



New
Industrial
Policy

TRANSFORMATION BY INNOVATION

Flanders in Action with the New Industrial Policy

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The Flemish Government's New Industrial Policy - transformation through innovation



Flanders has a central location in Europe, on one of the largest port deltas and surrounding Europe's economic and cultural capital. It has an open, varied economy, whose leading sectors include the chemicals, textile, food and biotech industries and the health-care sector. High-performance education gives access to many highly specialist competences, and the region is continuing to increase its investment in innovation, despite its shrinking budget. Flanders is at the heart of the transformation of European industry, and must have a long-term vision and take action if it is to succeed at the forefront of the EU's 2020 strategy. This vision and action are reflected in the comprehensive 'Flanders in Action – Pact 2020' project, a key part of which is the 'New Industrial Policy' action plan, outlined in this brochure.

Today, Flemish industry accounts for 80% of R&D expenditure in Flanders. It represents 80% of exports and provides employment for 371,000 people. However, the traditional

manufacturing and process industry, with its typical features of mass production and automation, is no longer able to strengthen the industrial fabric or generate sufficient employment opportunities and prosperity.

Propelled by globalisation, the long-prevailing paradigm of efficient mass production and a shift from labour to capital is swiftly becoming one that supports a new industrial community. Society is getting older, raw materials are difficult to come by and the climate is changing, so we need a sustainable, highly innovative offensive of industrial productivity that will fulfil society's future needs. The foundations of the new industrial enterprise lie in innovation focusing on smart specialisations that will enable valorisation through cross-sector collaboration, breaking down the boundaries that formerly existed. This transformation is already under way and will bring about a major turnaround, making intelligent networks and smart specialisations the backbone of

the economy.

Vision, people, knowledge institutions and companies who are not swayed by the issues at hand and have the courage to take the lead in creating tomorrow's industrial and economic identity and society are badly needed in today's climate of international economic turbulence.

The Flemish Government wants to help all companies work towards this goal, including the SMEs. It therefore organises a teaching platform, co-finances new transformation projects and promotes exports to new markets worldwide, to name but a few of the 50 activities aiming to encourage new industrial enterprise.

This brochure explains why industry needs to change, what guidance and support the Flemish Government is providing and what project portfolio this has already resulted in.

"We make no attempt to hide the fact that we in Flanders want to play a trailblazing role in the preparation of a new industrial age."

Kris Peeters
Minister-President of Flanders

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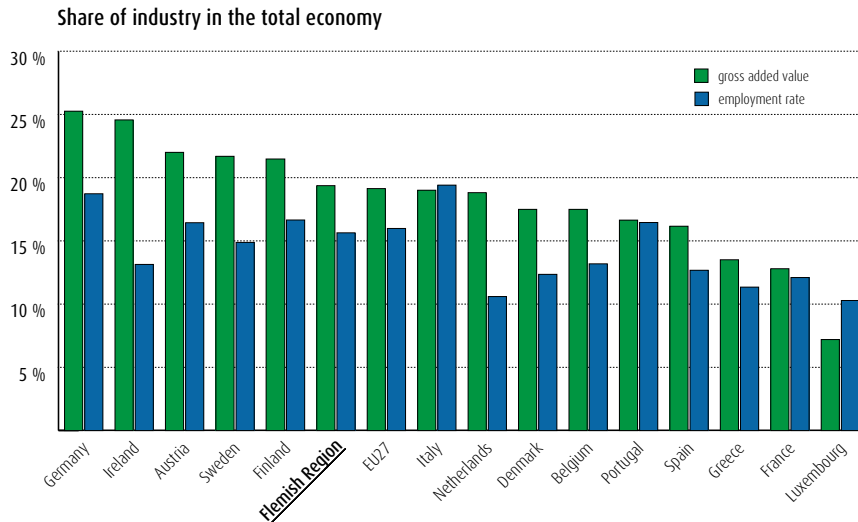
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FLANDERS - a thriving region thanks to high-performance industry

Encompassing northern Belgium, the Flemish Region is thriving. With a GDP per resident (€29,200 PPP in 2011) higher than the EU 27 or even the old EU 15 average, the Flemish Region's prosperity is largely a result of high productivity, entrepreneurship and the region's innovative strength.

Industry is especially important to the Flemish economy, with industrial sectors accounting for around a fifth of the gross value added. The Flemish Region therefore has more industry than the EU27 as a whole, and more than most of the EU's West European member states. Industry provides 15.6% of employment, which amounts to about one job in six. Flemish industry employed a total of 371,000 people in 2012, and the chemical, food and metal sectors are crucial to the Flemish economy in terms of employment and value added. Industry also creates some 200,000 jobs in Flanders' supplying service sector.





Source: Flemish Government Research Centre based on Eurostat; figures for 2010

The medium and high-technology industries create a significant amount of employment in Flanders. Industrial companies invest more intensively and persistently in R&D than other sectors, which results in innovative products, services and processes. This is also reflected in the high number of patents requested in Flanders. Flanders scores higher than the EU27 average on all three of the indicators listed above.

