Analysen

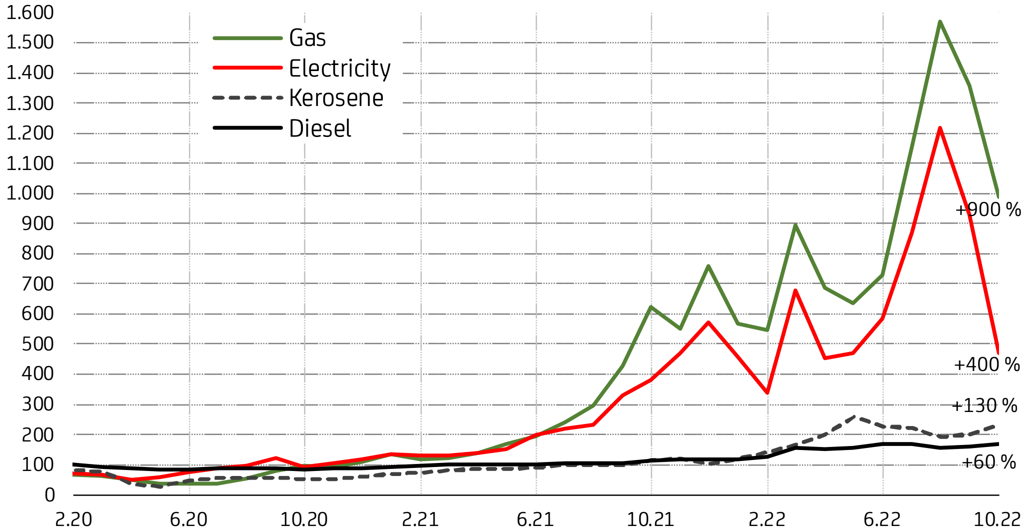
Bank Austria
Member of UniCredit

October 2022

Energy Costs at Sector Level

ENERGY COSTS AT SECTOR LEVEL

Gas and electricity price rise far above crude oil products
Austrian wholesalprice for gas and electricity, diesel, kerosene in €; Ø2019=100; in parenthesis: chg. Ø2019 to October 2022



S.: Mineral Oil Industry Association; Refinitv, UniCredit Research

- Electricity and gas prices have been growing at a record pace since mid-2021 and much faster than prices for crude oil products.
- The above-average energy-intensive sectors are directly affected by the price increases; these include aviation, the chemical, paper and steel industries. The industries use 45% of the total energy in industry.
- Less energy-intensive production and service sectors are affected by the second-round effects of high energy prices.
- Overall, energy expenses in industry has more than quadrupled since 2019 or has risen by around €16 billion. In some production sectors, costs have even increased more than sixfold since then.
- Potential losses in competition due to high energy prices and the increasing risk of insolvency increase the need for public support measures.

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Energy price development 2021 and 2022

Gas and electricity prices still soaring

In 2019 and 2020, the prices of fossil fuels and electricity fell due to weak demand and high energy production from renewable sources. In 2021, the rapid economic recovery and above all the high demand for gas, which was not matched by any corresponding supply, triggered an unexpectedly strong price increase, which intensified considerably in 2022: on average in the first three weeks of October, natural gas costs €150/MWh in Austrian wholesale and around 900% more than in 2019, electrical energy at €190/MWh around 400% more. During the same period, the prices for crude oil and crude oil products rose much more slowly, by around 60% to 130% depending on the product (chart p. 2). The fall in gas and electricity prices over the last few weeks is not likely to signal any sustained trend reversal in energy price developments, but is only likely to be a short-term relaxation of the market situation. The current listings on the energy futures markets are only announcing significantly lower gas and electricity prices for 2024.

