GEMEINSCHAFTS-DIAGNOSE

On the Threat of a Gas Gap in Germany in the Event of a Suspension of Russian Deliveries – Special Report, June 2022

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The gas gap that would have resulted from an immediate suspension of Russian natural gas deliveries in April is no more. But although gas storage facilities are now filled to a much higher level, not all gas supply risks have been averted for manufacturing in the winter half-year 2022/2023. It is therefore advisable to have price signals reach consumers sooner rather than later.

In their spring report, published in mid-April, the institutes participating in the Joint Economic Forecast analyzed the economic effects of an immediate suspension of Russian gas deliveries. For this purpose, they designed a stochastic simulation model that shows monthly gas availability in Germany based on possible gas savings and potential additional supply volumes. In the median of the simulation runs (halfway between the most unfavorable and most favorable result), a gas shortfall in the amount of 35.5 TWh would have occurred in 2023 if deliveries had been suspended at that time. This would have led to significant cuts in gas supply for industrial needs and restricted manufacturing production (method description).

At that time, the main question was what economic effects a Western-imposed ban on gas imports from Russia would have, but the recent reduction in Russian transit volumes once again throws a spotlight on the possible consequences of, and economic policy reactions to, a suspension of deliveries. In response, the institutes have updated their stochastic simulations for reassessing gas availability in Germany. This takes into account the most recently observed gas storage levels, which are slightly below the average of previous years.

Table
Gas Gap and Loss of Value Added If Russian Gas Deliveries Are Suspended

Suspension of deliveries	Gas gap in TWh					Loss of value added (IO impulse) in EUR billion				
	Worst case	20% quantile	Median	80% quantile	Best case	Worst case	20% quantile	Median	80% quantile	Best case
April	54.1 198.5	– 102.1	– 35.5	– –	– –	4.6 438.1	– 197.6	– 68.8	– –	– –
May	17.2 198.5	– 70.9	– 5.0	– –	– –	– 389.0	– 137.6	– 9.8	– –	– –
June	– 163.1	– 23.8	– –	– –	– –	– 294.1	– 46.7	– –	– –	– –
July	– 157.6	– 23.8	– –	– –	– –	– 283.4	– 46.2	– –	– –	– –
August	– 152.4	– 25.2	– –	– –	– –	– 273.0	– 49.2	– –	– –	– –
September	– 144.3	– 23.9	– –	– –	– –	– 256.8	– 46.3	– –	– –	– –
October	– 134.7	– 21.4	– –	– –	– –	– 237.5	– 41.8	– –	– –	– –
November	– 107.8	– 1.9	– –	– –	– –	– 185.8	– 3.8	– –	– –	– –
December	– 93.1	– –	– –	– –	– –	– 158.3	– –	– –	– –	– –

20% quantile (80% quantile): 20% (80%) of simulation results are less favorable, 80% (20%) are more favorable. Values in the cells refer to the year 2022 (first row) and 2023 (second row)
Loss of value added: First- and second-round effects in the manufacturing sector, chained volume values (reference year 2015)

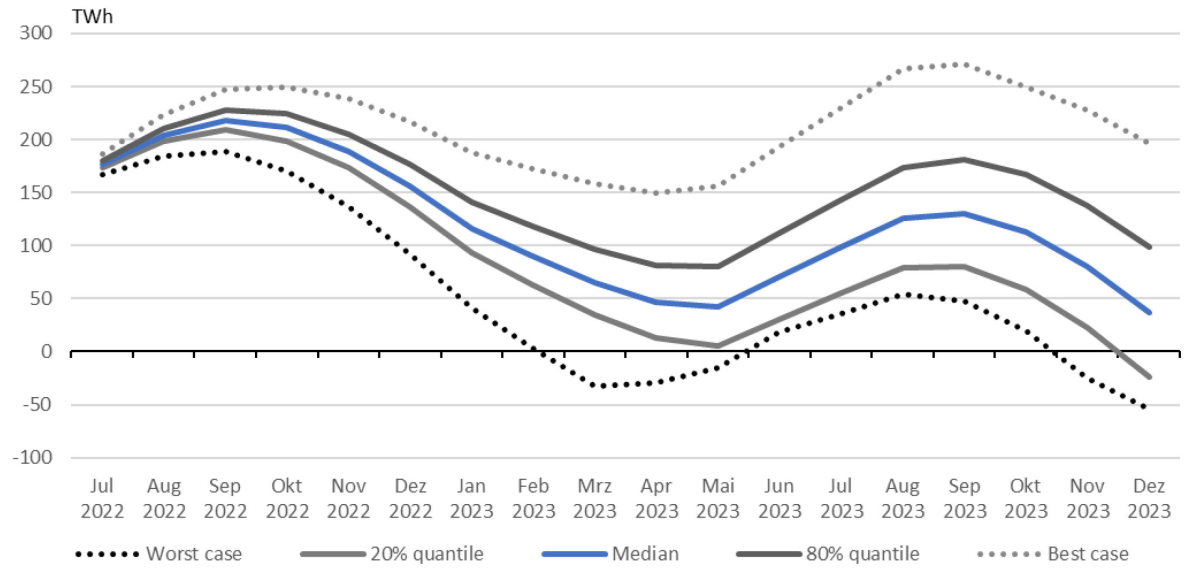
While German gas storage facilities were only 30% full last April, the storage level recently reached 58%. This means that – in contrast to a suspension of deliveries starting in April – the median of the results no longer shows a gas gap in the coming year should deliveries be suspended immediately (Table). The reason for this is that more gas has flowed into Germany to be stored in the meantime than would otherwise have been lacking in the coming year. The time profile of gas availability (Figure 1) and storage levels (Figure 2) for an immediate suspension of deliveries shows that the storage facilities have positive levels in the median of the results until the end of 2023, meaning supplies to manufacturing consumers need not be rationed.

