

## EU Gas Insight – Planning the EU gas phase-out by 2040

Strategic Perspectives has launched EU Gas Insight, a new interactive gas tool that provides a clear picture of how the European Union (EU) gas demand will evolve under various 2040 scenarios. The tool compares the demand for gas with the amount of gas the EU is contracted to import under existing gas supply deals. It thus quantifies the oversupply and provides a strong rationale for a well-planned and -managed gas phase-out across the EU.

### EU Gas Insight

#### Dependence on gas: EU energy vulnerability

Russia's invasion of Ukraine had a massive impact on EU energy security, causing a substantial<sup>1</sup> increase in energy prices and a risk of energy supply shortage in the EU, especially of gas. Several industries in the EU have suffered from high energy prices, affecting their international competitiveness. 9.3% of EU households are now facing energy poverty.<sup>2</sup>

As a result, the European Commission presented the RePowerEU plan in 2022 which included a range of measures to gradually phase out Russian gas imports by 2027, such as energy efficiency measures, renewable energy production and the diversification of energy carrier import routes in order to reduce dependence on external suppliers and strengthen the resilience of the EU's energy systems.

**But the challenge remains. The EU is still heavily reliant on gas. In 2021, gas represented 23%<sup>3</sup> of the EU's total energy supply (production and imports), mostly consumed by the building and industry sectors and for generating power and heat. 85% of the EU's gas supply is imported.** This dependency has a cost: gas imports cost the EU over €161 billion in the first half of 2022.<sup>4</sup> As a direct result of this dependency, energy prices are now twice as high in Europe compared with the United States.

#### Diversifying gas supply sources: the risk of building new costly dependencies

The increase of liquefied natural gas (LNG) imports along with an overall reduction of gas consumption<sup>5</sup> has reduced gas imports from Russia. Before Russia's war on Ukraine, the EU imported 45% of its gas from Russia, compared to just 15% in 2023.

Last year, LNG accounted for 41% of the total gas imported to the EU, with over half coming from the US alone. This shift suggests that LNG will play a key role in satisfying future EU gas demand, despite being more volatile and polluting than pipeline gas.<sup>6</sup>

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<sup>1</sup> Eurostat. 2024. [Natural gas price statistics](#)

<sup>2</sup> Strategic Perspectives. 2024. [Forging Economic Security and Cohesion in the EU](#). Brussels

<sup>3</sup> Eurostat. 2023. [Shedding light on energy in the EU – 2023 edition](#).

<sup>4</sup> European Commission. [Dashboard for EU energy bill](#).

<sup>5</sup> European Council, Council of the European Union. 2024. [Where does the EU's gas come from?](#)

<sup>6</sup> Le Monde. 2024. [While very expensive and dirty, liquefied natural gas is the new star of energies](#). Paris.



This perceived urgency has led governments to invest more in new gas infrastructures in the EU,<sup>7</sup> such as on regasification terminals and pipeline improvements.

However, diversifying gas supply routes will only generate new dependencies, especially on LNG from the US and Qatar, and the economic cost will be greater, given the high volatility of LNG prices on the international market.