Few, very energy-intensive industries

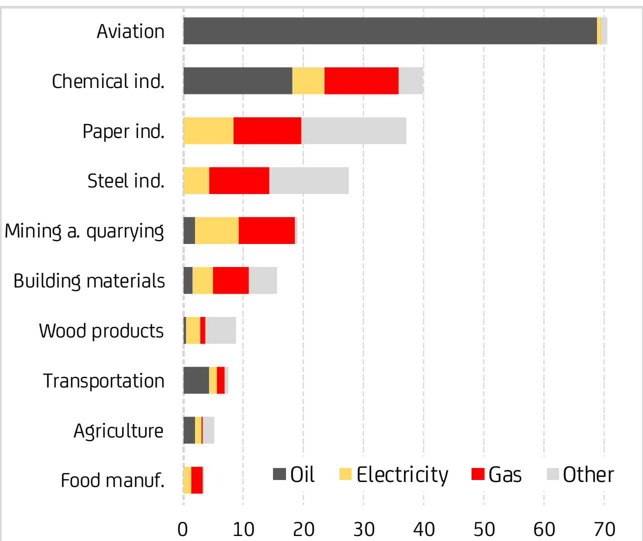
With rising energy prices, the cost burden on companies is growing directly. In addition, higher energy prices trigger second-round effects, especially when energy-intensive companies pass the increased costs on to their customers. And finally, it must be expected that the production of individual energy-intensive products will become unprofitable and in some cases restricted due to rising energy prices. The resulting bottlenecks in the supply chains can indirectly trigger further price increases.

Most energy-intensive industries: aviation, chemical, paper and steel industry

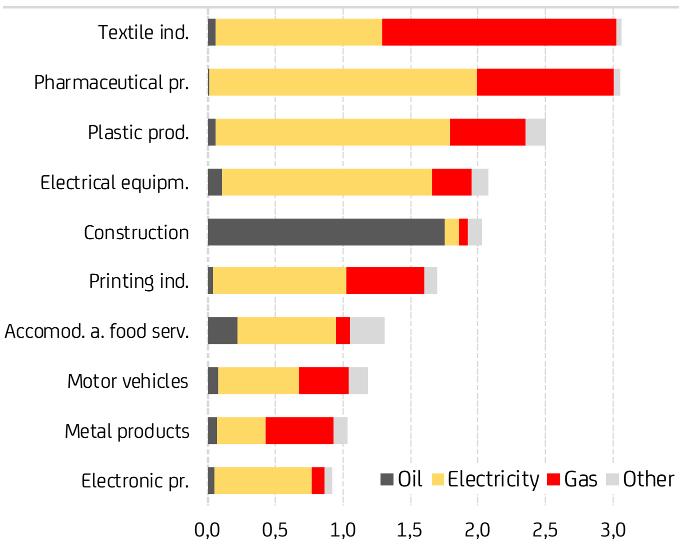
In any case, almost all companies are feeling the effects of high energy prices, not only in above-average energy-intensive sectors. In Austria, these include aviation, the chemical, paper and steel industries, sectors with an energy requirement of well over 25 terajoules per million euros of added value (in comparison, companies consume an average of almost 8 TJ per million euros of added value in 2019).

Aviation is an exceptional industry in that the energy consumption of 71 TJ per million euros added value is the highest of all individual industries and because most of it is fuel. Kerosene prices have roughly doubled since 2019. However, the price increase remained well below that of gas and electricity, which means that the increase in energy costs in the industry has also remained below that of other energy-intensive industries.

Grafik 1: Very energy-intensive industries
(Energy consumption, terajoules per mio. € added value, 2019*)



Grafik 2: Less energy-intensive industries
(Energy consumption, terajoules per mio. € added value, 2019*)



* Total 3,1 Mio. TJ (incl. energy consumption of private households, non-commercial sectors, etc.)

S.: Eurostat; UniCredit Research

In total, the four above-average energy-intensive sectors use 344 petajoules or 45% of the entire energy use of the commercial economy (of a total of 764 PJ, whereby possible (conversion) losses are also counted here for final energy consumption; including the energy consumption of public and private households and other energy losses end consumption in Austria reaches 3,100 PJ).

Less energy-intensive production and service sectors are threatened by second-round effects of high energy prices

Second-round effects of rising energy prices can be significant the greater the input from energy-intensive industries

With rising energy prices, the cost burden on companies that are dependent on the products and services of particularly energy-intensive industries in the form of input is also growing. The higher prices are passed on to varying degrees, primarily depending on the specific competitive situation, and often only with some delay. Still, the second-round effects of rising energy prices can be significant as companies source more products from more energy-intensive industries.