For decades we have focused on automation and increasing production efficiency to achieve greater productivity gains. Productivity in Flanders is considerably higher than in most other EU countries, so industry is highly automated. Flemish employees are motivated and deliver high-quality work. Almost forty per cent of them have completed higher education, which puts Flanders among Europe's top. The region is therefore starting off on a good footing, but

prosperity in Flanders and throughout Western Europe is in danger, not only because of the economic recession.



NEW INDUSTRIAL POLICY FOR FLEMISH AND FOREIGN ENTREPRENEURS

What's in it for me?

Flanders, the northern region of Belgium, has all the assets that you as an entrepreneur need to get the most out of innovation and bring new products to new markets. According to the EUROSTAT 2010 Community Innovation Survey, Belgium ranks third on the list of most innovative countries. The government strongly supports innovation and the system is tax friendly. Collaboration on innovative projects with partners from the USA, China and India is at a higher level in Flanders than it is anywhere else in the world.



"Nothing short of impressive"

The New Scientist qualifies Flanders' achievements in the field of biotechnology as "nothing short of impressive". The region has the highest number of biotech companies in the world in relation to the number of inhabitants.

According to an analysis conducted jointly by the Health, Science and Technology (HST) Group and Deloitte, Flanders is on the verge of becoming the European leader in the biopharmaceutical sector. The presence of big players like Syngenta, Bayer and BASF proves Flanders' strength in green biotech.

Federal tax benefits for R&D also imply the commercialisation of R&D output.

What can I do?

And then: location, location, location. Flanders has a central location in Europe, production centres and suppliers operate there, there is a dense transport network, a minimal total logistics cost and a flexible, multilingual, knowledgeable workforce. In Flanders, a lot of effort is being focused on value-added concepts and technologies, such as mass customisation and intelligent supply chains.

If you want to get things moving, you like to be at the centre and you are a team player. So you might want to discover Flanders and enjoy the benefits of a region that is thinking way ahead, preparing tomorrow's industrial activities today.

Please do contact us if you would like to find out more.

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The recession is not the only problem



The long-prevailing paradigm of efficient mass production and a shift from labour to capital was a big success in Flanders and created a lot of prosperity. At the same time, intensive industrial efficiency, especially since 1995, has caused a drop in employment.

Despite increased capital investments, Western industry's productivity has declined in relative terms. EU expansion, the Services Directive and the global open economy have enabled the emergence of new competitors who,

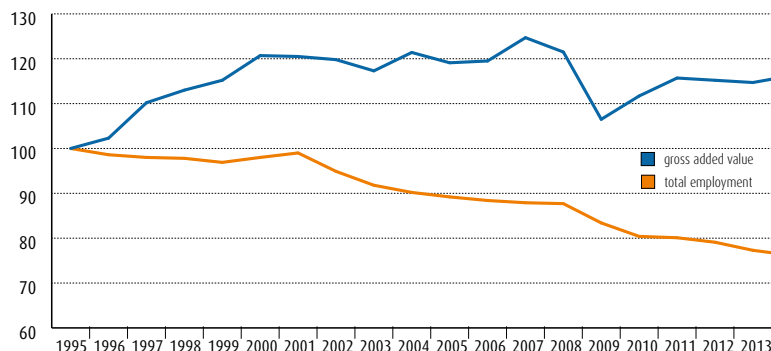
although initially seen to be lagging behind, have been catching us up with ease in recent years, often thanks to the 'dialectics of progress' phenomenon.

Industrial producers in growth countries are proving to be serious competitors. As a result, industrial activities have been transferred to low-wage countries and we have put up a successful defence in the form of significant automation. However, this strategy cannot prevent the weakening of the industrial fabric in the Western world, i.e. also in Flanders, and this will undermine the region's vitality.

Is it the crisis that is damaging the industrial world? Certainly, but there is a whole lot more to it than that. The American ambassador to the EU, William E. Kennard, said that the problems in the USA's motor industry are a wake-up call - the international crisis is not the manufacturing and process industry's only problem. Even if the economic situation were to recover quickly, a paradigm shift would still be a matter of urgency for the industrial world.

The time of 'one size fits all' is long gone, and the new globalised world has new requirements arising from the impact of aspects such as population ageing and the need for raw materials and energy sources, i.e. also for sustainable solutions. Smart total solutions are needed for global niche markets that require bespoke combinations of products and services, and industrial activities are an indispensable part of this. The industry that understands this will be the one that survives and grows.

Evolution of the Flemish Industry (indices, 1995 = 100)



The challenges of a new world



From now on, we need to identify our region's strengths and the way in which we ultimately want to use them to create economic valorisation. We need to ask ourselves what competitive positions Flemish companies can adopt in new growth markets and what smart specialisations can take the whole economy towards a new, sustainable economic productivity model. The challenges of the new world involve renewable energy, transport and mobility, affordable health care, materials and buildings, sustainable chemistry, life sciences and food.



With its New Industrial Policy, Flanders is one of the first regions to tackle this problem. The New Industrial Policy puts the European framework and the specific Flemish context into practice in a combination of actions aiming to valorise the region's economic potential. The New Industrial Policy is part of Flanders in Action, a much more comprehensive plan to make Flanders a top European region by 2020.

