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Evolution of European regasification infrastructures : our vision for the future

Une société de ENGIE

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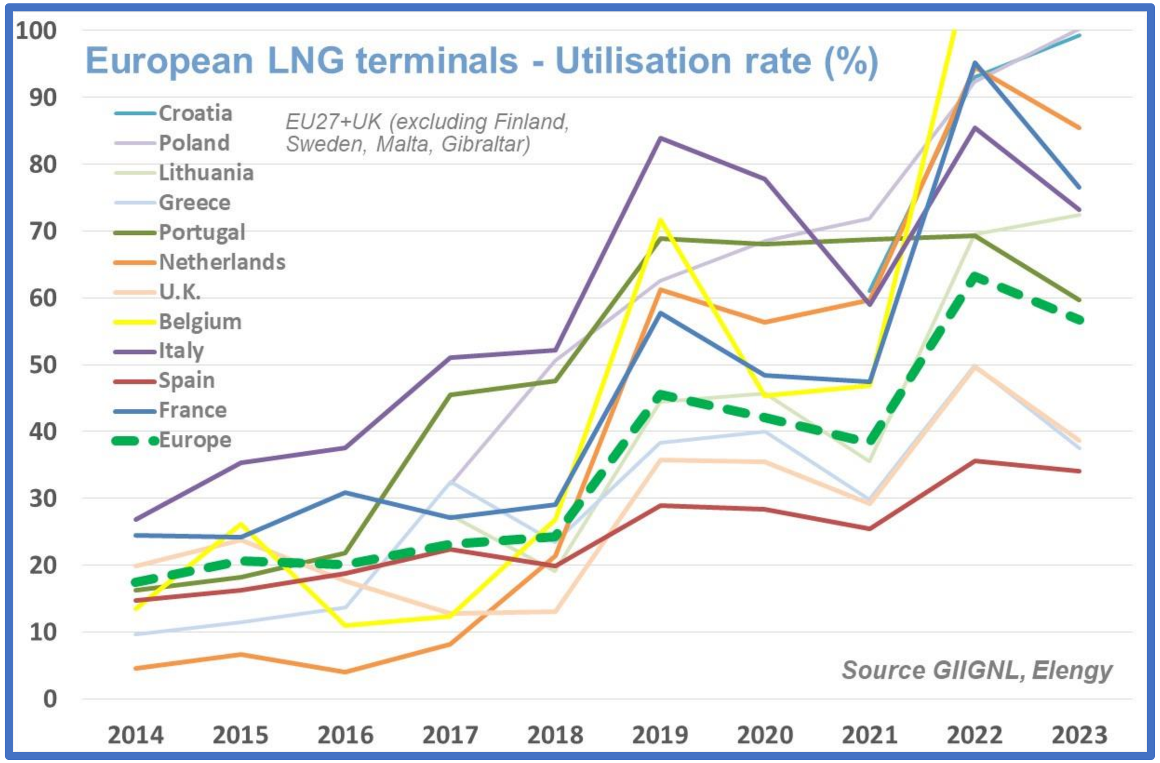
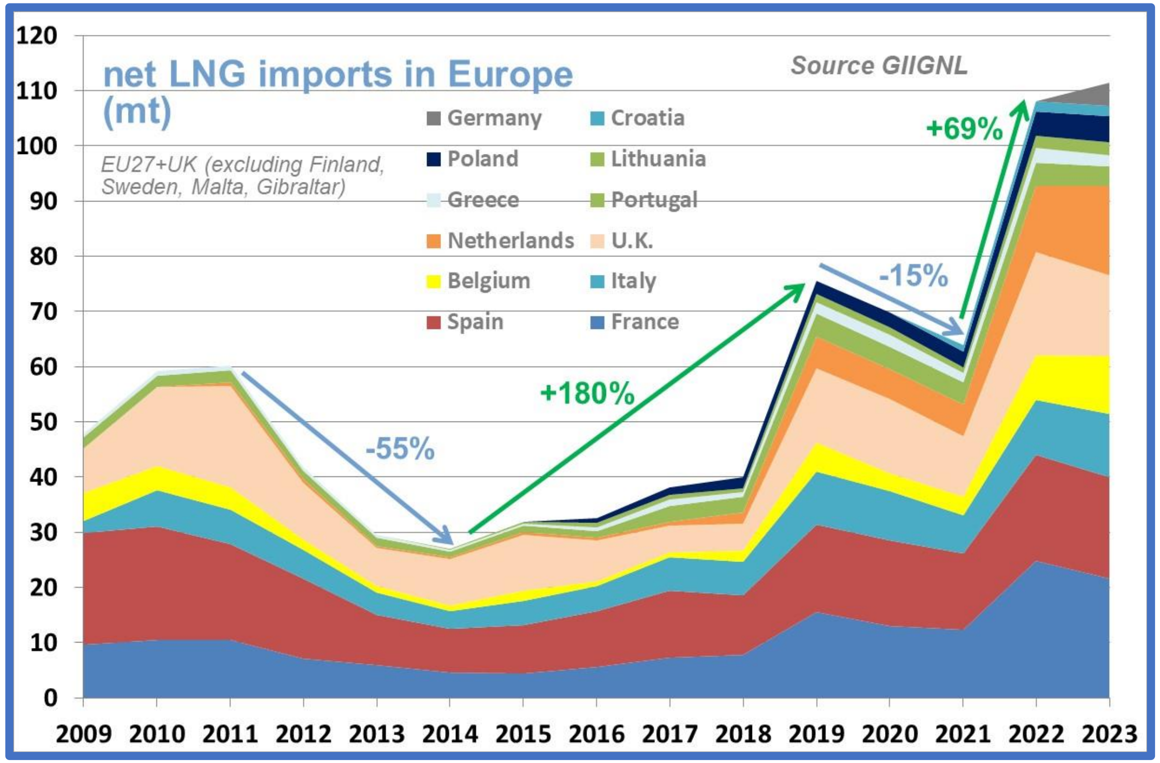
2022-23: record years for LNG imports in Europe!





