

Assessment of the national long-term strategies

submitted pursuant to Article 15 of the Governance Regulation

Role of natural gas in the low-carbon transition

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On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany



European
Climate Initiative
EUKI

About WiseEuropa

WiseEuropa Institute is an independent think-tank based in Warsaw that focuses on socio-economic and foreign policy both on the national and European level.

WiseEuropa research areas include:



Social policies and
labour market



Macroeconomic,
industrial and
institutional policies



Digital economy
and innovation



European and
global political and
economic affairs



**Energy, climate
and environment**

Assessment of the LTSs within the Climate Recon 2050 project

CR2050 is led by Ecologic Institute and is implemented together with Energy Policy Group (RO), Jožef Stefan Institute (SI), SEI Tallinn (EE) and WiseEuropa (PL).

The overarching objective of the project is to support national long-term climate-planning and the implementation of national long-term climate strategies (LTSs), while contributing to the harmonization of long-term climate action across the EU.

Within the project, regional analyses have been being carried out, as well as topical analyses.

| Partner | Focus countries for LTS regional analyses |
|------------|-------------------------------------------|
| EPG | RO+BG |
| WiseEuropa | PL+CZ+SK+HU |
| SEI-T | LT+LV+EE |
| JSI | SI+HR+AT |

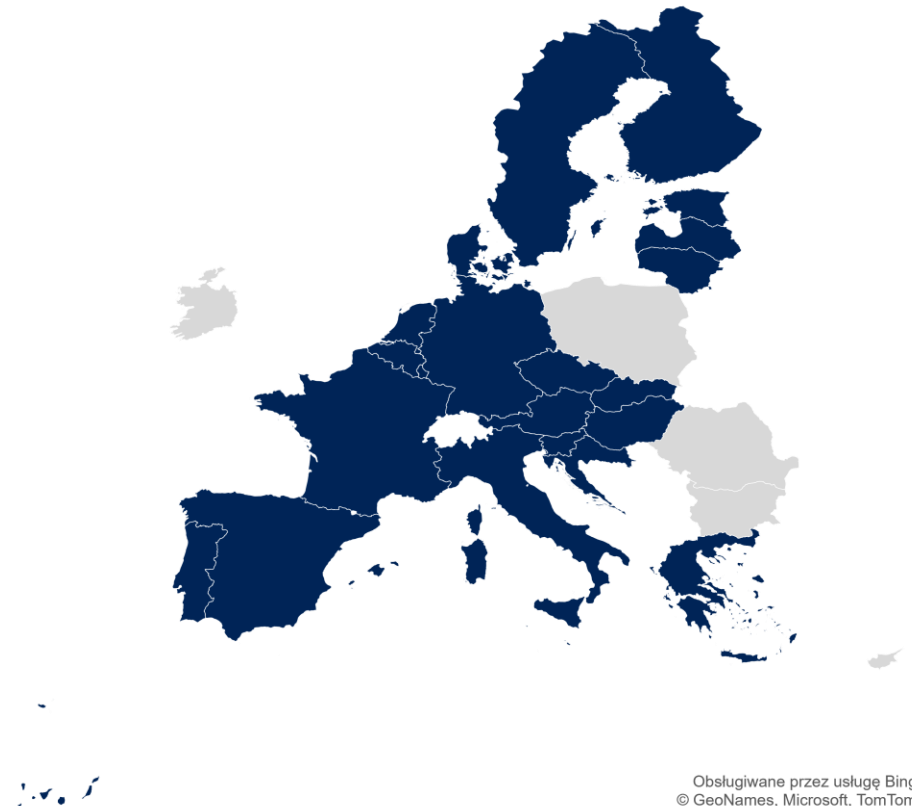
More info on project website: <https://www.climatedialogue.eu/>

Topical analysis – the role of natural gas

The assessment covers all EU Member States, that submitted long-term strategies to the European Commission. A **Long-term strategy** is an economy-wide low-carbon strategy with perspective to 2050. The obligation to create long-term strategies was imposed on the Member States in the Governance Regulation (of 11 December 2018).

As for April 1, 2022, 22 EU Member States complied with this obligation. We are still waiting for **Bulgaria, Cyprus, Ireland, Poland** and **Romania**. The draft of Polish LTS has been however disclosed to WiseEuropa.

The general aim of this topical analysis is to provide an overview and **assessment of policies towards natural gas envisaged in the LTSs** and hence to support the process of updating the LTSs through mapping cross-cutting issues and preparing set of recommendations ahead of the update, which should happen **every five years**, where necessary.



