16,000 jobs will be created in one of the most productive sectors in the Netherlands. This will lead to an additional 10% economic growth and increase South Limburg’s contribution to the national income.

When it comes to these investments, we are taking a multi-level approach to the financing options on a regional, national and European level. Part of this approach is the roadmap we will be producing in the coming period, elaborating on the flagships mentioned here, turning them into concrete projects to be implemented in the short- or medium term. We are also proactively looking to coordinate with existing policy programs and roundtables. Our attention is focused to a large extent on legislation and regulations that support the transition to sustainability while maintaining a level playing field in view of competitive developments on an international level.
What will the development of the Chemelot Circular Hub yield?
The central focus is on contributing to a new, future-proof Euregional, regional and national earning capacity while at the same time taking major steps towards a sustainable society.

Currently the most productive chemical cluster in the Netherlands, we set the standard for the transition to circularity. We intend to further expand our leading position in sustainability and focus on becoming the sustainable production location for the chemistry and materials sector.

The Chemelot Circular Hub fosters the circular economy and sustainability of the Netherlands. Our point of departure is the sustainability needs of consumers and businesses. Chemistry and materials lie at the basis of products, applications and value chains throughout the Dutch economy, from the construction and automotive sectors to the pharmaceutical and packaging industries. If the chemistry and materials sector is more sustainable, the Netherlands will be more sustainable.
Growth acceleration requires strong partnerships.
We are well aware that we can only achieve this through partnerships. The ambitious transition that the chemical cluster and the region aim to undergo can only succeed with strong cooperation and investments from regional and national public and private parties.

Coalition of the willing and acting

The regional partners hope to create the strongest possible support base in the province, the Euregion and with partners and regions elsewhere. Carefully considered agreements within the Chemelot Circular Hub and participation in partnerships by Chemelot Circular Hub partners will help our plans become concrete and gain momentum. There is a specific focus on the development and use of tools aimed at promoting regional pride and support. Within this context, a “coalition of the willing and acting” serves as the starting point.
The Chemelot Circular Hub partners have already established connections to numerous initiatives from various alliances and networks.

A few examples:
Koploperprogramma (Frontrunner Program)

The Ministry of Economic Affairs and Climate’s Frontrunner Program illustrates industry’s contribution to this transition. Chemelot ranks among the top five industrial clusters in the Netherlands, and is also part of this Frontrunner Program. Within the context of the Frontrunner Program, Chemelot works closely with the four other industrial clusters and the Ministry to monitor progress and establish preconditions, particularly when it comes to infrastructure.

Partnership with Limburg businesses

Chemelot works with the other Limburg ETS (Emissions Trading System) companies and the province within the scope of the LEA (Limburg Energy Agreement). This enables the climate policy experience gained at Chemelot to be shared with other large and medium-sized Limburg companies (such as VDL, Rockwool and Mosa).
Energy and chemistry highway

A bundle of pipelines between Rotterdam and Chemelot with the possibility of extending them to North Rhine-Westphalia is an important precondition for strengthening sustainability, promoting the modal shift and reinforcing the strategic position of both Dutch industry and Mainport Rotterdam. In order to maintain the competitive position and make industry in Brabant and Limburg more sustainable, new pipelines must be laid between Chemelot, Moerdijk and Rotterdam. A feasibility study is currently being carried out at the behest of Chemelot, the Port of Rotterdam Authority, the Dutch Ministries of Economic Affairs, the Interior and Kingdom Relations, and Infrastructure and Water Management in conjunction with the Provinces of South Holland, Brabant and Limburg. These same connections are also needed for transports to Germany and Antwerp, as discussed in the Trilateral Chemical Strategy. The sustainability of the RWE power plants in Geertruidenberg (Brabant) and Maasbracht (Limburg) can also benefit from additional connections to pipelines. These pipelines will result in a lower number of trucks on the road, relieve the burden on inland ports, mitigate the risks of low water levels in the Rhine, reduce the number of hazardous materials transports in inner cities, and help shape the much-needed reduction in CO₂ emissions. The need for additional pipelines can be divided into short- (LPG, propylene) and long-term (hydrogen, CO₂ and possibly ammonia) needs and pipelines with both public and private owners. One major challenge is to fit these pipelines into the already crowded Netherlands, to combine as much work as possible (“the cost of laying three pipes is the same as two”) and to collaborate.
across sectors and clusters. Public parties such as Gasunie, Tennet, the municipalities and provinces involved, the Port of Rotterdam Authority and private parties such as RWE, Sabic, OCI, BASF and many partners in the German hinterland will have the opportunity to benefit from this “energy and chemical highway”. For the public aspect of this “highway”, the necessary bridges, tunnels and earthworks will have to be financed using public funds. Private parties will then be able to lay pipelines as quickly and effectively as possible.

