

Should bioenergy be developed?

“Bioenergy for climate change mitigation: scale and sustainability” is an article published on 24 May 2021 in the journal “GCB Bioenergy: Bioproducts for a Sustainable Bioeconomy”, written by Katherine Calvin et al. Based on the existing literature, this article questions the sustainability of bioenergy. The term “bioenergy” refers to all energy produced from biomass. This article discusses in particular the use of “agro-energy” derived from agricultural production through the conversion of crops, by-products and agricultural waste into solid fuel (straw), liquid fuel (biofuels) or gaseous fuel (biogas), in addition to the use of wood for energy creation. It focuses on the conditions necessary for the sustainable deployment of such energy and underlines the difficulty of assessing its viability in a realistic way.

#1 The various IPCC reports underline the importance of bioenergy within the framework of a temperature rise scenario of 1.5° C. However, it is complex to affirm the sustainability of these energies due to several methodological limitations. Indirect soil changes and the resulting GHG emissions are not taken into account in the models, for example. Part of the emissions related to the life cycle of bioenergy products are attributed to other sectors such as agriculture or transport (fertilisers, transport of goods, etc.). Moreover, there are major uncertainties about the evolution of food demand and consumption patterns, which could make their development more or less relevant. Finally, the governance measures necessary for the sustainable development of bioenergy are not sufficiently taken into account by modelling systems, which offer an analysis that is exclusively quantitative.

#2 The main debates concerning bioenergy relate to their impact on food security (in terms of conflicting uses of land), biodiversity, soil degradation, and water resources. The raw material used, the production management system (in terms of the management of crop residues, use of cover crops, etc.), the region concerned and the previous use of the available land (in the case of degraded soils or peat bogs, etc.) are all variables that can have positive and/or negative consequences. The scale and pace of the deployment of bioenergy products are also factors to be taken into account when judging their sustainability: their large-scale development could, for example, lead to an increase in international trade in raw materials, leading to less food security and

new greenhouse gas (GHG) emissions related to the transport of goods.

#3 It is essential to put in place governance measures adapted to each of the different regions of the globe. This can be a source of many environmental and socio-economic co-benefits. Increased demand for bioenergy could support increased food production and lower prices in the long term, and lead to the creation of new jobs. Other co-benefits could also result, particularly in terms of protecting biodiversity (reforestation, land restoration, soil depollution) and the carbon storage capacity of soils (e.g., through the use of grasses). What is particularly important that conflicts over land use and agriculture should be resolved in consultation with all the stakeholders.

What is the situation in France?

In France, bioenergy accounted for 1.6 % of electricity consumption in 2019 and represented almost 50 % of renewable energy production in 2020, mainly in relation to heat production. As the leading agricultural powerhouse in Europe with the continent’s third-largest area of forest cover, France has significant development potential in terms of bioenergy. In the current context of climate change, having no oil production of its own and faced with increasing geopolitical tensions and their impact on energy prices, the development of bioenergy could enable France to increase its energy security.

The opinion of Pauline Bureau, the Vice-Chair of La Fabrique Écologique.

If the integration of bioenergy into the energy mix seems to be relevant, action still needs to be taken to ensure that its development is strictly sustainable, in particular taking into account the need for our soils to meet our agricultural and food needs.