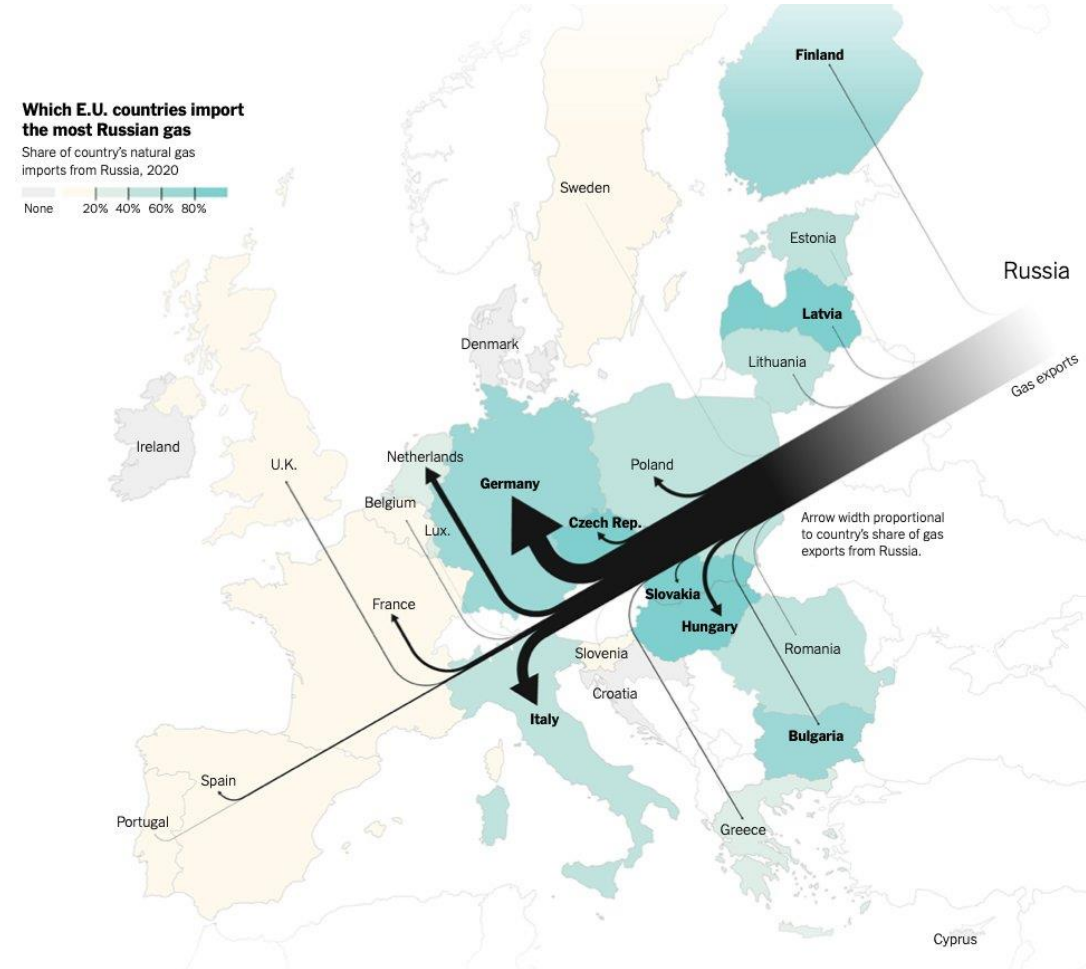
Why is natural gas a burning issue?

1) Due to its attractiveness as a quick and easy solution as a substitute for coal and oil, while still being a fossil fuel

2) Because the EU's demand for natural gas is to a large extent satisfied by imports, mainly from Russia

In 2019 the domestic production of natural gas in the EU was 17% of GIC and the share of natural gas imports from Russia in total natural gas imports to the EU was 38%.

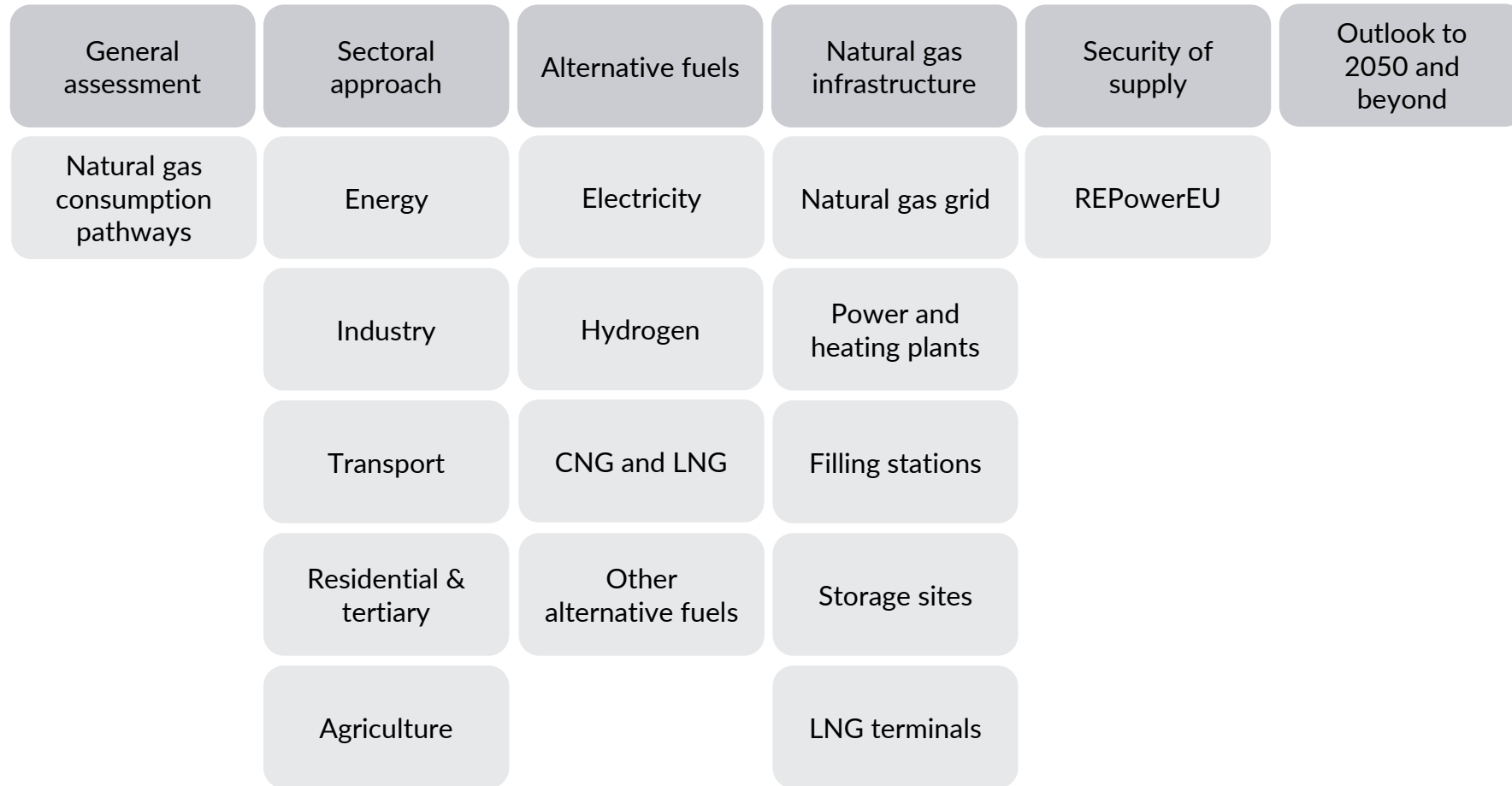
This exposure to supply from Russia and natural gas consumption itself became problematic upon the Russian invasion of Ukraine.



