



# The Green-Gold Rush

## What governance for biomass?

Proceedings of discussions

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### Foreword

The pathways to carbon neutrality of many companies mostly involve substituting renewable resources for fossil fuels and materials whose production generates high greenhouse gas emissions. It seems that biomaterials, biogas, biofuels, biomass, and green chemistry will have to be strongly mobilised around the goal of carbon neutrality.

The ZEN 2050 Study - imagining and Building a Carbon Neutral France<sup>(1)</sup>, published by EpE in May 2019, identifies demand across different sectors, highlighting the competition for biomass that would result from deploying those pathways and the strong likelihood of a rush for this new green gold in the long run. There are currently six types of use (the «6F») for biomass:

- **Food:** human consumption
- **Feed:** animal feed
- **Fibre:** materials, wood, textile fibres, molecules with special properties
- **Fuel:** energy needs
- **Fertilizer:** biomass as fertilizer, animal waste or straws
- **Fauna, flora and forest:** biomass as the bulwark of biodiversity.

Moreover, replacing some fossil fuels with renewable biomass for energy or materials is highly likely to disrupt the balance between the different uses of biomass, causing tensions in food supply, and tending to further reduce non-productive spaces and accelerate biodiversity loss, as shown by the ongoing deforestation we are witnessing.

Acknowledging those risks, EpE's Resources Commission, chaired by Rachel Kolbe-Semhoun, Director of Sustainable Development at InVivo, has been working since 2018 on possible conflicts of use and the opportunities for building bridges and cooperation between agriculture and industry in the search for solutions.

Our studies show that change is increasingly occurring in a context of open international competition, leading to scepticism in the French farming community about the very existence of a 'green gold', at least while prices of major renewable raw materials grown in tropical areas remain low.

Indeed, those regions benefit both from more sunshine and water per hectare and cheaper labour and land than Europe.

Although France is fairly well endowed in farmland, the production and sharing of available resources will soon raise governance issues. Unregulated market forces would lead to unacceptable pressure on prices, or to reliance on imports causing deforestation elsewhere.

That is why EpE member companies have sought to open up the debate on the governance required for land use and biomass to other partners concerned by these issues:

- AllEnvi, the theme-based technology transfer consortium and environmental research alliance that focuses on the use of renewable raw materials for green chemistry;
- ADEME, which conducts France's ecological transition policy and manages support for renewable energy investments;
- IDDRI, which is specifically tasked with developing governance systems compatible with sustainable development, and has worked on European agricultural scenarios;
- Caisse des dépôts and BPI, which guide the decisions of multiple stakeholders (industry and local authorities), and manage most of France's forests through Société Forestière.

These partners have brought varying views of existing governance issues and arrangements, showed progress paths, opened up avenues and raised new issues.

Due to the current sanitary situation, the symposium originally planned took the form of a series of webinars, available for replay on EpE's YouTube channel. The sessions brought together more than 900 participants, reviewed many issues, and sparked lively debate. To ensure that most of the discussions remain easily available, we have decided to publish the proceedings. Restoring the vibrant style of the webinars, their purpose is to record and extend the debate, which will remain open for years to come.

## Will there be biomass for everyone?

Biomass is the new star of renewables. After solar, wind, and geothermal energy, we now have energy from wood and livestock manure. In search of a godsend since the beginning of the industrial era, our civilization now believes it has finally found the holy grail. An abundant source of services that is both cheap and devoid of undesirable consequences, biomass will enable us, finally, to live in a perfectly clean society that no longer has to be ashamed of itself.

Fantasy aside, resorting to biomass is a necessity. All the reports dealing directly or indirectly with climate change place it at the forefront of solutions. We cannot properly decarbonise our way of life without replacing part of our fossil fuel consumption with a biomass-based one. This resource can be used for just about everything, providing us with fuels, fertilizers, fibre, furniture and building frames, heat, electricity, molecules for green chemistry and, of course, primarily food. A tall order, indeed, that gives rise to serious concerns: if everyone chases biomass, what will be left for our food? And what will the environmental cost be? If the ultimate purpose is to «push» our ecosystems to produce a maximum amount of biomass, then we would merely be

repeating the serious mistakes for which the industrialisation of agriculture has been sharply criticized. The ZEN 2050 report published by EpE spells it out in no uncertain terms. In a nutshell, «*when we add the numbers up, there is not enough for everyone*», says EpE's General Manager Claire Tutenuit. A carbon-neutral France with diversified, comfortable lifestyles and some economic growth is indeed possible, though the question of how biomass will be shared among its various uses and how much restraint will be required is yet to be addressed.

Even when circumscribing the issue to energy, the challenge is daunting: «*the graph of French energy production shows that the three large arrows at the top representing the share of coal, oil and gas, have to switch places with those of the two small arrows at the bottom that account for electricity and biomass*», resulting in an impressive bottleneck. In our everyday energy consumption, replacing energy from oil and gas and, to a much lesser extent, coal with electricity and energy from biomass seems like having to sail a container ship through Paris' tiny Ourcq canal.

