



rev3

A 2022-2032 foresight

Executive Summary

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A regional foresight exercise conducted in collaborative mode

After ten years of continuous development of rev3, the need to reconsider the basics became obvious. This need was accentuated by a profoundly modified context, marked by the acceleration of global warming, by the observed loss of biodiversity, by threats to resources and by a violently shaken geopolitical context.

The rev3 Community suggested that a new regional foresight exercise be carried out for rev3, covering the next ten years (2022-2032).

To respond to this request, a group of ten experts from various regional structures (Regional Council, CCI, Ademe, Chamber of Agriculture, etc.) met between March and September 2022. Twelve meetings were held to define a method, identify priority topics, agree on findings, propose new ideas and build scenarios.

The need to "get out of one's comfort zone" was strongly emphasized.

Two scenarios, which should make it possible to meet the objective of carbon neutrality in 2050, have been built. A narrative, possible among many others, has been imagined.

Renewed objectives for rev3

A new formulation of objectives was required:

- a) Drawing a vision and perspectives that will allow us to significantly change the trajectories of GHG emissions in eight years and achieve a sustainable (in the sense of the 17 United Nations development goals) and carbon-neutral society by 2050.
- b) Integrate the availability of resources, the preservation of biodiversity and the impact on health into all our actions.
- c) Pursue the ecological and economic transition throughout the Hauts-de-France region by supporting operations that create activity and jobs.

Lessons learned from national scenarios

At the beginning of 2022, several national scenarios were available: Ademe, RTE, Negawatt, Shift Project. It quickly became apparent that these scenarios had common points, lessons on which their authors agreed.

Five of them seemed to be particularly relevant:

- The time to act is now,
- Efficiency and sobriety will guide our steps
- Adaptation is becoming an imperative (industry, forests, agriculture...)
- A great development of renewable energies is essential
- We must rely much more on the living.

To which we have added:

- We will have to get out of our "comfort zone", accept risk taking.
- To co-construct with all the actors is an imperative

The choice of two scenarios

About three-quarters of the themes considered as priorities in the Hauts-de-France region were covered in the four scenarios (S1 to S4) of the Transition(s) 2050 foresight study conducted by Ademe.

Given the amount of information available and the quality and consistency of these scenarios, it was decided to use them to build the rev3 foresight study.

The constrained frugality of S1, and the socio-economic assumptions on which it is based, appeared to us to be difficult to retain, with an undoubtedly problematic social acceptability. The S4 scenario is based on technical bets, some of which are very risky, is not very efficient in terms of GHG emissions and remains based on an approach to consumption that is difficult to defend today.

Consequently, based on the S2 and S3 scenarios, two regional scenarios have been built for the next ten years :

From S2 we built S2@HdF: Cooperation, Coordination, Co-development

From S3 we built S3@HdF: Green Technologies and Innovations

Ten themes have been selected and developed:

- Five "development frameworks": adaptation to change, governance, lifestyles, the relationship with technical progress, and the infrastructure of living organisms
- Five "sectoral declinations": buildings, energy, mobility, industrial production, agricultural production.

Three paradigms and three questions

Because they did not appear explicitly in the Ademe's work, but were part of our discussions, we have identified three paradigms. They allow us to envisage an evolution of rev3, an inflexion of the path and may shed light on subsequent work.

These are the techno-centered paradigm, close to the original vision, the just transition paradigm, which makes it possible to integrate the social component of transitions, and the living-centered paradigm, which proposes a "step aside" towards nature, towards the "non-human" living realm.

Similarly, three fundamental questions have been identified:

- Is it better to rely on an optimistic vision of the future or on a pessimistic one?
- Will we not run out of time?
- Isn't digital technology, so indispensable, the place of great ambiguity?

Keys for reading

Three subjects have been the subject of a specific approach, prior to the scenarios:

Industry through the constraints it may have to face in a world where sobriety (energy, materials, water...) will become very prevalent.

Agricultural production, another asset of our region, which is currently subject to all kinds of constraints, challenges and imperatives.

The development of what we have called a living infrastructure, a proposal that does not exist in the work of the Ademe, but for which our region has a lot of assets.