Source: The New York Times

Analytical approach we took

The strategies have been assessed in six areas:



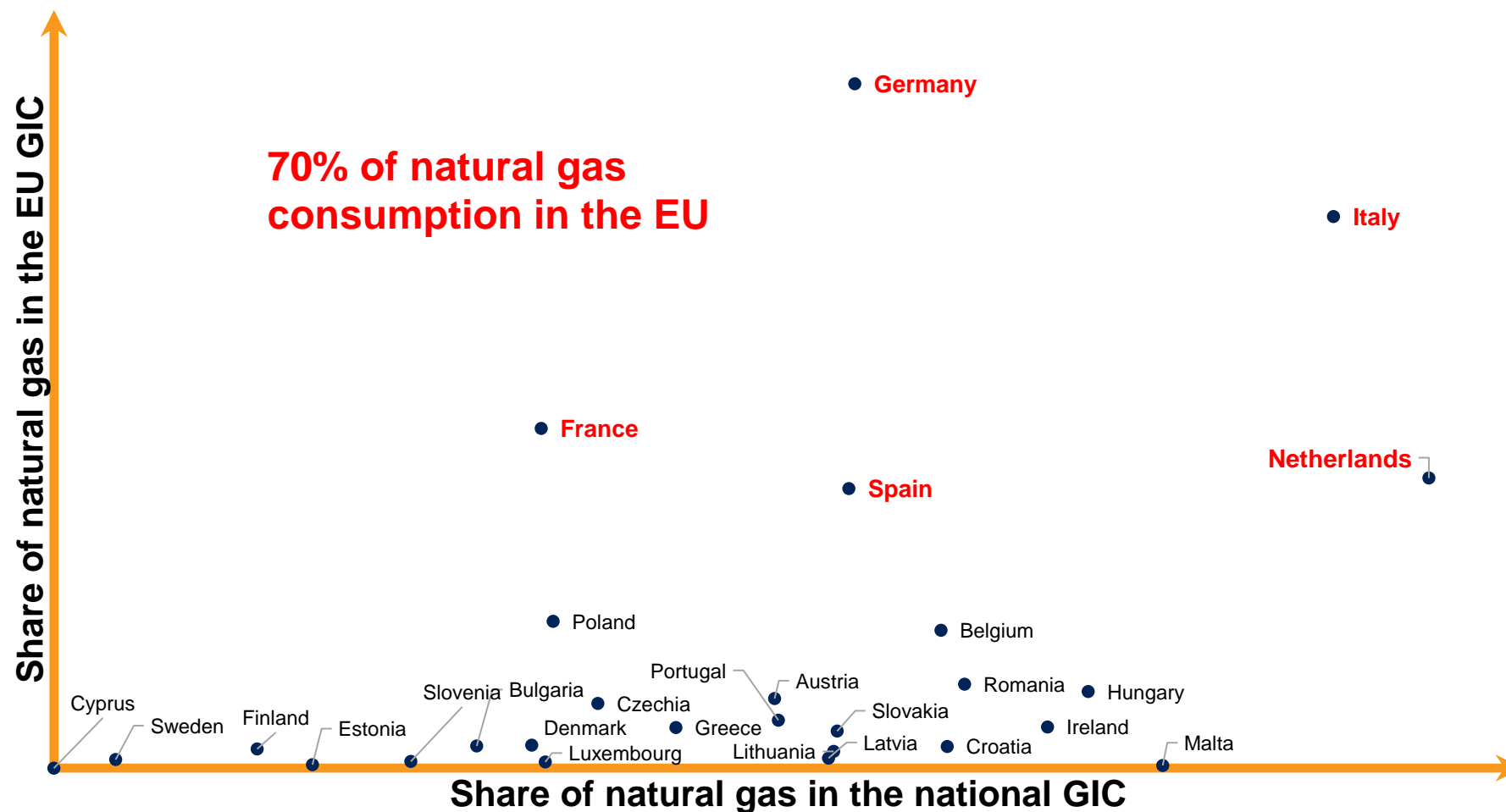
Impediments to our analytical approach

- 1) The LTSs seem to be underdeveloped in terms of climate targets tailored for particular sectors and fuels, like natural gas
- 2) Very rarely are the exact numerical projections on natural gas consumption provided in the LTSs
- 3) The LTSs vary in terms of methodological approach and structure which makes them difficult to compare against each other
- 4) In some EU Member States different emission reduction scenarios are put into consideration without specifying preferred pathway
- 5) Different dates of adoption of the LTSs, which results in significant differences in level of ambitions and affects their topicality in terms of decision- and policy-making

Therefore, in the provided overview sometimes we could only deduce natural gas consumption pathways from proposed measures and we could rather discuss than assess the policies towards natural gas.