FLANDERS' NEW INDUSTRIAL POLICY

FLANDERS IN ACTION OFFERS: A STRONG LONG-TERM VISION, STRATEGY AND PROJECT

'Flanders in Action' is the plan for the future of Flanders. Flanders has the ambition of using this plan to become one of the very best European regions by 2020. The New Industrial Policy is a key part of Flanders in Action.

You may wonder whether things are not going so well in Flanders. Actually, they are. Compared to most of its European neighbours Flanders is and remains a thriving region. The Flemish people work hard, and the Flemish GDP and Flemish productivity are high. Flanders has a high-quality education system, a strongly developed infrastructure and a well-developed welfare state.

Seven breakthroughs

However, Flanders is facing the same challenges as Europe - the economic crisis, the energy issue, the ageing of our population, the arrival of new economic superpowers, the environment and mobility problems. These developments require a long-term strategy for Flanders.

To this end, 88 strategic policy objectives have been defined within the seven breakthroughs, with 337 associated key projects. Each policy area and every Flemish minister is involved. In selecting these projects, the Flemish Government is working on the transformation of Flanders into a sustainable, innovation-driven region in a goal-focused, integrated manner.

Transformation is the result of developments that strengthen each other at economic, cultural, ethical, technological, ecological, social and institutional level. Authorities, companies, knowledge institutions, socio-cultural organisations, environmental associations and individual people all have their part to play here. Transitions often take a long time, sometimes lasting over a number of generations, and they change the world. One example is the transition from an agricultural community to the industrial world.

Transformation requires time, which is why we need a mutual idea of the future and a long-term vision. This should inspire people to think and act further. Based on the shared vision and collaboration between all players, innovative experiments that we can

learn from are taking place. These experiments enable truly ground-breaking work.

Flanders works on the EU 2020 strategy

The Pact 2020 gives Flanders in Action the same time perspective as the new Europe 2020 strategy. Both strategic plans also display great similarities in terms of content. After all, the EU 2020 strategy's five key objectives are aimed at exclusive or at least shared regional competences. The Flemish Government has taken on full ownership within the context of the new Europe 2020 strategy. Flanders is one of the few regions to develop its own reform programme, and compiles progress reports for the European Union.



Flanders' NEW INDUSTRIAL POLICY



The New Industrial Policy has been in the pipeline for over four years. It started out with a Stakeholders' Meeting for Industry, which produced a white paper listing 50 actions and milestones. The plan outlines a new productivity offensive to restore our companies' competitiveness in a sustainable manner whilst creating employment. Implementation of the plan is now in full swing.

'Supporting' policy is vital

The Flemish Government's transformation policy is one that will encourage a clear vision of the new industrial community, but certainly does not seek to replace companies.

Companies create the economy and bring about new industrial activity. The policy provides guidance and support, brings players together and co-finance well-structured plans or roadmaps offering a confidence-inspiring prospect of economic valorisation.

However, certain preconditions must be fulfilled if this process is to succeed. The Flemish Government's supporting policy ensures that these preconditions are fulfilled.

For instance, we need to give education a new direction so that it develops the competences needed to enable new industrial activities. The licensing policy must facilitate entrepreneurs in taking part in industrial transitions. This supporting policy aims to turn all 'particle decelerators' into 'particle accelerators'.



Forerunners lead the way: Umicore

TRANSFORMATION IN PRACTICE: FROM RAW MATERIAL EXTRACTION TO RECYCLING

Flanders, the northern region of Belgium, has forerunners in industrial entrepreneurship - companies which move ahead and successfully tackle new requirements at global level. Umicore is an outstanding example. This company shows the way and inspires. The New Industrial Policy is not so much intended to support these pioneers as to involve the critical mass of entrepreneurs, including SMEs, in the switch to a new post-industrial community in which they have an important part to play.

Some say we are experiencing a third industrial revolution worldwide. Umicore is a compelling example of the turnaround. Formerly called Union Minière, it was once a polluting company that imported copper and zinc ores on a large scale and processed them to form basic materials for industry.

Over a ten-year period, Union Minière has transformed to become the modern recycling specialist 'Umicore'. The ultramodern electronic waste processing plant inaugurated by Umicore in 2012 was a first for the whole world. Umicore recovers rare metals from electric batteries in an efficient, environmentally and labour-friendly manner and makes them suitable for re-use.

Umicore achieves the majority of its income from clean technology. The company, whose head office is located in Brussels, manufactures products including catalytic convert-

ers to reduce pollution from cars, and also specialises in recycling technology.

Major reorientation

According to the Canadian research office Corporate Knights, that compiles a Global 100 index each year, the Belgian material technology group Umicore is the most sustainable company in the world. Belgium features twice in the index of sustainable institutions - chemical group UCB comes in at number 76. Corporate Knights investigated 4,000 companies across the whole world.

Umicore anticipated a worldwide development - climate change, the impending scarcity of raw materials and the need for sustainable, energy-efficient production. Umicore has maintained its strengths, but given them a new direction.

Flanders has more examples of companies, large and small, who have turned to a new industrial activity, entirely on their own initiative, whilst retaining their expertise.