2022-2032 synthetic vision of the path followed in the two scenarios

		S2@HdF Cooperation, Coordination, Co-elaboration	S3@HdF Green technologies and innovations
5 development frameworks	Adaptation	Development of ecological engineering Advanced culture of anticipation Sharing of territorial data Return of nature in the city	Adaptation = research and innovation Development of a symbiotic economy Better management of water resources Experiences of "smart cities"
	Governance	Territorial anchoring and local markets Development of industrial ecology Collaboration between groups of actors Strong social acceptability of rev3 New economic models	Support for R&D and business Competitive regime Importance of groups of actors EPCI, communities and associations are less present
	Lifestyles	Primacy of the social link Decrease in material consumption Sobriety better and better lived Success of the economy of functionality	"Greener" consumption but still sustained, less sober Numerous contributions of digital tech. Social divide remains Large cities are favored
	Rapport au progrès technique	Importance of stakeholder collectives The use of technology is questioned Growth of the societal part in rev3 Development of bioeconomy	Continuation of the rev3 scheme Internet of Things, Internet of Energy Significant development of solar energy Progress in energy efficiency
	Infrastructure for living organisms	Strong involvement of communities Restoration of ecosystems Strong impact on development projects Improvement of biodiversity	Research in ecological engineering (including CEEBIOS). Greener urban development Increasing consumption of biomass
5 sectoral declinations	Buildings	In new construction: shared spaces BBC renovation = 60,000 homes/year Renovation: tertiary and educ. buildings Intensive use of bio-sourced materials Effort to train workers	Massive retrofit with lower performance Deconstruction-reconstruction Digital mock-up Strong development of the circular economy in deconstruction
	Energies	Declining demand, adapting supply Growth of photovoltaic Decrease in thermal based electricity Strong growth in renewable heat Development of green hydrogen	Slight decrease in gas demand High electricity demand Offshore wind power in Dunkirk Strong photovoltaic development Strong demand for green hydrogen
	Mobility	Drop in the use of private cars 10% modal shift Increase in occupancy rates Significant decrease in carbon intensity	Technical progress (decarbonation) Mobility needs continue to grow Financing of infrastructure more difficult Accelerated renewal of the fleet
	Industrial production	Deep transformation of the industry Material efficiency / Energy efficiency Circular economy growth Intensive support policies Strengthened inter-company cooperation	Decarbonization of the energies used Integration of CO ₂ capture and recovery Progress in energy efficiency Progress in material efficiency Regional support for innovation
	Agricultural production	Improved regional competitiveness Marked change in demand Cattle population - 20% but more quality Methanization 6 TWh Agroforestry is developing	Production orientation remains strong Biomass energy in strong growth Dynamic livestock, quality on the rise Generalization of low carbon labels Careful and reasoned soils management

5 issues for discussion

Issue #1

What is the reality of decarbonization in Hauts-de-France?

Whether it is the SNBC, which sets a goal of carbon neutrality for France by 2050, with a 45% reduction in 2030 compared to 1990 emissions, the European Union's roadmap (-55% in 2030) or the work of the IPCC, which concludes that emissions must begin to decline sharply to reach a peak before 2025 and be reduced by 43% by 2030, the ambition is great, the convergence is strong and shows that 2030 (or 2032) will be an important point of passage. Our study was based mainly on the Ademe scenarios, which are based on this objective, and our proposed S2@HdF and S3@HdF scenarios therefore implicitly include it, but in different ways.

In concrete terms, there is no lack of official documents, of serious and structured proposals to achieve this. The solutions are known, but the effort to be made in eight (or ten) years is immense. It requires awareness and the rapid implementation of decisions, some of which may be misunderstood or resented.

Decarbonization also requires a strong sense of appropriation, constant education, exemplary governance structures and flawless communication.

Fortunately, rev3 has allowed to initiate a number of initiatives in this direction, particularly in steel production, cement production and the energy mix. But at the level of Hauts-de-France, the effort to be made remains significant.

Will we be able to go much further and much faster than what has been done?

Issue #2

Sobriety is an imperative, but is it understood and accepted?

As a corollary to the objective of decarbonization, energy sobriety is a major component of the transition paths. The geopolitical events underway at the end of 2022 confirm this in a brutal way, and the resulting energy crisis is jeopardizing activities, upsetting economic balances and plunging some people into precariousness.

The work done on the two scenarios shows that sobriety could extend to subjects other than energy. The availability of materials such as lithium, which is needed to manufacture batteries, could become problematic. The same question could arise for the availability of copper or the use of wood. The evolution of the climate, even in our region, changes the access to water resources...

In a different field, digital technology has made itself useful in many areas, but besides the prowess it allows, does it not create an ocean of "waste"? Isn't it time to talk about sobriety in terms of terminals, software and usage, and shouldn't we already control the environmental impact? What are the main areas of regional activity that could be concerned by this sobriety?

The solutions exist, but is this objective of "well understood" sobriety really shared to the point of motivating changes in behavior?