Natural gas consumption in the EU

Top European natural gas consumers should provide the best coverage of the natural gas issue in their LTSs



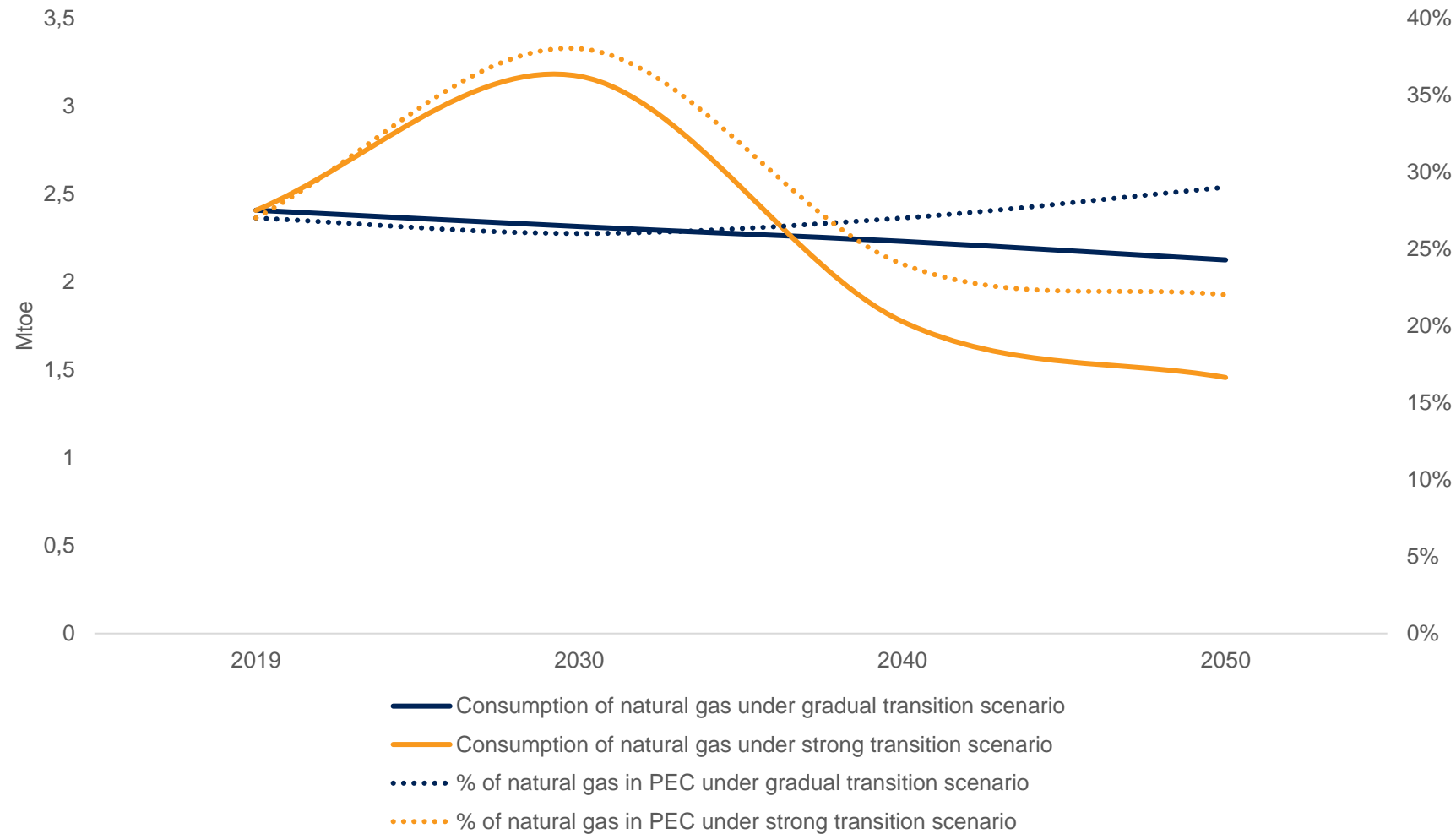
Natural gas consumption pathways (1)

| Country | No significant mention of NG | NG becomes a transition fuel | NG phase-down path is entered | Substantial amounts of NG to remain in 2050 | The share (%) of NG in GIC in 2019 |
|------------------------------------------------|------------------------------|------------------------------|-------------------------------|---------------------------------------------|------------------------------------|
| EU average | | | | | 23% |
| Austria | | | | | 22% |
| Belgium | | | | | 27% |
| Croatia | | | | | 27% |
| Czechia | | | | | 17% |
| Denmark | | | | | 15% |
| Germany | | | | | 25% |
| Greece | | | | | 19% |
| Hungary | | | | | 32% |
| Italy | | | | | 39% |
| Luxembourg | | | | | 15% |
| Netherlands | | | | | 42% |
| Portugal | | | | | 22% |
| Sweden | | | | | 2% |
| Countries that did not submit the LTS | | | | | |
| Cyprus | | | | | 0% |
| Ireland | | | | | 30% |
| Not applicable | | | | | |
| Depending on the scenario/to be considered yet | | | | | |
| Adopted | | | | | |