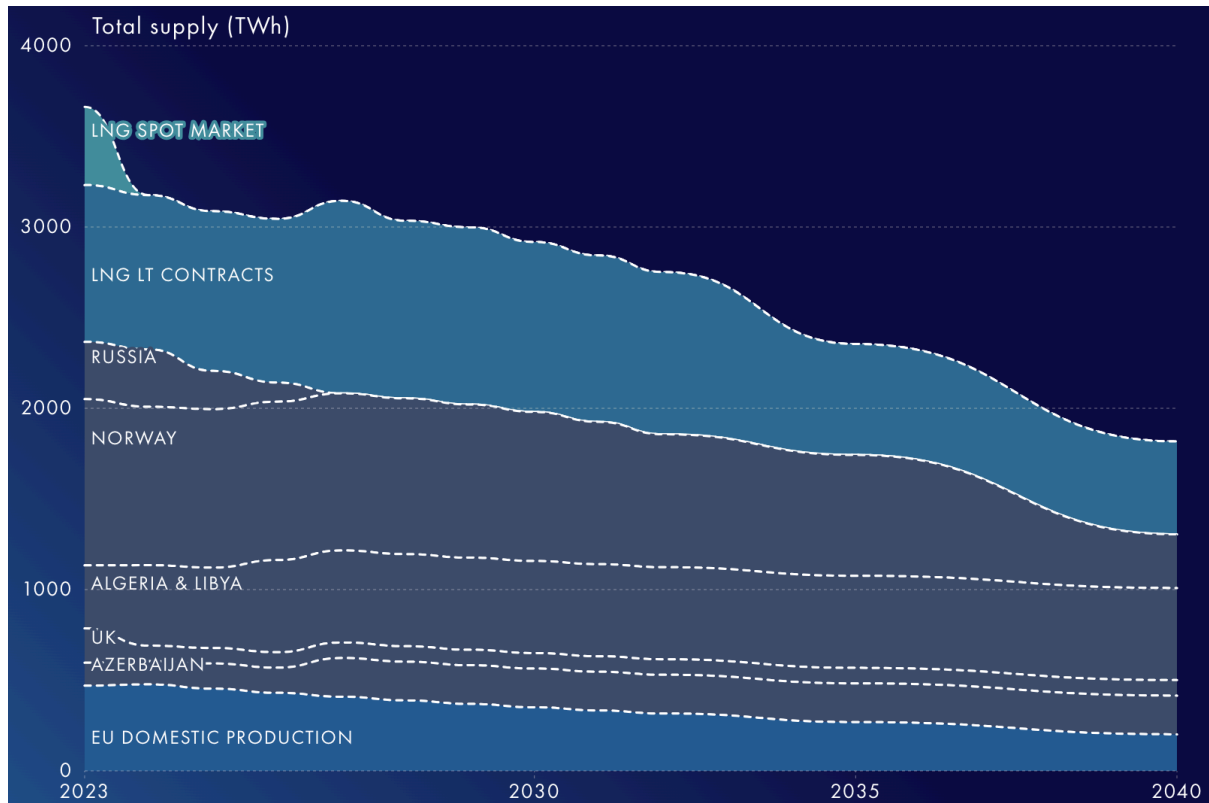


Figure 1. EU gas supply sources by 2040<sup>8</sup>

### Risk of gas overcapacities as the net-zero transition accelerates

More importantly, this additional supply of gas may result in large overcapacities in the coming years as the EU decarbonises. The demand for gas will structurally decline in the decade, and can be fully phased-out in 20 years.

Strategic Perspectives' "Visionary Scenario" – a 90% climate target by 2040 – shows that the EU can largely reduce its consumption of gas by 2040, with a complete phase-out in some sectors, such as power generation (already by 2037) and buildings, by 2040. **The EU can save up to €850 billion on fossil fuel imports.**

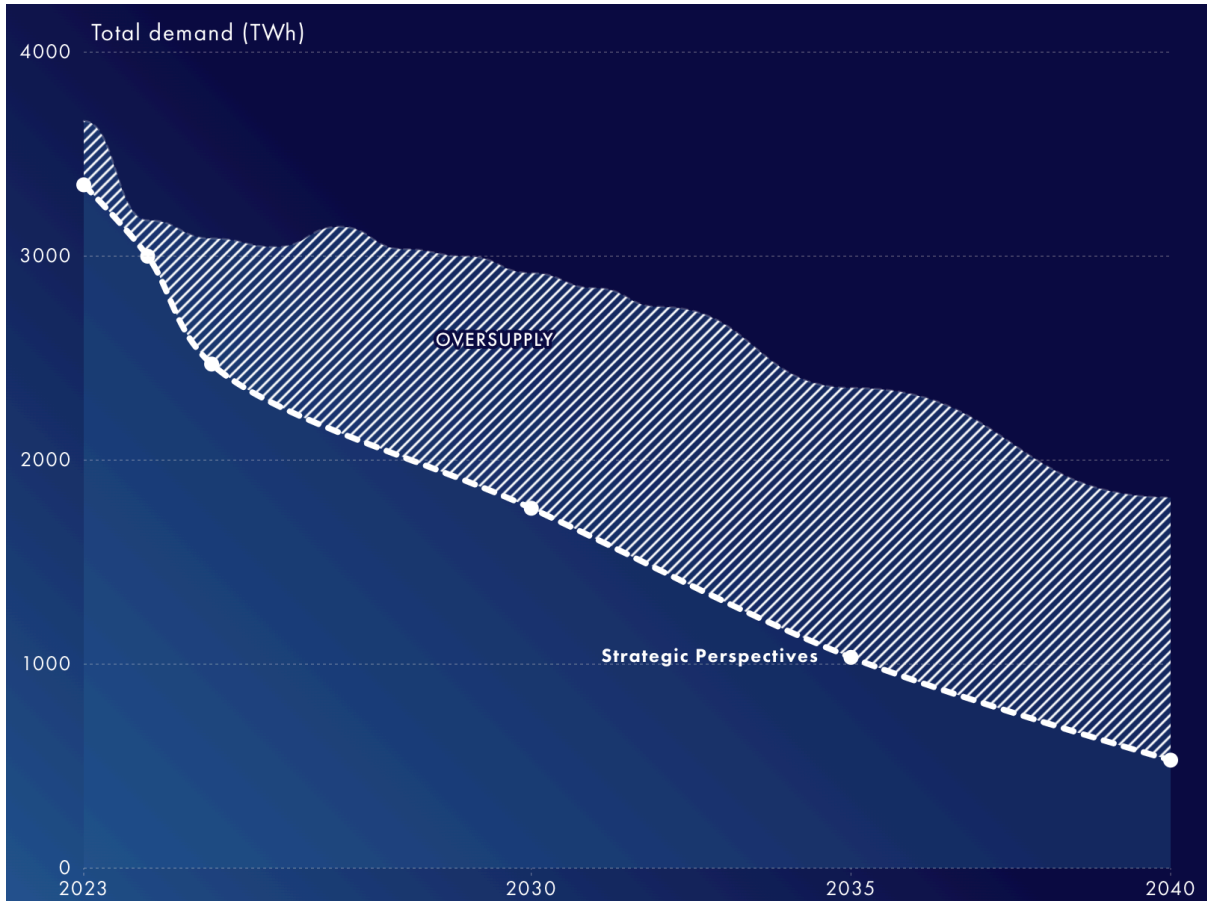
Other scenarios highlight similar trends: both the International Energy Agency (IEA)'s Announced Pledge Scenario and the EU Commission 2040 Impact Assessment show that decarbonisation policies will lead to a structural decline in gas consumption. It is therefore