Photo: Umicore

Crossing the valley of death

The transformation policy is one that aims to encourage. Companies will achieve new industrial activities with input from knowledge centres and the government's systematic support. Based on their complementary features, they group in 'clusters' to create 'smart specialisations', and this collaboration results in a roadmap. For the government this kind of roadmap is a confidence-building document that sets clear objectives in the process of achieving economic valorisation. Working with roadmaps offers a sound guarantee that public resources are being invested purposefully and successfully and are creating economic benefits. Cluster roadmaps are also a precondition in gaining substantial financial support in Europe. Using cluster roadmaps helps Europe and Flanders move away from individual project support towards structural pathway support. This support is also required to steer the company clusters through what is known as the valley of death – the transition from idea to roadmap and onwards to economic fulfilment on the market.

The diagram on the right shows both the supporting policy (outer frame) and the actual New Industrial Policy (inner frame)

Examples of supporting policy are innovative purchasing and tendering at all departments of the Flemish Government. The New Industrial Policy simplifies the regulations and encourages exports and foreign investments. The federal and European government are also involved here so as to create a level playing field.



SMART SPECIALISATION STRATEGY (S3) AND INNOVATION, THE BUZZ WORDS OF THE NEW INDUSTRIAL ENTERPRISE

What makes a strategy a 'smart specialisation strategy' (S3)? The Flemish Government's draft paper describes "A smart specialisation strategy for a specific cluster policy". Here the government refers to its desire to create a new industrial fabric in Flanders, as detailed in the New Industrial Policy.

In the concept paper, the Flemish Government emphasises the fact that the trick is now to develop smart specialisations in the fields where Flanders can make a difference. In order to succeed in this new industrial enterprise, companies must cooperate in 'clusters' with knowledge institutions, educational bodies, other companies and the government.

New needs

This is necessary because traditional Western industry is steadily losing clout in a globalised world. Incidentally, the Flemish Government's plan for the future, Flanders in Action, has listed the strengths of Flanders in relation to new needs worldwide in fields such as renewable energy, mobility, life sciences, health-care technology and food.

We are aware of the relevant developments worldwide - population ageing, scarcer raw materials and the progressive need for sustainability. The European Union is therefore asking its member states to develop smart specialisation strategies. The Flemish Government has developed a New Industrial Policy for the transformation of its industry, and this makes it a forerunner in Europe.

Only those who cooperate can achieve results

Given that high-performance industry is crucial to the preservation of employment and prosperity, the Flemish Government is investing in the creation of innovative 'clusters'. Clusters work on the basis of open collaboration by different partners. An 'every man for himself' approach is fatal in the context of the new world and industry of the future, as such an approach results in fragmentation of resources, overlapping and missed opportunities. The Flemish Govern-

ment feels that only those who cooperate and opt for innovation resulting from the complementary strengths of various participants will be able to survive in the new industrial enterprise. The Flemish Government opts for the New Industrial Policy, whilst concentrating on 'smart specialisation' in clusters.

Good use of public resources

Clusters are important because they create products that give Flanders a strong international position on growth markets, from idea to marketing. Trial projects are being set up this year and next year for roadmaps for smart specialisations in clusters.



Photo: Umicore

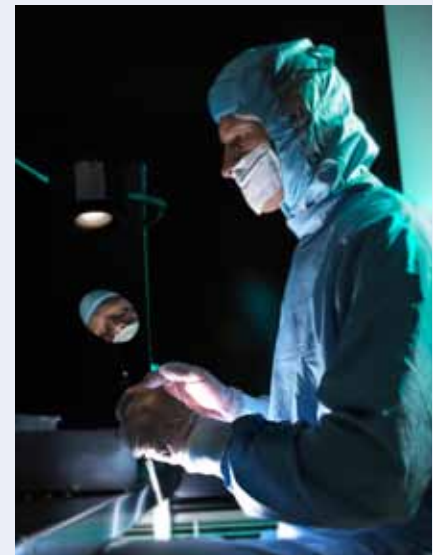


Photo: Umicore

DSP VALLEY: SMART PRODUCT DEVELOPMENT IN CLUSTERS

DSP Valley is the cross-border business cluster involving 80 high-tech companies and knowledge institutions from the region on the Leuven-Eindhoven axis. Together, they develop 'smart' products and systems for fields such as health care, energy efficiency and mobility. DSP Valley incorporates open innovation in collaborative ties between participants in a cluster. In light of the success achieved over the past 15 years, DSP Valley is set to widen its target groups and activities under the working name DSP Valley 2.0. It has obtained the support of the Flemish and European authorities for this.

DSP Valley shows us today what our economic fabric will look like tomorrow. The New Industrial Policy strives to achieve industrial activity in the form of an extensive network in which companies, research bodies and government services are closely interconnected and where there are no longer any boundaries between sectors, companies and knowledge institutions.

Nano-electronics

DSP Valley 2.0's cluster operations aim for economic valorisation. The members of the DSP Valley cluster each have different strategic collaborative ties with each other. They comprise an ecosystem that covers the whole value chain. This approach fits in fully with European policy and the Flemish New Industrial Policy, where clusters are strongly gaining favour as a tool for regional economic development with local anchoring.

The core of DSP Valley 2.0's target group consists of companies and knowledge institutes that work on Digital Signal Processing (DSP) micro/nano-electronics, for image and sound processing, for communication and for navigation technology. DSP Valley 2.0 also wants to encourage collaboration between technology developers and technology producers in the broader target group. In order to valorise the technology developed and produced on the market, the target group is being extended to include product developers who can make smart products thanks to DSP technology. They do this through means such as smart health systems, smart home, smart machines and smart mobility.