Key findings

- Member States in their LTSs provide wide range of natural gas consumption pathways
- According to the LTSs, at least 10 EU Member States might undergo a **temporary switch to natural gas** at the expense of other fossil fuels or nuclear power
- In the longer term, however, **every EU country may enter the natural gas phase-down path**
- The **natural gas phase-out**, not including essential and negligible natural gas residues in hard-to-abate sectors, is expected to be achieved in 9 EU Member States
- Overall, the natural gas consumption is to be significantly reduced in the EU by 2050
- 6 countries, including such important gas consumers as **the Netherlands**, failed to address the natural gas issue

Natural gas consumption pathways (2): Croatia



Sectoral approach (1)

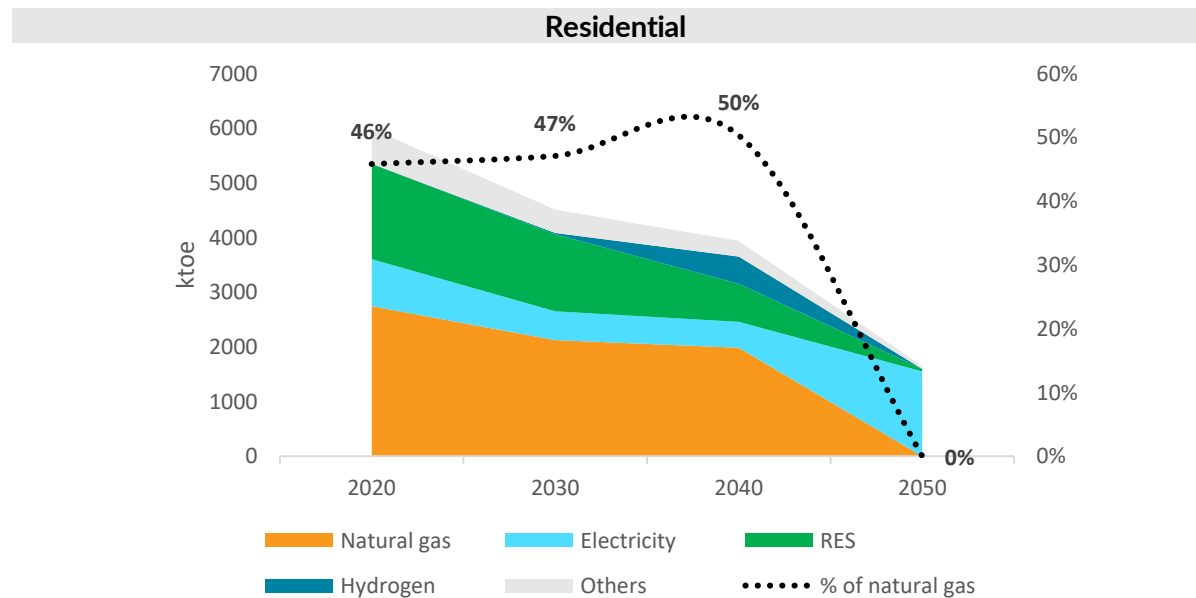
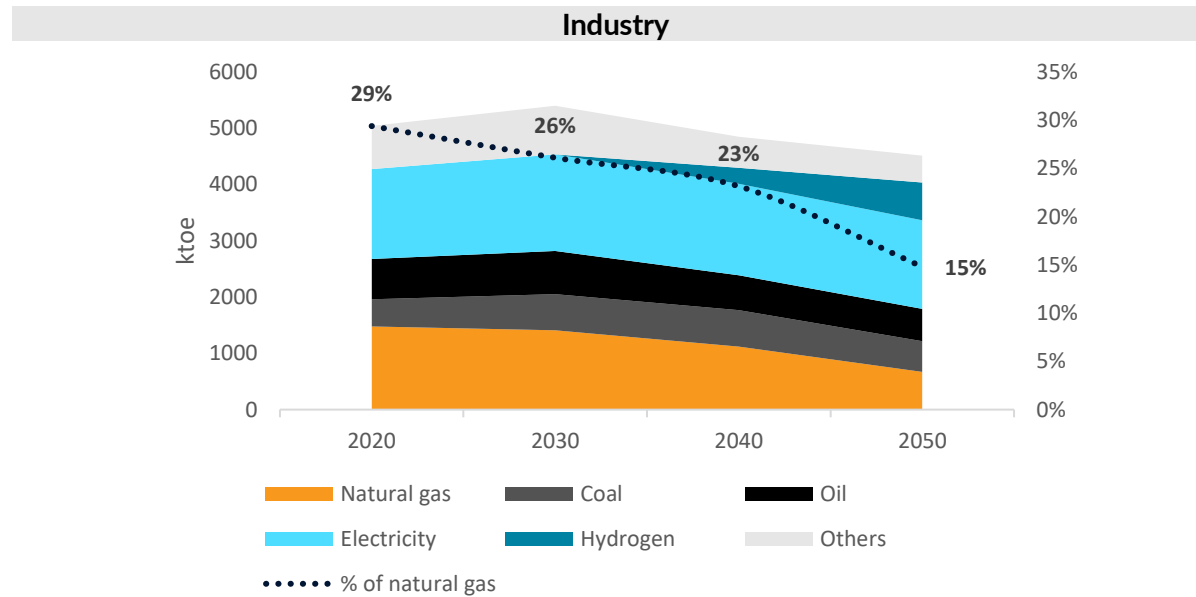
Coverage of particular sectors in terms of natural gas in the LTSs, given the current share of natural gas in these sectors