Issue #3

What are the adaptations of the industry and of agriculture of our region?

The prospect of a future where carbon neutrality is an accepted and respected objective and where a large-scale sobriety is required from now on, impacts our entire economy, and more particularly our industrial and agricultural production, two major areas of the Hauts-de-France economy.

Today, we cannot ignore the questioning of the automobile industry, which is perhaps still in its infancy, and we are well aware of the difficulty of adapting in this sector. Tomorrow, won't other sectors be affected in turn?

What can the building industry expect? Won't the majority of the building industry shift towards efficient renovation of existing buildings, which in our region is a primary requirement? Will we not be forced one day soon to reduce the production of cement and steel? What is the future of the use of sand on which the first concerns have appeared?

In a similar perspective, the question of agricultural production arises. Like industry, it is an undeniable resource in the Hauts-de-France region, combining environmental issues, soil preservation, respect for biodiversity, and water quality monitoring...

In France, food is responsible for a quarter of the carbon footprint. The reduction of animal protein consumption is already a reality, as is the use of biomass. Agricultural soils, pastures, hedges and hedgerows are essential carbon sinks. How to find a satisfactory balance of actions in the midst of this bundle of constraints and objectives?

The rev3 Community could be a proper place in order to discuss these issues and prepare for a different future, to absorb the shocks that could occur in view of the instability that has set in on international exchanges, and of the impacts of climate change?

Shouldn't we imagine and give ourselves new flexibilities as soon as possible?

Issue #4

How to achieve a wider appropriation of rev3?

The last sentence of the Ademe's dossier reads as follows: Whatever the "chosen scenario", collective orientations will have to be discussed and planned quickly in order to be part of a coherent trajectory, intrinsically and with the ambition that France has set itself

The two scenarios S2@Hdf and S3@Hdf imply transformations that will not happen by a magic wand, nor by laws and decrees. They are too fundamental to come from a continuous evolution, even an accelerated one, of a trend scenario. It is therefore the pitfall of appropriation that must be overcome, especially since it is now recognized that this was one of the weak points of rev3, despite the great communication efforts that were made. Rev3 is little or even not known to the general public and it has spread much less in the southern part of the region than in the north, as all the maps of the location of projects or actions show.

We are convinced that it will be necessary to co-elaborate, co-construct this future whose contours the study draws. Should we consider a Citizens' Convention for the Hauts-de-France? Should we launch massive awareness and training programs? Should we launch a collaborative space for companies and residents? Should all elected officials be trained?

Or should we do all this through truly participatory approaches to ensure the support of the greatest number?

Are we ready for the democratic exercise, for the sharing prior to decision-making?

Issue #5

Could we implement a new transition model?

At the convergence of three paradigms, techno-centric, just transition, living-centric, there may be an ability to develop a new transition model. All three, in different ways, can lead to carbon neutrality, but also to the achievement of complementary objectives, without which this transformation would be incomplete or unfinished.

While we in the Hauts-de-France region tended to cultivate essentially the techno-centered paradigm, which is very much rooted in the reality of Jeremy Rifkin's Third Industrial Revolution, the time may have come to add other components that will open up other horizons.

We can remember that the premises existed when Jeremy Rifkin spoke to us about the emergence of lateral power, an emergence that then occurred in a somewhat brutal way with the Yellow Vests movement... On this subject the work of the HCC is particularly enlightening, in the define they give to the just transition as being composed of economic justice, social justice and democratic justice. We need to think now about the implementation of these recommendations.

The other reflection present in the Master Plan, and which it is undoubtedly time to reactivate in Hauts-de-France, is that of the "Biosphere Valley", also known as "Green Archipelago". It opened the doors to a transition where non-human life has its place. The erosion of biodiversity, the rupture of certain chains of life, the overexploitation of fisheries resources and so many other attacks on the world around us are today flagrant, including in our region. The time has perhaps come to recognize our natural environment, no longer as a resource center but as a partner that has long offered us the environment of our lives, with which we must quickly build another relationship, moving from a mode that can often be that of predation to a mode made of respect and understanding.

These three paradigms, seemingly disjointed, can in fact be intimately connected in an interdependence which we can *a priori* think would be fruitful, including on the economic level, and would allow us to advance more quickly in the ecological transition.

A more acceptable and desirable model of economic development is emerging, based on energy sobriety, a circular economy, an economy of functionality, the preservation of material resources, and a new relationship with the living world. The work carried out in the region over the past ten years within rev3, by the CERDD, the CD2E, the competitiveness clusters, academic research and many other structures could certainly form the basis of this new transition.