**ENZuid Chemistry - Knowledge sharing**

In order to align the knowledge and skills of the suppliers and specialized SMEs with the development direction, concrete sustainability projects are being set up through the ENZuid (Southern Economic Network)’s chemistry program, with the support of the three southern provinces and the Ministry of Economic Affairs and Climate. The projects chosen must generate essential know-how for the sustainability transition, such as the large-scale use of bio-based raw materials as substitutes for naptha, and the circular use of plastics through various technologies.
South Limburg NOVI area - Engaged community

The movement towards a circular economy cannot happen without a social dialog on the effects and conditions of such a transition. The sustainable reuse of materials requires both support from the community and acceptance of the spatial implications. South Limburg has opted to take on the position of pilot area within the context of the National Strategy on Spatial Planning and the Environment or NOVI. The planning for the region takes into account the effect the transition to a circular economy can have on the positive dynamics for society as well as the consequences for the living environment.

Cabinet strategy

“Research and Innovation Ecosystems” commissioned by the Ministry of Economic Affairs and Climate and the Ministry of Education, Culture and Science. This background study cites Chemelot Circular Hub as an example of research and innovation ecosystems in the Netherlands.
With unified strength
Investing together
It is only by working together that we can ensure focus in implementing the change goals and, based on a healthy investment climate with attention to a level playing field vis-à-vis international competition, we can achieve meaningful results for the future-proof development of the economy and society.

Where possible, we will join forces with other chemical clusters and relevant cross-border networks. From the Chemelot Circular Hub and as industrial complexes in the south of the Netherlands, we are working with the Zeeuws-Vlaanderen/NorthSea Port region, the Moerdijk port and industrial complex in Brabant, and where opportune, with the Amsterdam and Groningen clusters.
In terms of cross-border cooperation, we are working with the Ministries of Economic Affairs and chemical sectors in the Netherlands, Flanders and North Rhine-Westphalia. This cooperation is aimed at boosting sustainability while maintaining a competitive position in 2050 in the so-called ARRRA cluster. The cluster of chemical “hotspots” in these three regions combined form the largest chemical cluster in the world.

Within the scope of these and other partnerships we are building (cross-border) consortia, with the business community in the lead. Examples of international cooperation by the processing industry include the Cracker of the Future, Hydrogen of the Future and Circular Carbon of the Future consortia. The goal is to develop innovative technology focused on the transition to circularity, climate neutrality and commercial upscaling.

We want to draw attention to possible amendments to legislation and regulations and/or the drafting of new laws that are necessary for the Chemelot Circular Hub’s circular applications and development. We would also like to discuss the possibilities of (earmarked) investments or other financing options we can apply toward bridging the unprofitable top and the “valley of death”, and thus structurally accelerate the circular applications and upscaling at the Chemelot Circular Hub. We would like to organize this in partnership with the national and European governments and as such pursue the national and European funding possibilities in this partnership.

We welcome the opportunity to engage in a dialog with representatives of national and European government bodies and other relevant stakeholders. We are committed to a strong partnership to stimulate the acceleration of growth towards a circular economy.
For the generations of tomorrow
Colofon

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A forward-looking circular society with national and international impact