

Which are the branches of activity where production is most dependent on energy?

Across all branches of activity in the French economy, intermediate energy consumption (hydrocarbons, refined oil products, gas, electricity) represented about 4% of production in 2019,¹ and 2% if branches that are themselves energy producers are not counted.² However, this global figure masks some wide disparities. ► **Figure 1** shows the branches (excluding those producing energy) where intermediate energy consumption represents more than 5% of own production. These branches cover 8% of production for the whole of the economy. In industry, the most energy-consuming branches (with intermediate consumption greater than 5% of their production) account for around 12% of industrial production.³

In industry (excluding energy-producing branches), the chemicals branch is by far the most dependent on intermediate energy consumption, accounting for more than a quarter of production in this branch. Next are metallurgy (9%), the paper and cardboard industry (8%), the manufacture of non-metallic mineral products (7%, which importantly includes the glass industry) and the extraction of metallic minerals (6%). In the chemicals industry, the energy consumed consists mainly of refined petroleum products but the proportions of gas and electricity are also significant. In metallurgy or the paper industry or the non-metallic mineral products industry, electricity is the major source of energy, although a considerable amount of gas is used too (2 to 3% of own production in these branches). In this respect, and according to the business tendency surveys, the business climates in these branches in September had deteriorated most out of all the industrial branches (► **Figure 2**), below their long-term averages for the chemicals industry, the timber, paper and printing industries, and also for metallurgy. This deterioration in business climate is probably a reflection of concerns over supply chains and gas and electricity prices.

Some services are also high energy consumers. This is obviously the case for air transport and water transport, where intermediate consumption of energy (mainly fuel) represents 23% and 13% respectively of the branch's production. The other types of transport service (other land transport, which notably includes road transport and rail transport) are less energy-intensive, at around 10% of their production (mainly refined petroleum products for road transport, electricity for rail transport). The motion picture, video and television programme production sector also uses a considerable amount of energy, especially electricity, almost 7% of its production.

The energy consumption considered here consists of direct inputs, i.e. consumed directly in the production process. However, it is not the only energy on which the activity of the branches depends: in addition to these direct inputs is indirect energy consumption, resulting from intermediate consumption (of energy or not) which also requires energy in order to be produced, and so on. ●

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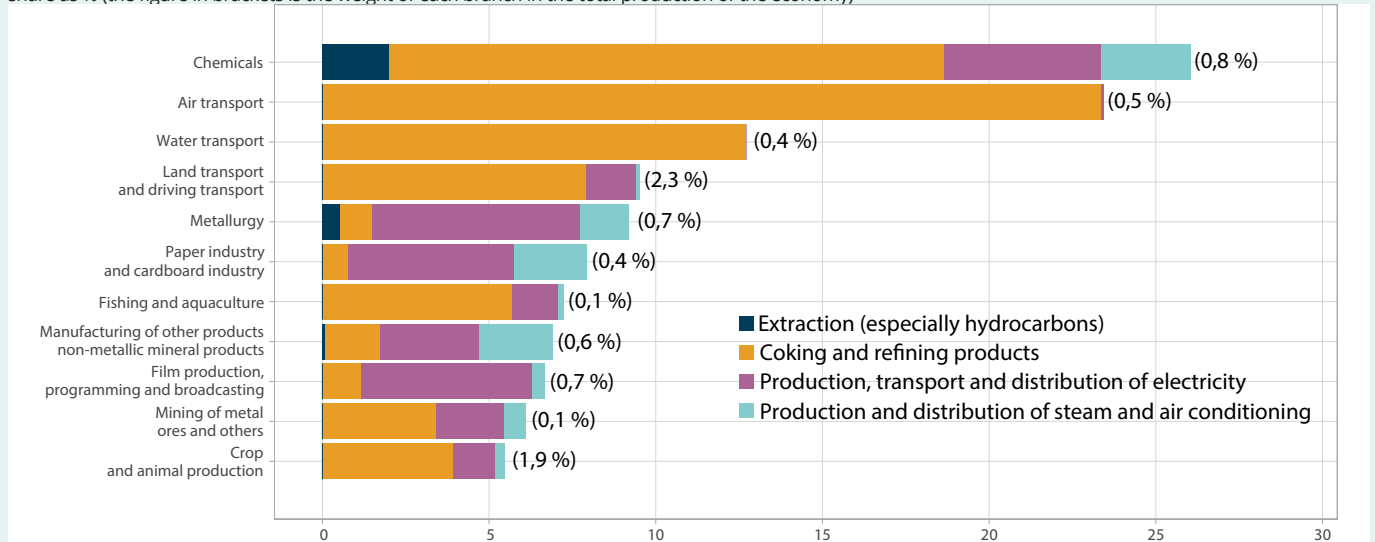
¹ This Box was produced from an input-output table (IOT) for 2019, level A64 of NACE. For the purposes of the analysis, since we are dealing with intermediate energy consumption, it was estimated at a finer level.