| Country | Energy | Industry | Transport | Residential & tertiary | Agriculture |
|----------------------------------------------------------------------------|--------|----------|-----------|------------------------|-------------|
| EU average | 8% | 28% | 1% | 31% | 13% |
| Austria | 10% | 32% | 3% | 19% | 5% |
| Belgium | 7% | 29% | 1% | 41% | 33% |
| Croatia | 15% | 47% | 0% | 22% | 9% |
| Denmark | 7% | 28% | 0% | 13% | 5% |
| Germany | 7% | 30% | 1% | 37% | 7% |
| Greece | 7% | 22% | 0% | 9% | 1% |
| Hungary | 13% | 29% | 2% | 50% | 19% |
| Italy | 18% | 29% | 3% | 47% | 5% |
| Portugal | 15% | 22% | 0% | 10% | 1% |
| Slovenia | 4% | 31% | 0% | 9% | 0% |
| Estonia | 3% | 19% | 1% | 9% | 4% |
| Latvia | 46% | 11% | 0% | 13% | 2% |
| Lithuania | 3% | 55% | 1% | 11% | 18% |
| Malta | 87% | 0% | 0% | 0% | 0% |
| Netherlands | 9% | 30% | 1% | 58% | 52% |
| Countries that did not submit the LTS | | | | | |
| Romania | 11% | 33% | 0% | 34% | 19% |
| Sector not covered in the LTS in terms of natural gas | | | | | |
| Natural gas issue is addressed in the strategy outlined for a given sector | | | | | |

Key findings ↓

- Natural gas-fired **power and heating plants** are to replace those fired by coal
- In the **industrial sector** natural gas is commonly perceived as an alternative for coal in high-temperature processes which cannot be electrified
- When it comes to the **transportation**, EU Member States agree that CNG and LNG are only to be temporarily consumed as transition fuels
- Natural gas is to play a marginal role in the **residential & tertiary** in the long term
- EU Member States have in general ignored the role of natural gas in the **agricultural sector**
- Some EU Member States also failed to address natural gas issue although its importance in a given sector (e.g., **Latvia** in the **energy sector**)

Sectoral approach (2): Hungary



Alternative fuels

Key findings ↓

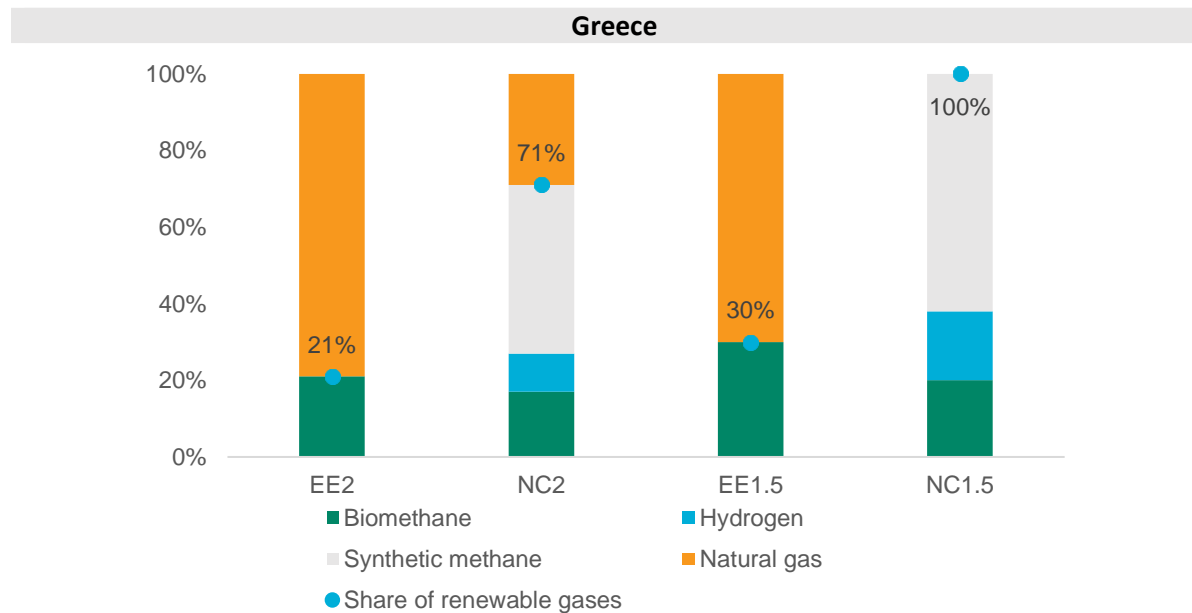
- Alternative fuels can replace natural gas as low or even zero carbon alternative
- **Electricity** will prevail in FEC. This may translate into increased consumption of natural gas in those countries, which aim for using natural gas in the electricity generation
- Primarily hydrogen, and then other alternative fuels are to replace natural gas in sectors which are hard to electrify or as an operating reserve
- **Hydrogen is not to be derived from natural gas**, especially in the long term; renewable hydrogen will be promoted
- Denmark, Estonia, Latvia, Finland and Sweden did not prove to recognize the role of alternative fuels for the low-carbon transition

| Country | Share of electricity in FEC | | |
|----------|-----------------------------|--------|--------|
| | 2019 | 2030 | 2050 |
| Croatia | 19% | 22-24% | 36-47% |
| Greece | 26% | ND | 45-58% |
| Hungary | 17% | 22-24% | 48-54% |
| Italy | 21% | ND | 55% |
| Portugal | 23% | 33% | 67% |