Long-term roadmap support

One new aspect is the strategic medium to long-term support with the development of roadmaps. This establishes the cluster members' interests on strategic research agendas at both Flemish regional level and European level in the future Horizon 2020 programme.

DSP Valley therefore uses a combination of spin-offs and collaboration between the research world and the business community. It makes the Triple Helix model a reality. Knowledge therefore finds its way towards economic valorisation more quickly through new companies.



designing smart products

ZEETEX

CROSS-SECTOR INNOVATION AND COLLABORATION IN A PRE-CLUSTER PROJECT

ZeeTex is what we call a precluster. Flemish maritime companies use innovative textile products for maritime applications under the auspices of ZeeTex.

Flanders and northern France have a major maritime industry with operations across the whole world. The textile industry is also a key economic sector in these regions. ZeeTex strengthens the Flemish maritime industry's competitive position by enhancing it with innovative concepts from the textile industry.

Thanks to the increasing operation of activities at sea, the marine and maritime industries are an attractive field of application for flexible and inflexible textile and composite materials. Different textile and textile-based products are needed in hydraulic engineering, maritime transport, energy production and for clothing. The maritime sector is one of the most dynamic sectors with extraordinary growth opportunities for technical textile materials.

The ZeeTex project is a partnership between Flanders' Maritime Cluster, Centexbel, Up-TeX and Pôle Aquimer, and has a total budget of €665,636.83. It is a platform for economic collaboration between companies from the maritime and textile sectors in Flanders and northern France. The parties concentrate on four subareas - safety and protection in maritime occupations, protection and organisation of the coastline, fishing and aquaculture, and shipping and ship building. ZeeTex is now well on the way to becoming an attractive European 'Sea & Textiles' cluster.



The four pillars of the NEW INDUSTRIAL POLICY

1. Investing in labour organisation

A competence and labour market policy that takes into account the ambitions of the new industrial enterprise is crucial for transformation.

Organisation of the labour market, encompassing workplace learning, wage policy and the relationship between supply and demand on the labour market, is a field which the social partners and federal government need to be active in. They must ef-

fectively organise the labour market in such a way that new industrial activities can bring prosperity. In the 'career agreement', the social partners commit to the transition from job certainty to career certainty.

Enterprises and clusters of companies also measure the level of innovation in their labour organisation. Flanders' Synergy encourages, promotes and launches these innovations, which means that they use

scientific research, create new labour models and develop insight and tools, thus increasing efficiency and creating flexibility and higher-quality jobs.

Furthermore, Flanders is dealing with the issue of whether there are enough employees on the labour market with STEM (Science, Technology, Engineering and Mathematics) training to meet demands from industry and whether STEM graduates' competences sufficiently match demands from the labour market. Both higher education and compulsory education are involved in this matter. Although the number of STEM graduates in higher education is on the up, STEM is losing ground when compared to other subjects. This may have repercussions for Flanders' competitive position in Europe.

The New Industrial Policy aims to channel more students towards industry and attempts to rectify public perception.

2. Investing in the economy

The Flemish Government uses what is known as an entrepreneurship strategy, which means that it encourages and supports Flemish companies in their transition towards a place in the new industrial fabric. It does this in ways such as providing strategic advice financed from the SME portfolio. The SME portfolio works through an accessible, interactive web application. Each year entrepreneurs receive 15,000 euros in subsidies from the portfolio for drawing up a strategic transformation plan.





Calls of 'The Factory of the Future' are aimed at precluster projects. These calls enable companies and other partners in the early stages of clustering to participate in the teaching platform to find synergies and improve their collaboration. Last but not least, the New Industrial Policy finances and guides the fully-fledged clusters resulting from this process.

The TINA Fund ("Transformation, Innovation and Acceleration Fund") has 200 million euros of capital investments in cluster projects. It is therefore an investment fund that the Flemish Government uses to support clusters who already have a cluster roadmap. It steers them through the Valley of Death and maximises the opportunities for valorisation. The ultimate goal is economic growth.

3. Investing in innovation

Innovation is the main driving force behind the capacity to transform. The New Industrial Policy features activities that promote sustainable business practices in the chemicals

and manufacturing industries. It strengthens the position of lead plants, intensifies the involvement of strategic research centres and ensures that regulations drive innovation.

The Flemish Government wants Flanders to invest 3% of its GDP in R&D by 2020. This is set out in the EU2020 strategy and is a condition that enables new industrial activities to emerge from new knowledge. There is a path for growth for this legislation, despite the difficult budgetary circumstances and disappointing economic performance. Total R&D expenditure in Flanders amounted to 2.4% of the GDP in 2011. Flanders is therefore well on its way towards achieving its ambitious innovation objectives by 2020.

The Flemish Government is also collaborating on strategic world class research centres such as IMEC and VIB. It encourages collaboration that results in innovation in indus-

trial sectors. Transformation and innovation platforms such as FISCH for the chemicals sector are examples of this. Advisors from innovation centres are on hand in the provinces to help more small SMEs on the road to innovation.