² Branches which themselves produce energy (coke manufacture and refining industry, production and distribution of gas or electricity) are heavy consumers of energy, much more so than the other branches.

³ These indicative proportions nevertheless depend on the granularity of the analysis. Even at a relatively detailed level, NACE level A64 can mask variations between activities where intermediate consumption is different. This is the case, for example, with the manufacture of non-metallic mineral products: this branch includes glass production, which is highly energy-intensive, whereas the other activities in this branch are less so.

► 1. Share of intermediate energy consumption (extractions, refined products, gas, electricity) in production by the branches (excluding those producing energy)

share as % (the figure in brackets is the weight of each branch in the total production of the economy)

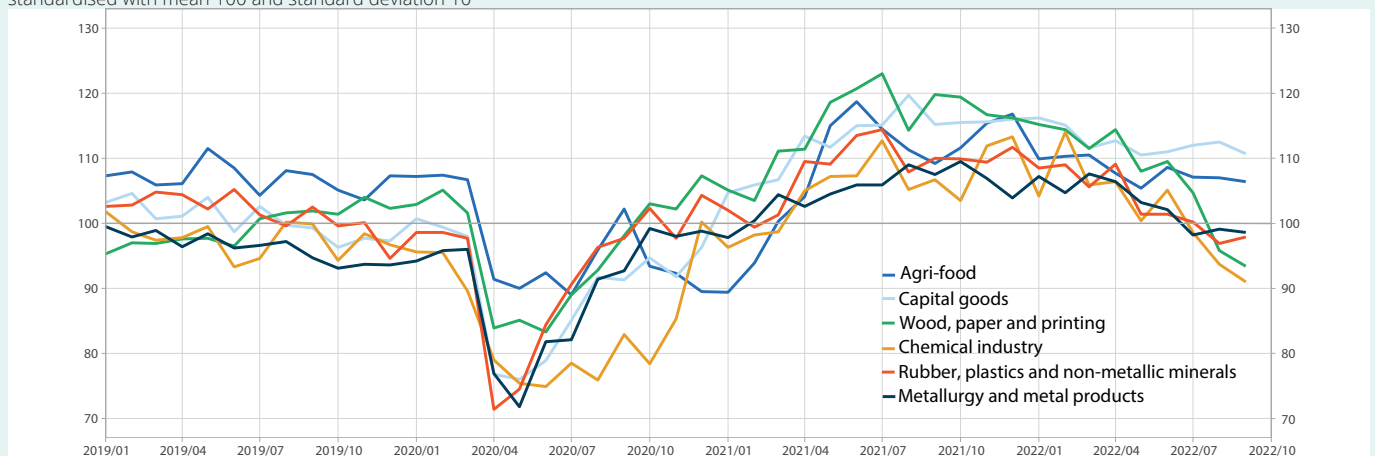


Note: this graph represents branches (excluding those producing energy) where intermediate energy consumption represents more than 5% of production. These branches represent 8% of the total output of the economy (the weight of each branch is give in brackets on the graph). The intermediate consumption considered is that in the extraction of hydrocarbons, coal and lignite, in coke production and refining, in the production, transport and distribution of electricity and the production, transport and distribution of gas, steam and air conditioning. The share of this intermediate consumption in production in the branches is calculated using an input-output table for 2019 (in current euros), at NACE level A64. For the purposes of the analysis, since we are dealing with intermediate energy consumption, it was estimated at a finer level.

Source: INSEE calculations

► 2. Business climate in some branches of the manufacturing industry

standardised with mean 100 and standard deviation 10



Note: the business climates are 100 average with standard deviation of 10 across the entire calculation period, which is longer than that shown on this graph (see the methodological details published by INSEE in *Informations Rapides*). The manufacture of rubber and plastic products and other non-metallic mineral products includes, among others, the glass industry.

Source: INSEE, business surveys