Nevertheless, if Russian deliveries are suspended immediately, supplies to manufacturing are not guaranteed. There is a 20% probability of a gas shortfall of at least 23.8 TWh in the coming year; in the worst case, the shortfall could amount to almost 160 TWh. According to the institutes' calculations, the resulting loss of production in gas-intensive industries and for their direct customers (known as the IO impulse) alone would result in a loss of value added of around EUR 46 billion (20% quantile) or EUR 283 billion (worst case). These figures correspond to 1.6% and 9.9% of total gross value added in 2021. The macroeconomic costs are likely to be even higher, as the direct costs of the IO impulse would be compounded by cyclical amplification effects and the loss of purchasing power due to higher energy prices. For example, the total effect estimated by the institutes in their spring report (based on a comprehensive macroeconomic analysis) for a suspension of deliveries at that time was a good three times higher than the IO impulse. However, the model gives the all-clear for scenarios in which Russian deliveries, currently curtailed to 40%, are resumed. In this case, there is no threat of a gas bottleneck for manufacturing, even in unfavorable scenarios.

Figure 1

Availability of Natural Gas in Excess of Demand

Simulation results in the event of a suspension of Russian deliveries from July 2022 onward

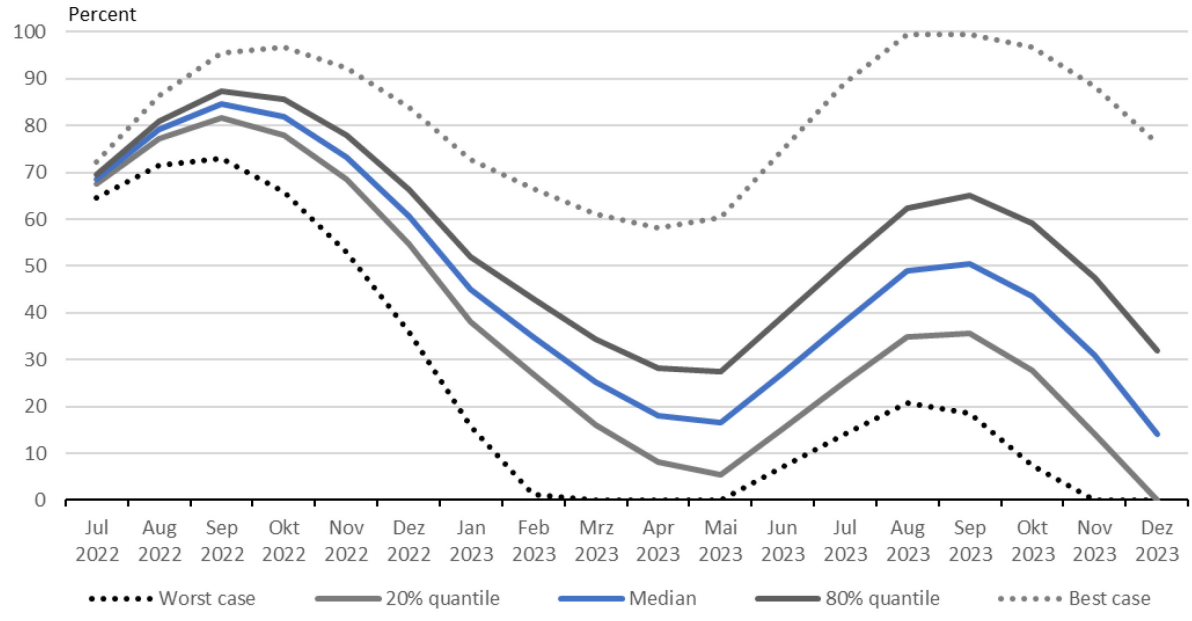


20% quantile (80% quantile): 20% (80%) of simulation results are less favorable, 80% (20%) are more favorable

Figure 2

Storage Level in German Natural Gas Storage Facilities (Month-End Figures)

Simulation results in the event of a suspension of Russian deliveries from July 2022 onward



20% quantile (80% quantile): 20% (80%) of simulation results are less favorable, 80% (20%) are more favorable

At the end of the simulation period, the gas storage facilities show significantly lower storage levels compared to the previous year (median scenario: 14.1% in December 2023 compared to 60.6% in December 2022). This would leave the German economy significantly worse prepared for 2024 in terms of gas supply.

However, other sources of supply that are not yet included in the simulation are then likely to emerge. This presupposes that potential supplier countries allow free trade in gas and do not impose export restrictions on their part in the intention of shielding their domestic customers from rising gas prices. After all, the demand pull from Europe is causing gas prices in the rest of the world to rise. Thus, substitution of Russian gas is always subject to protectionism risk.

Policymakers should rely on market-based instruments to make the adjustment to the negative energy shock as efficient as possible. This requires that the increased procurement costs for energy be passed on to consumers in a timely manner. This would decrease energy consumption earlier making the more favorable scenarios of gas availability more likely. This also includes activating the price adjustment mechanism pursuant to Section 24 of the German Energy Security Act. Since higher prices already provide a strong incentive to reduce energy consumption, additional government incentives to save energy are not necessary; indeed, these interventions are likely to have unfavorable distributional effects because the de facto opportunities to save energy in the short run are unevenly distributed. Instead, households that lack the means to shoulder the rise in energy prices on their own should be supported through targeted transfers. Since the German economy as a whole has lost purchasing power to other countries as a result of the energy shock, relieving vulnerable households requires high-income and high-wealth households to bear the additional burden. Moreover, the support measures should be coordinated throughout the EU in order to ensure – unlike in the past – that prices are passed on in line with market principles and to avoid distorting competition in the common market.