4. Investing in infrastructure

Last but not least, the right network infrastructure is crucial for transformation processes. This applies above all to Flanders, a region with a strategically advantageous location that it needs to make the most of. The New Industrial Policy ensures investments in research and innovation infrastructure.



Photo: Umicore

NEW INDUSTRIAL POLICY IN PRACTICE

“The future is already here – it’s just not very evenly distributed”

(William Gibson)

The New Industrial Policy now contains a richly-filled portfolio of sector-specific and cross-sector projects for the Factory of the Future. Here are a few examples.

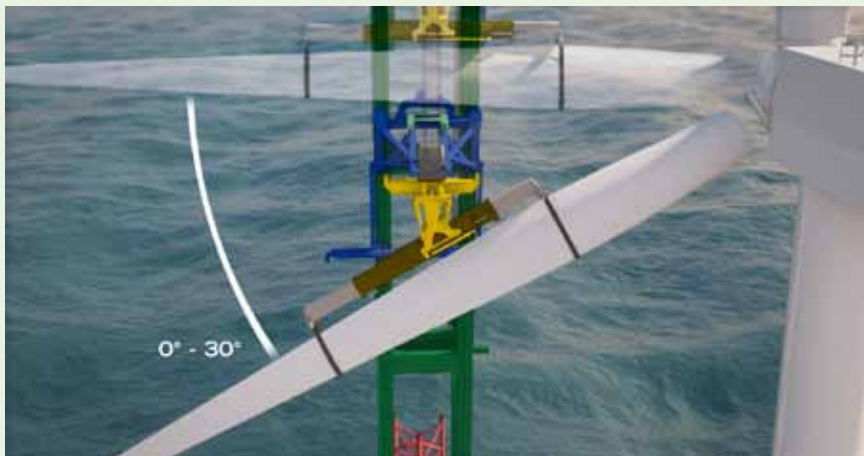
Flanders Wind Farm - Offshore Wind Test Site

Transformation pathway - Study - 12 months

Today Flanders is home to several global players in the offshore wind energy value chain. More over, a wide range of suppliers has come into being. These are companies who have either developed very specific, often highly knowledge-driven, activities in a certain niche area, or who are taking their first steps on this market. This includes both companies operating in the production and development/construction of offshore wind farms (investment phase) and companies focusing on the operational phase (opera-

tion and maintenance). Today, employment is estimated at 3,175 direct jobs in 2009, with the potential to grow to a sector with 13,000 jobs in 2020 (source: 2009 Agoria study). One condition is that Flemish companies must be able to retain and/or acquire a significant market share.

Test sites in real circumstances (offshore) and on an industrial scale play a key part in this further growth. The Flanders Wind Farm – Offshore Test Site study aims to transform Flemish industry by maximising the industrial return Flanders gains from the offshore wind energy market's international growth, by setting up a Flemish state-of-the-art offshore test site (knowledge anchoring and commercial references) with an integrated, specific approach across the whole value chain.



SYMBIOSIS Flemish Matchmaking Platform for the sustainable valorisation of auxiliary resources

Transformation pathway - Business approach - 24 months

“SYMBIOSIS is finally creating a matchmaking platform service that is supported by all stakeholders in Flanders for the valorisation of, initially, industrial waste and auxiliary flows, and at a later stage, all other resources (residual heat, (innovation) infrastructure, logistics, back-up materials, personnel, etc.). SYMBIOSIS is creating a permanent Flemish Platform that must be as independent as possible of public (subsidy) revenues. It will create major international leverage with respect to EU programmes and beyond when it comes to resource effectiveness (OECD and EU Horizon 2020 Resource Management projects). Various EU countries also have ambitions for an ‘Industrial Symbiosis’ department (KIC) at the European Institute for Technology, which SYMBIOSIS will be able to participate in.”

This picture symbolises the ambition of Flanders to develop into a top European region. A consortium has been set up with TINA fund support to develop a method that will facilitate the installation of wind turbines at sea, whilst making it less expensive and, most importantly, more reliable. In so doing, Flanders is bolstering its position as a wind energy knowledge centre.



Open innovation cluster for the transition to a bio-based economy (BIOCLUSTER)

Transformation pathway - Business approach - 36 months

BIOCLUSTER is intended for the transition of Flemish industry to a sustainable, bio-based economy. The project is supported by Ghent Bio-Energy Valley, FlandersBio and essenscia and receives technological support from the Bio Base Europe Pilot Plant. This project mainly concentrates on companies from the agricultural industry (sugar industry, starch industry, fat processors, vegetable oil industry), technology developers (industrial biotechnology, green chemistry) and the traditional chemical sector.

The project centres on the development of new economically and ecologically cost-effective value chains for product groups to play a key part in the bio-based economy - bioplastics, biodetergents, biomaterials, biosolvents and biolubricants. Cross-sector work will be performed in thematic working parties, within which the companies can look for new value chains that can be implemented in the short term and that offer added value for the participating companies.

The project is supported by a broad range of awareness-raising activities concerning the bio-based economy, and the results achieved will be widely disseminated through different communication channels. The presentation of success stories from the project should motivate other companies to make the switch to the bio-based economy too.