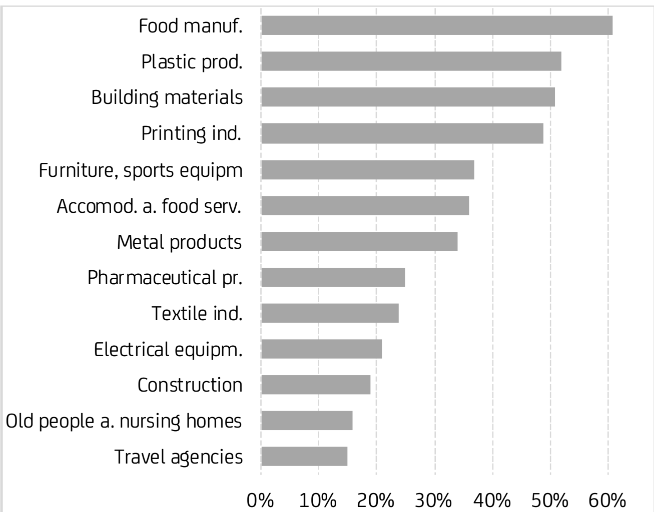
In addition to the production of food, plastic goods and building materials, the sectors particularly affected by second-round effects also include service sectors such as the accommodation industry and food service activities and old people and nursing homes.

The food and beverage industry obtains 61% of its inputs from the ten most energy-intensive sectors (including products from its own sector that are processed at various stages of production). Slightly more than half of the input comes from agriculture. At the same time, the food industry supplies a third of the input of food service activities and another 12% of nursing and old people's homes.

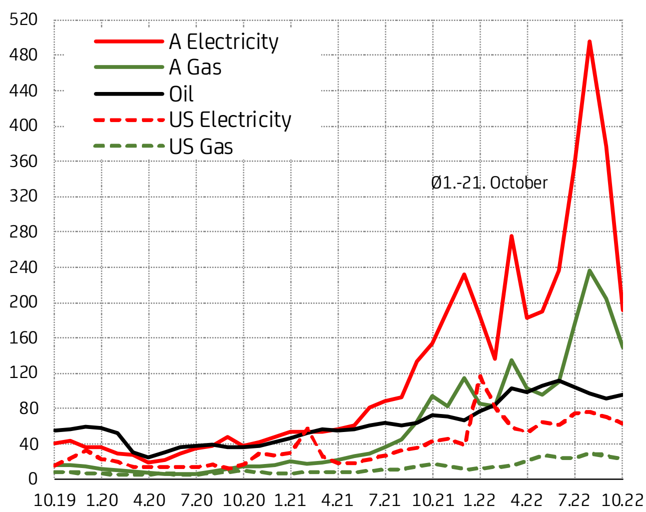
The most important input supplier for plastics processors is the chemical industry, from which almost half of the input comes (above all from the production of raw plastics).

In contrast to other sectors that are particularly affected by the second-round effects of high energy prices, the production of building materials in the production process itself consumes an above-average amount of energy (approx. 16 TJ per million euros added value). In addition, the industry obtains a quarter of its inputs from mining (above all sand and gravel), the chemical industry and goods transport, other very energy-intensive sectors. After all, the production of building materials supplies 9% of the total preliminary work in the construction industry.

Grafik 3: Industry affected by second-round effects
(Input consumption of energy-intensive industr. in % of total input*)



Grafik 4: Wholesaleprice of important sources of energy
(in Euro per MWh: Electricity, Gas**, pro barrell: brent oil)



*... of total input of sectors with a share of more than 15%

** Electricity: EEX Phelix base load, ICE off peak; Gas: EEX Egix, Nymex Nat. Gas M02

S.: Eurostat Input-Outputstatistics 2017; Refinitiv, UniCredit Research

Energy expenditure has increased more than sixfold since 2019 in some less energy-intensive industries

Manufacturing energy costs have increased by €16 billion since 2019

The development of energy expenditure in relation to revenue show that the burdens caused by the high energy prices vary greatly between sectors and at divisional level. For example, in 2019 the chemical industry spent an average of 3% of its revenues on energy, and the manufacturers of industrial gases 15%. In the food industry, energy expenditure amounted to just under 2% of revenues, and in the mills segment to more than 4%. However, since 2019 the energy bill has increased significantly in all industries and probably in most sectors.