Natural gas infrastructure

Key findings ↓

Renewable gases in the natural gas grid in different scenarios



- Natural gas infrastructure can be adapted to alternative fuels
- **Blending** natural gas with alternative fuels in the natural gas grid is a commonly recognized opportunity
- The possibility of switching power and heating plants, filling stations and storage sites to alternative fuels is mentioned only by a few countries
- The issue of **LNG terminals** is completely neglected, although they already operate or their commissioning is due in 18 EU Member States

Security of supply (in view of the REPowerEU)

REPowerEU

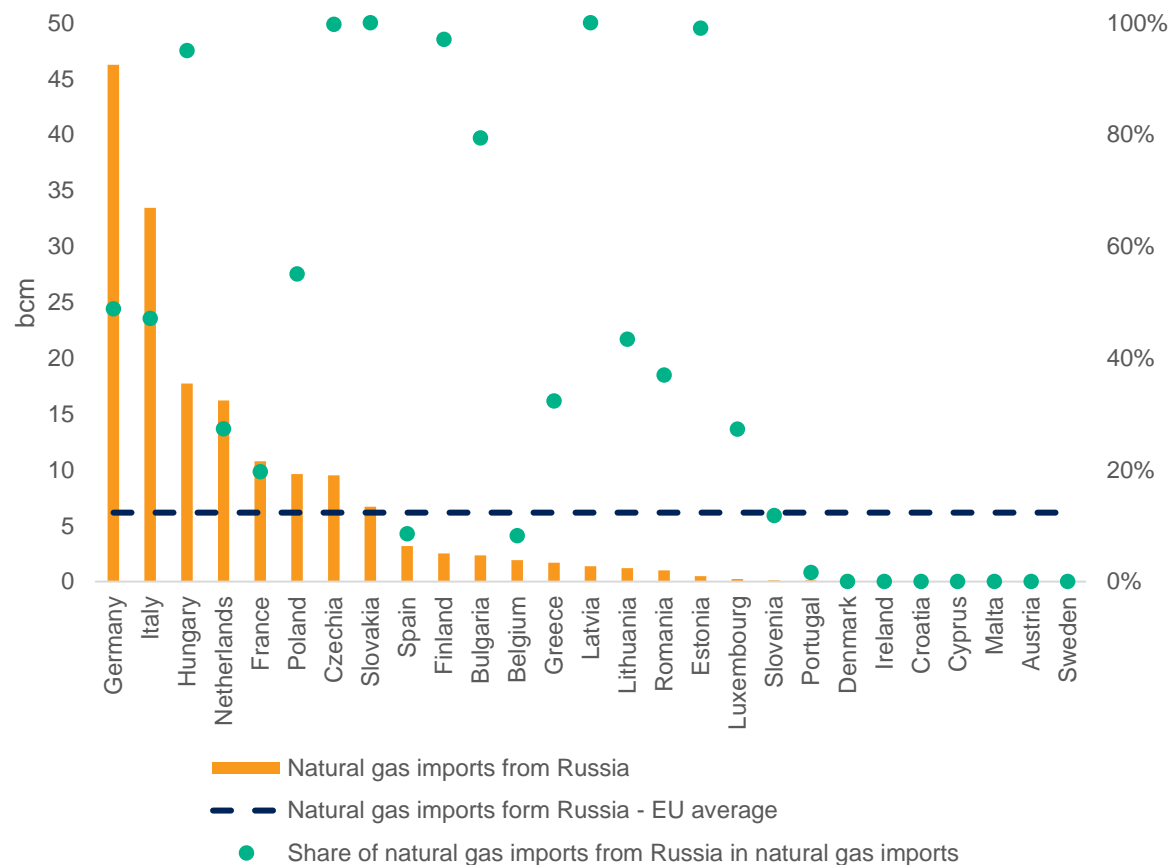
- Higher LNG and pipeline imports from non-Russian suppliers
- Doubling the EU ambition for **biomethane** to produce 35 bcm per year by 2030
- Decarbonising industry by accelerating the switch to electrification and renewable hydrogen
- Replacing demand for Russian gas with additional 10 Mt of imported renewable hydrogen from diverse sources and additional 5 Mt of domestic renewable hydrogen
- Rolling out 10 million heat pumps in the next five years to help European families reduce their dependency on gas and lower their energy bills

Key findings ↘

- The security of supply of both gas and alternative fuels is barely covered in LTSs
- Even if this issue is discussed, the EU Member States do not go into details