Hydrogen

Transformation pathway - Study - 18 months

The use of sustainable hydrogen in early-market applications such as public transport, in logistics and for the “balancing” of renewable electricity are attracting increasing international attention. Japan and the United States are the forerunners, but Europe is also deploying significant resources to keep up with these developments.

When it comes to hydrogen, Flanders has several unique technology companies that are nicely spread along the value chain, right from the production of hydrogen to end use. Accordingly, the world's largest fuel cell plant working on residual hydrogen (1 MW) and a unique filling station for sustainable hydrogen recently started operating using unique Flemish technology.

In light of the international attention for hydrogen and the starting position in Flanders, hydrogen offers rich perspectives for becoming a European leader in Europe in this field, provided that a number of hydrogen lead markets are examined in thorough detail. This study includes roadmapping for the ‘logistics’, ‘public transport’ and ‘balancing renewable electricity’ markets for the period up to 2020, from which the ideal lead cluster is derived, with Flemish lead plants being defined and activated in turn.



A study on how this technology development could be anchored in Flanders based on a market-pull strategy and implementation scenarios for the roll-out on the home market for hydrogen comprise the core of this study.

The study must turn the hydrogen advantages already present in Flanders into a unique economic activity in the field of sustainable development in Flanders and further afield.

How do we achieve economic valorisation?

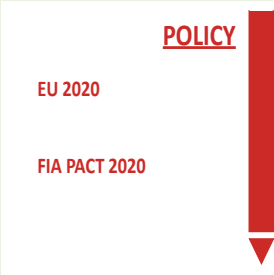
There is not point in innovating just for the sake of it. Innovation must result in economically cost-effective activities that generate profit, prosperity and jobs. Three elements determine what a region needs to focus on when developing new industrial activities in relation to new global requirements.

In the phrase 'new industrial enterprise', 'new' refers to looking for intelligent, innovative specialisations (smart specialisations) that a region can use to make a difference in a globalised world, in economic terms.

This transformation from a strategy based on cost-efficiency to a strategy of innovative niche products for new markets requires a sophisticated and carefully planned productivity offensive. This offensive is based on collaboration between companies, knowledge institutions and the government, known as Triple Helix Clusters.

These clusters bundle distinguishing capacities, competences, experience and resources and develop new value chains for innovations that the market is open to.

Top down: EU 2020, ViA and Pact 2020



OBSOLESCENCE AND WELFARE	SUSTAINABLE ENERGY	SUSTAINABLE MOBILITY	NEW RESOURCES	SUSTAINABLE FOOD
FLANDERS' CARE	RENEWABLE ENERGY & SMART GRIDS	SMART MOBILITY	SUSTAINABLE MANAGEMENT OF MATERIALS	FLANDERS FOOD

The New Industrial Policy in Flanders fits in with Europe 2020, the EU's growth strategy for the coming 10 years. The EU needs to become a smart, sustainable, inclusive economy in a fast-changing

world. This means that the EU and its members states and regions must cooperate on increasing employment, productivity and economic cohesion. The EU has set five ambitious objectives for employment, in-

novation, education, economic cohesion and climate/energy that it wants to achieve by 2020 and each EU country has determined its national objectives in each of these areas. Concrete measures at EU, national and

regional level support the strategy. With Flanders in Action and the Pact 2020, Flanders has developed an operational strategy all parts of Europe 2020. Accordingly, the European 'ageing and prosperity' objective

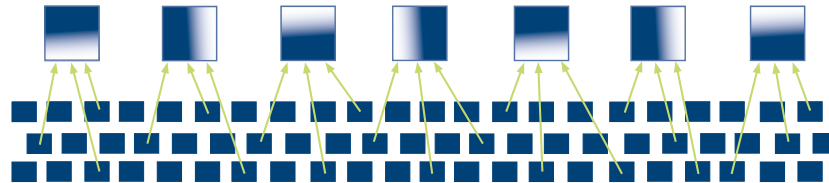
corresponds with 'Flanders' care', which applies innovation and entrepreneurship to create affordable health care.

Bottom up: Entrepreneurs create new industrial activity

PRECLUSTER PROJECTS

PARTICIPANTS IN NIP

ENTREPRENEURSHIP



Whilst the policy can formulate objectives and make every effort to ensure that the region achieves them quickly, the initiative, innovation and vigour must come from the companies and their stakeholders. A key condition for success is 'smart specialisation strategy' or S3, specialisation to the power of three.

Regions do need to determine their own specialisations, because not every region

has the advantages needed to take on the world's competition in every field. Regions must focus their activities on products and services offering solutions to the world's new requirements - population ageing, climate challenges, the issue of energy, health care, food, rare raw materials, etc.

In order to succeed with this complex scenario, companies must seek complementary collaboration with innovation bodies, train-

ing institutes and companies from other sectors, so as to achieve production and marketing of smart solutions together. Barriers need to be broken down, between companies from different sectors, between the government and companies and between companies and training institutions.

NIB unites players in projects known as pre-cluster projects. Some 50 such projects are currently under way.