## Land: what place is there for men and their activities?

Biomass takes up space. But space is what everybody wants. Competition is fierce between city and countryside, between agriculture and nature. Unrestrained property prices encourage the conversion of farmland into housing estates and business parks. Without a proper legal status, land has no intrinsic value and its only value is ultimately

derived from its transformation into something profitable. In this scheme of things, biomass rarely emerges as the most attractive option. Additionally, without an adequate standard of living, farmers are tempted to sell their land to the highest bidder. Accordingly, biomass boils down to land use planning and tax policy.

## Agriculture: producing more or producing better?

«*Land use planning is the result of centuries of conflicts of use and, therefore, of multiple laws and interests. This means that when seeking to change something, it is not sufficient to edict a general objective*» such as 'zero land take'. What is needed instead is a policy, in the proper sense of the word. This means enforcing existing laws, simplifying the interrelationships between them, and reforming tax law to achieve the desired effect. Reducing land take also involves giving land full legal status, which it currently lacks. In law, land only features according to the purpose it is deemed to serve, particularly if that purpose is something other than producing food. Basically, agricultural land is considered as the go-to option for absorbing urban sprawl because it is not worth much in

both the property market and our collective consciousness. Nevertheless, we keep demanding more and more from our farmers.

We ask them for more output, fewer inputs, more biodiversity, lower prices, less animal suffering and more stored carbon, yet we continue to spend ever lower amounts on our food and look upon farming with disfavour. Moreover, many of us want our 'house with garden' erected on land, even though the fulfilment of our agro-ecological dream will require more farmland. As if this were not enough, we are now asking farmers to produce biomass to make energy, fibre and basic molecules for the chemicals industry.

## Forests: how can we use and manage them?

In carbon terms, forests have roughly the same importance as farmland. Both absorb a similar proportion of what we emit into the atmosphere every year. Both have many features in common: they are large reservoirs of biomass and can serve new purposes such as carbon dioxide absorption and water regulation. What differentiates them is their timespan. That of the forest is long; it exceeds a human life, while that of agriculture is ruled by seasons and harvests. In our collective imagination, trees override crops. People love put-

ting their arms around trees, and find it outrageous to fell them. In 2019, for example, a declaration of 'tree rights' was brought before the French National Assembly by some parliamentarians to enshrine trees in legislation as 'sensitive living beings'. While France's forests are recognized as a largely underexploited biomass deposit, they are an emotive issue. The question remains as to how to produce more wood and improve the way we do so.

## What governance for biomass?

Biomass is a well-known asset. While it alone will not offset our carbon emissions, it will go a long way to doing so. Agriculture, forestry, fishing and the waste each one of us produces can provide a lot of it. The point is to avoid doing so at the expense of the environment, given that 'the road to hell is paved with good intentions'. It is not because a product or a kilowatt-hour is derived from natural materials that it benefits the environment. Biomass is the dead part of biodiversity extracted after growing on land and, as such, does not return to it, thus breaking the natural cycle

of regeneration. But the value of land is largely ignored in France, particularly by tax and other regulations. Addressing biomass issues amounts to addressing land use planning, i.e. institutional arrangements, negotiations and conflicts of use. The need for biomass is becoming apparent and will grow as our fossil fuel use falls. To avoid this leading to an uncontrolled rush, it is worth finding in what forums and how its different uses can be best arbitrated.

## Conclusion

Governing and managing involve measuring and much more. «*We must know what is happening and have the economic and ecological parameters at hand to construct biomass scenarios,*» says Claire Tutenuit. In other words, we have to find a way to build and maintain the trust that is essential for reconciling divergent interests and harmonising different levels of decision-making. At local level, people know each other. The higher one climbs the vast echelons of decision-making, the more trust is vested in representatives and institutions that must prove their legitimacy.

We are on a finite planet. Biomass production has narrow limits, especially if we want to conserve biodiversity. Without trust, there can be no planning, essential at all levels from global to municipal, to ensure that natural resources are always renewable and fairly shared without damaging ecosystems. Trust allows players to make decisions. Without savings, however, adequate planning will never be implemented, and conflicts of use will intensify.

Biomass makes good sense only in a bioeconomy where it is best used and reused, where less material is consumed, yet where the material is put to more efficient, different and better uses. That depends not only on how quickly and cost-effectively companies develop technical solutions, but also on changes in our lifestyles. Such shifts could be governed by rules preventing the gains made so far from being globally wiped out by imports, and ensuring adequate and consistent pricing.

Good governance will be impossible so long as biomass costs far more than oil and coal, or its valuation remains unattractive to farmers and foresters. Governments could gradually increase price thresholds for carbon markets to boost energy savings, provided they help the most vulnerable people and businesses to weather the transition. All renewable energies, including biomass, ought to be assessed on the basis of their global contribution or significance to the environment. Citizens must become aware of the consequences of their lifestyle choices and be watchful for the necessary balance to be struck between goals. Undoubtedly, all decisions on biomass taken now will have long-term consequences.

# About EpE

Entreprises pour l'Environnement (EpE), a French association set up in 1992, is a forum for dialogue between business leaders and environmental managers and policymakers who share the vision of the environment as a driver of progress and opportunity, exchange their best practices and work together to better factor the environment into their strategies and operations.

EpE publications are available at <http://www.epe-asso.org/publications-rapports/>

This publication is authored by Frédéric Denhez for EpE.

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