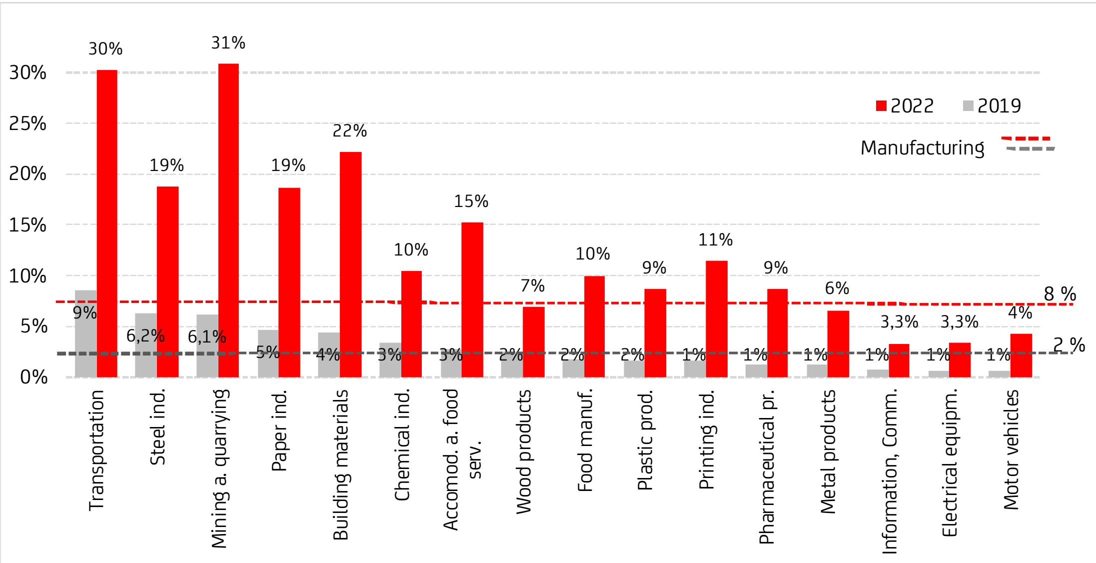
Assuming that the shares of energy sources in energy use did not change, energy costs in relation to revenues rose on average from 2% in manufacturing in 2019 to 8% by the third quarter of 2022, by around €16 billion in total . Not only the energy-intensive, large Industries, such as the steel, chemical and building materials industries, made large contributions to this. The energy expenditure for food production even increased at an above-average rate, from just under 2% to more than 10% of the proceeds. The background to this is the high share of natural gas in the energy use of the industry of more than 50% (compared to 28% for the manufacturing average in 2019) and the massive increase in gas prices.

In the service sector, the energy cost burden has risen particularly sharply in addition to transport, also in the tourism sector, by €5.1 billion in the transport industry and by €2.5 billion in accomodation and food services activities. The fact that the energy share of revenues in the two tourism-related industries has increased from 3% to 15% in the last three years can also be explained in part by the weak growth in revenues in the industries, which at mid-year was still at the 2019 level have not achieved.

With a share of energy costs of more than 3% of the proceeds, the information and communication area is also one of the service areas more severely affected by the rise in energy prices; In 2019 it was less than 1%. Above all, the lack of growth in the publishing industry is likely to have made a significant contribution to the increase in the share of energy costs in revenue.

Grafik 5: Massive increase in energy costs

Share of energy expenses in total revenue*



* excluding aviation, utilities and sectors with an energy component 2019 <3 %

Quelle: Statistics Austria, UniCredit Research

Possible losses in competition due to high energy prices and the increasing risk of insolvency increase the need for public support measures

Effects of the high energy costs depend on the market power of the company and the competitive situation

High energy consumption and rising energy prices do not necessarily lead to production cutbacks and the erosion of corporate profits. Business impact depends on profit margins and ability to pass price increases on to customers. In this respect, market power and the competitive situation in the market are decisive factors. The more exposed an industry is to competitors from countries with cheaper energy, such as the USA (Chart 4), the greater the drop in production and profits can be expected. As a further consequence, relocations of production to cheaper locations must also be expected.

A drop in energy prices to pre-2020 levels remains unlikely in the next few years, although a permanent Russian gas supply freeze would lead to another gas and electricity price increase that is likely to be drastic in the short term. In the longer term, the climate protection measures that are essential for the implementation of climate neutrality in the EU will also ensure higher energy price levels.

In order to secure the competitive position of very exposed industries or the economic survival of smaller commercial enterprises and to curb the increasing energy poverty of many households, political support is definitely needed. The estimate of energy costs for 2022 shows that there are no sectors, at least in the production sector, where the energy cost share of revenues is less than 3%, the limit that was set for the energy cost subsidy for companies.

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