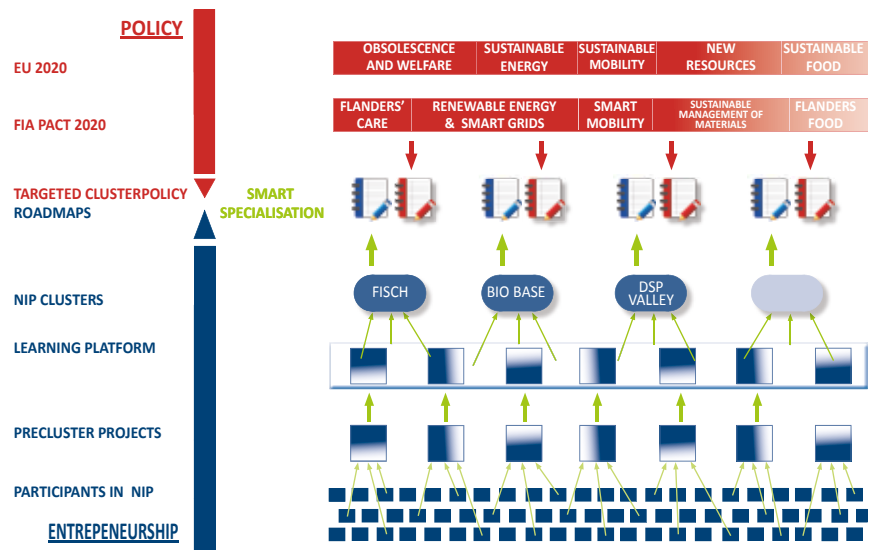
The participants in pre-cluster projects meet up on the teaching platform where they develop a smart specialisation together with ideal complementary partners. Once they have achieved this, they continue as fully fledged clusters.

These clusters must create roadmaps detailing the role all players need to play in the cluster in order to achieve the roadmap. The New Industrial Policy supports the way in which the clusters are created and the way they work, as well as the compilation of cluster road maps, through governance, pilot projects and open manufacturing campuses.

Cluster roadmaps are not just any old roadmaps

The roadmaps in the New Industrial Policy involve a cluster pathway. They are not the roadmaps of individual companies working on innovative product development - cluster roadmaps must detail the pathway to be followed in phases by all participants in the triple helix cluster, and not just by a single participant. The cluster roadmap indicates which participant must achieve what and when, so the whole cluster can complete their journey on the road to valorisation. The cluster roadmap shows the strategic interplay between the different actors. A roadmap includes every stage of research, ranging from concept to end product, and any recycling and marketing.

The cluster roadmap shows the road to valorisation, a flourishing economic result through what is known as the “valley of death”. Such a roadmap gives the various players an idea of their role in achieving the goals, but also above all a perception of the economic benefits they can achieve by collaborating in the cluster. The ultimate goal is business, prosperity, employment and putting Flanders in pole position in the current globalised world.



NEW INDUSTRIAL POLICY IN BRIEF

The Flemish Government's New Industrial Policy is a partner for industry in the far-reaching transformation that our industrial activities are undergoing. The New Industrial Policy offers guidance with financial support, subsidises innovation and promotes exports.

The Flemish Government's New Industrial Policy supports the transformation of industry with **50 actions**. A strategic teaching platform unites useful examples and experience. Forerunners in the new industry create a network that represents a reflection of the Factory of the Future.

Projects increasing the companies' transformation capacity through innovation receive support. The New Industrial Policy brings entrepreneurs, researchers and authorities together to develop cluster roadmaps for smart specialisations for new markets.

Generate employment

The challenge posed by the new world is strongly associated with how we pioneer new health-care technology that helps buffer the ageing of the population. This is strongly linked to how we make knowledge from one field, e.g. aerospace, create value in another field. The challenges now involve renewable energy, transport and mobility, materials and buildings, sustainable chemistry, life sciences and food.

The New Industrial Policy supports entrepreneurs in Flanders and the employment they generate. The New Industrial Policy helps entrepreneurs in the pursuit of smart specialisations that will become logical solutions and generate prosperity and employment in a new world.

The New Industrial Policy helps entrepreneurs obtain financial support for breakthrough projects. The TINA fund has 200 million euros for the marketing of transformation projects, and there is also an SME portfolio.

Transition in the New Industrial Policy also involves the transition from job certainty to career certainty. This transition requires young people to be attracted to careers in industry, so secondary school education also needs to change.

The industry of the future is already present in Flanders, but it is still thinly spread. The third industrial revolution is upon us and time is short. The New Industrial Policy is preparing the ground. The entrepreneurs must sow the seeds. Flanders will reap the benefits.



Moderna Products of Izegem was awarded the 2012 SME laureate. The company produces cat litter trays and exports them to 60 countries. Moderna Products maintains careful control over the whole of its production chain, so as to guarantee maximum quality and efficiency. Moderna Products is also an example of a new industrial enterprise, because it responds to new needs - urbanisation, less social cohesion and more solitude. Permanent innovation requires production to take place near the innovation. Photo: Moderna Products



NEW INDUSTRIAL POLICY FOR FLEMISH ENTREPRENEURS

What do I need to do?

- I determine whether my industrial operations require innovation
- I determine what innovation I need and which partners (other companies, knowledge institutions, government) can help me
- I commit to a precluster project
- I discover my opportunities and look for a smart specialisation strategy
- I find a place in a fully-fledged cluster and register for the cluster roadmap
- In this process, I make use of all the support the Flemish Government offers me



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