EU's dependence on Russian natural gas

Russian natural gas imports by country, 2019

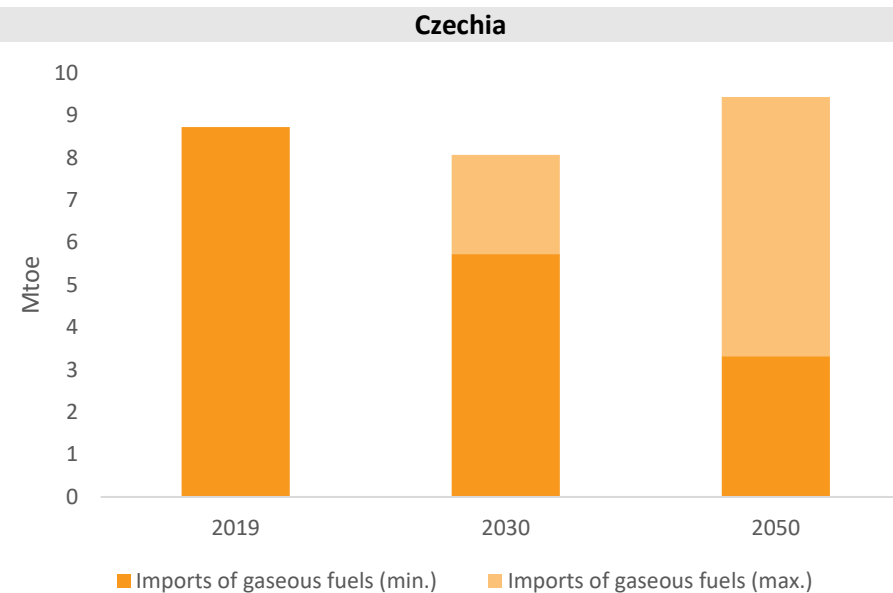
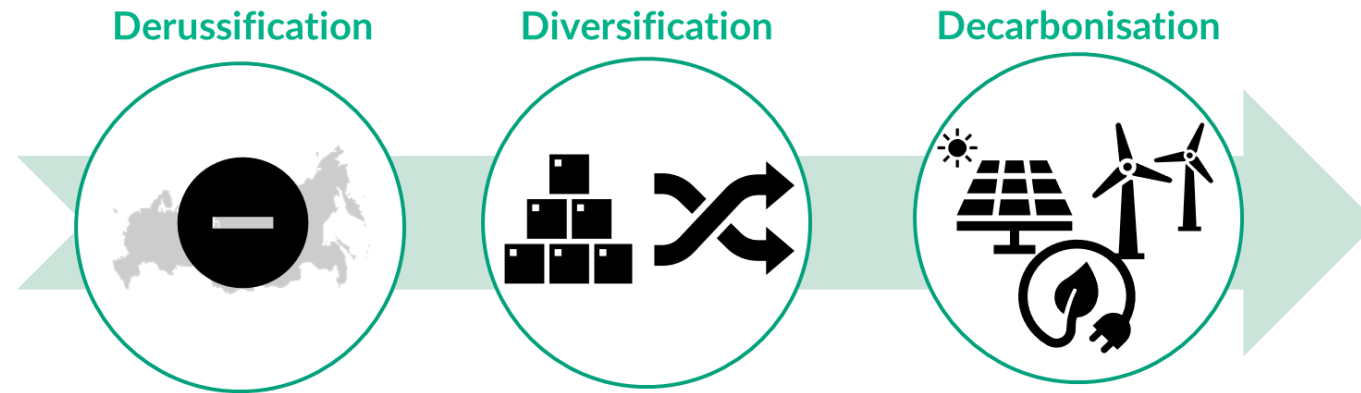


Key findings

- The countries which rely most on Russian natural gas are:
Hungary, Czechia, Slovakia, Finland, Latvia and Estonia
- In the case of these countries the share of natural gas imports from Russia amounts to **nearly 100%**
- One should not however overlook **Germany, Italy, Poland and Bulgaria**, where this share is also substantial, especially given the volume of natural gas consumption

Do the LTSs comply with the 3D principle?

3D principle for the trade policy of the EU



Natural gas in the EU in 2050 and beyond

Key findings ↓



- Natural gas residues in the **industrial sector** can be a common phenomenon in 2050
- Natural gas-fired plants will remain operational in 2050 and beyond as **operating reserves**, especially since it is technically feasible to start up and shut them down quickly
- Natural gas-fired plants **integrated with CCS/CCU installations** are considered a low-carbon opportunity in the long term
- **CEE and Southern European** countries are to remain dependent on natural gas by 2050. These are in general countries which currently import proportionally large quantities of natural gas from Russia

Summary, recommendations, conclusions

The first wave of the LTSs shows significant potential for further improvements.

Top European
natural gas
consumers should
better address the
natural gas issue

As for now, the coverage of the natural gas issue by top natural gas consumers in the EU, i.e. Germany, Spain and notably the Netherlands is unsatisfactory. **These three states account for 40% of natural gas consumption in the EU** and effective natural gas phase-down will not happen without well-designed actions taken by them

Role of natural gas
should be revised in
view of the
REPowerEU

Since the EU's dependence on Russian natural gas is coming to an end, EU Member States should reconsider whether they should adopt natural gas as a transition fuel (especially as a substitute for nuclear power in Belgium and France) and should promote faster switch to alternative fuels. **A U-turn in natural gas consumption is highly recommended**

The security of
supply should be
discussed in more
details

The updates should also take into account the new Commission's policy orientation and cover the issue of security of supply, including underground gas storage, to a sufficient extent. Describing the potential offered by LNG terminals is advisable



Next steps

- Publication of the report on the role of natural gas in the national long-term strategies of EU Member States
- Further works on regional analyses

Thank you for your attention

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