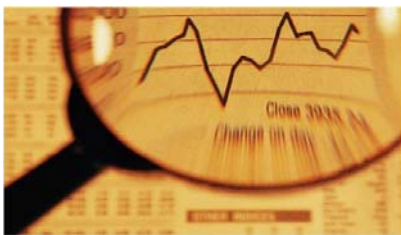


## TRANSITION MANAGEMENT

## INSPIRING THE CHANGE TO A SUSTAINABLE FLANDERS

Transport, energy supply, agriculture and food, water management ...: many sectors in our society show symptoms of ‘unsustainability’. To address these structural issues, ‘transitions’ are needed: radical changes in so-called central social systems. VITO’s expertise can help in obtaining insight into transitions related to energy, transport, chemistry, building and housing, and in initiating and stimulating such transitions. “Our knowhow can help facilitate transitions in society, and thus contribute to the sustainable Flanders of tomorrow”, says Frank Nevens, project coordinator at VITO.



## Outside the box

Flanders is a well organised and prosperous region. Nevertheless, our society is running up against the limits of its systems, systems moreover that are not limited by geographic borders. Climate change, the financial crisis, the depletion of natural resources, unequal distribution of wealth... . These are symptoms of complex and persistent problems that are intertwined in the social order of the 21st century. There is an ever growing awareness of the need for a drastic change towards a more sustainable society, and therefore, ‘transitions’ are needed: structural societal changes that result from mutually influencing and reinforcing developments in the areas of economy, culture, environment, nature, technology, policy ...



Transitions are not possible without system innovations: changes in our energy system, our mobility and transport system, our way of producing and consuming, of living and building ... Transitions have occurred in the past, for example in shifts from coal to petroleum and natural gas as primary fuel. Such a transition also implied major innovations related to distribution infrastructure, residential building, (domestic) appliances... a true system swing.

Technological innovations are part of the solution for sustainability problems. Lead-free petrol and catalytic converters do reduce the impact of automobiles on the environment. However, the approaches we apply today are too limited to address the very root of the problems. We need to dare to consider alternative possibilities, solutions outside the box: cars on (green) electricity or biofuels, behaviour monitoring and management, public transport, other organisational forms that involve less travelling .... Transitions require not only technological innovation; they also ask for a fundamentally different look at structures and regulations, at behaviour and procedures, at business models and organisational settings.

## How to change systems

“Typical for a transition is that the end point is not clearly set at the beginning, but rather becomes increasingly clear in the exploration that occurs along the way”, says Frank Nevens. “Because it brings about a drastic transformation, a true transition takes a long time – several generations – and in theory passes through different phases. In the first place, it is important to thoroughly analyse the current societal system and then formulate an inspiring vision for the future. Then transition pathways can be mapped: which major routes



allow us to achieve the desired level of sustainability? Experiments are then required: concrete elaborations of the considered solution pathways, with a major emphasis on ‘learning’. During the entire process, it is best to closely monitor the proposed innovations, actions and changes. Because transition requires far-reaching commitments and innovations, there is a need for so-called arenas. These are innovation networks in which free-thinking front runners with diverse backgrounds can and dare to devise possible solution paths and visions. Such arenas also initiate the spread of ideas throughout the different segments of society. Transition in essence is a process, often a long term one, with sufficient momentum to effect radical change of the system in question.”

## From scientific partner to transition guide

VITO has in house expertise to scientifically support and facilitate the complex processes of transition management. The organisation develops technologies, models, scenarios and assessment tools required during specific phases of transition processes, to support them and help them move forward. “Think of our new energy technologies, energy and emission modelling, climate scenarios and our knowledge of best available techniques, sustainability evaluations and the integrated analysis of products and processes ...”, illustrates Frank Nevens. “This unique knowledge and expertise is of immense value to the transition process that we will be experiencing today, but particularly tomorrow. This body of knowledge is extremely useful when thoroughly analysing the system’s environment, exploring transition pathways and monitoring sustainability. We also intend to further expand our expertise in these domains in the years to come. Here is perhaps a new task reserved to VITO: that of source of inspiration, facilitator, guide in the transitional dynamics. A task that will not be possible without compliant radical changes in our own organisation. It will necessitate an ‘internal transition’ with respect to resources, competences, collaboration ....”

## Focus on energy and climate

“We are investigating how we can concretise the contribution VITO - as a knowledge institute - can make to sustainability and future visions, and based on these, how we can set up transition arenas. Thus, for example, with our comprehensive expertise in the area of energy systems, we are perfectly placed to set up a process for an energy transition. This could be along the lines of the transition processes already underway in Flanders concerning sustainable housing and building, and sustainable materials management.”

No need to explain that such an energy transition, for that matter, is needed more than ever. Different systems of energy supply and use are essential for a sustainable society. This transition implies the switch to clean, affordable energy that can be continuously delivered. “Our knowledge and expertise can contribute significantly to this process”, believes Frank Nevens. “Energy, after all, is a prominent VITO knowledge domain. Our areas of expertise clearly include the scientific underpinning of climate and energy policy with technical/economic energy models, environmental cost models and scenario projections. This expertise is already supporting the (implementation of) European and Flemish goals in the area of climate and energy. And this expertise becomes even more relevant in the view of an energy transition. .. For example, for the Environmental Study 2030 of the Flemish Environmental Agency, VITO experts, with the help of their Environmental Cost Model, calculated how energy use and emissions from industry and the energy producing sector might look like in 2030. This is a nice example of how the expertise now present in VITO is already very relevant to transitions. This will only increase in the future.”

## Sustainable mobility

“We can also contribute quite a bit to a transition towards sustainable mobility. For example, our instruments and computer models already enable to analyse the energy consumption and environmental impact of vehicles and transport flows, and to calculate the impact of specific policy choices such as sustainable fleet management. Here again a role is reserved to VITO, to establish and communicate inspiring visions on sustainability.”

The Belgian federal government, for example, asked VITO to study the environmental performance of its vehicle fleet and to develop scenarios for a more sustainable fleet; and, the same federal government wished to know whether the pool vehicles of a number of departments could be recombined into a single fleet in order to enable car sharing. VITO identified the potential for improvement and formulated a series of recommendations on how to adapt the federal fleet, on ‘ecodriving’ ... : experiments in themselves within a broader transition story.

## VITO stimulates and inspires transition processes

Sustainable housing and building is a priority in VITO’s activities. “Sustainable housing, for example, is a domain that brings together diverse environmental aspects (and other facets of sustainability): water, raw materials, indoor air quality, waste, materials .... With the so-called multi-criteria approaches of its recently established Sustainable Housing and Building Task Force, VITO can offer an integrated look at transition pathways in this ‘sector’. This service can provide unique and extremely valuable support to companies and organisations that wish to engage in sustainable construction in a scientifically based way. Systems thinking is vital to transition stories. VITO's transition activities will initially be developed by its research unit Transition Energy and Environment. In the past months, this dynamic group has been developing a strategy to integrate the transition concept in its research. The goal is to incorporate the different, typically transition related activities in a number of core domains that are already covered by VITO knowledge and expertise.

“And finally this: transitions are complex processes. So you never start out alone: VITO intends to stimulate and inspire transitions in its own organisation, in Flanders and abroad, by looking for appropriate network nodes and possibilities for collaboration and complementarity. Only when knowledge institutes, governments, industry and social organisations assume their part of responsibility and combine forces, a sustainable society becomes a viable proposition”, Frank Nevens concludes.