<sup>7</sup> ECCO. 2024. [The state of the Italian Gas](#).

<sup>8</sup> Russia, Norway, Algeria, Libya, UK and Azerbaijan, represent gas imports via pipelines



crucial for the EU and its Member States to avoid gas deals and investments that would result in gas overcapacities. Instead, it is important to focus on assessing the relevant levers to plan for the decommissioning of gas transport and distribution infrastructures.



**Figure 2. EU gas oversupply, under Strategic Perspectives' Visionary' Scenario**

**There is a risk of gas oversupply in the EU by 2027.** A failure to mitigate this risk could potentially result in stranded gas assets, mainly networks and LNG terminals, as well as potential commitments to gas supply contracts which cannot be honoured.

Careful attention should be paid to the risk of building excessive and oversized infrastructures – additional EU gas infrastructure capacity does not need to surpass 135bBillion cubic metres (Bcm) per year<sup>9</sup> after 2023 – nor sign any new gas deals, such as those planned between the EU and Azerbaijan and Algeria.

### **Structural decline of gas consumption as an energy security asset**

The decline in gas demand in the EU can be enabled by a strong electrification of the economy, efficiency improvements and a massive deployment of renewable energy sources:

<sup>9</sup> ECCO. 2024. [The state of the Italian Gas](#).



- **Electrification of the economy:** According to Strategic Perspectives' Visionary Scenario, approximately half of the EU's economy can be electrified by 2040, largely replacing gas, oil and coal use. In concrete numbers, this means that 86% of the car fleet, 58% of all heating and 63% of the industrial energy demand across the EU will be electrified. This will be possible through the deployment of electric vehicles, heat pumps and electric boilers, among other solutions.
- **Zero-emission electricity production:** To support the electrification of the economy, the power sector will be fully decarbonised by 2037, while electricity production increases to a total production of 4019 terawatt-hours (TWh). A yearly installation of 70 gigawatts (GW) of zero-emission electricity capacities is necessary to support this. Accelerating the deployment of renewable electricity will reduce electricity costs for households and industries by 12% by 2035<sup>10</sup>.
- **Energy efficiency and circularity:** The gas phase-out will require the acceleration of energy efficiency and recycling in various sectors. This must include the renovation of buildings, installation of more efficient equipment, more efficient industrial processes and the creation of a circular economy to help reduce the demand on energy and raw materials for industries.

With these levers, the EU can significantly reduce its dependency on gas, becoming less vulnerable to international energy prices and geopolitical threats. **Gas will represent just 4% of the EU final energy mix by 2040.**

#### **The industry sector will have the most residual gas consumption by 2040.**

Heat pumps, electric boilers, electric cooling systems, green hydrogen and circularity will help drive down gas consumption in the industry sector.

A certain amount of gas is consumed for hydrogen production and, in the meantime, hydrogen is seen as a decarbonisation lever in some industries. This can only happen if hydrogen production is decarbonised as well. Under the Visionary Scenario, 100% of the EU's hydrogen supply must be considered green by 2035, and its usage must be prioritised in sectors which are difficult to electrify, as electrification represents the most cost-effective solution for industry decarbonisation.

#### **2024-2029: An opportunity to draw a new energy security strategy**

The various climate scenarios highlight the possibility of an accelerated decline in gas consumption in the EU. New policies are required to ensure this will be achieved. EU decision makers can assess the impact of the structural gas demand decline on the gas supply and its infrastructures in order to avoid an oversupply of gas assets.

In this context, the EU can:

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<sup>10</sup> Strategic Perspectives. 2024. [Forging Economic Security and Cohesion in the EU](#). Brussels.



- **Launch a zero-emission electrification framework** that sets clear zero-emission electricity and electrification targets and defines clear end targets for coal, oil and gas use per sector. This will provide clarity and predictability to stakeholders.
- **Assess the current and planned LNG supply infrastructures** with any associated supply contracts to avoid long-term contracts lock-ins.
- **Develop a regulatory framework and plan for the decommissioning of existing gas infrastructures**, avoiding stranded assets and infrastructure that is no longer needed.