2023: growth linked to the new infrastructures and new actors within LNG imports (e.g. Germany…)

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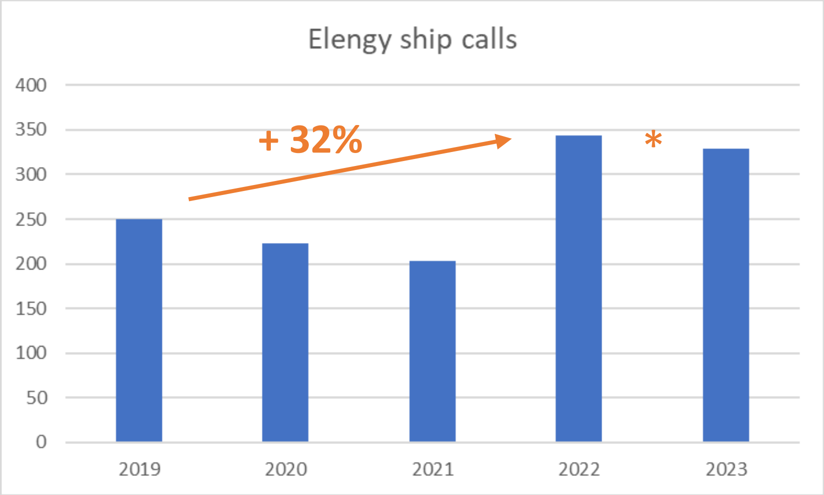
2022-23: record years for Elengy

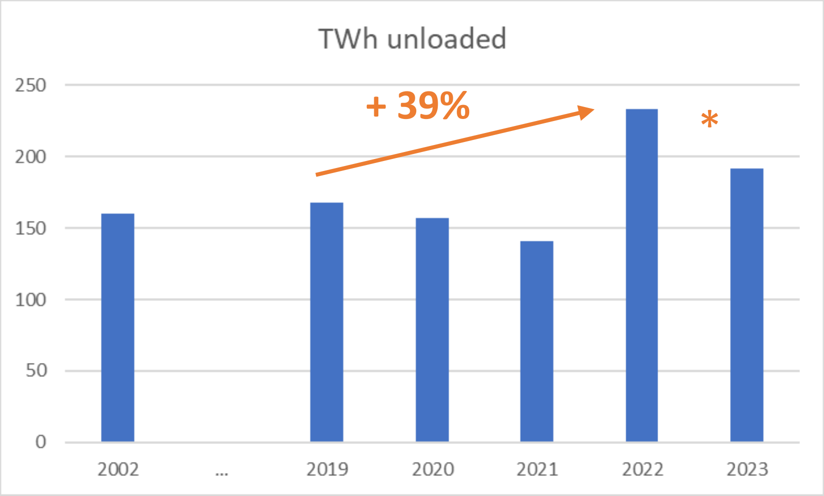


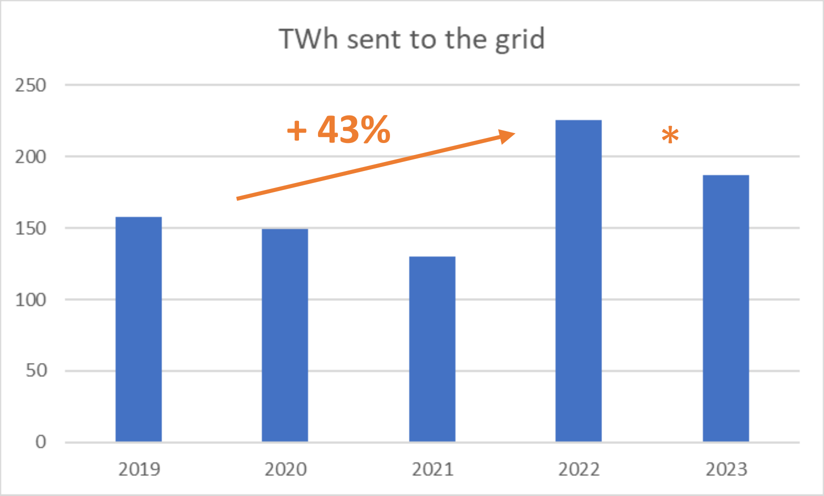
Elengy in 2022 = 95% utilization rate

- 18,1 Mt(LNG) handled (unloading + transsphipment + reloading) all time high!
- *vs 11 Mt in 2021* => +64%

*** 2022/2023 small inflection =** impacts of infrastructure availability + lower consumption + filling of European storage facilities

but 2023 still a record year!





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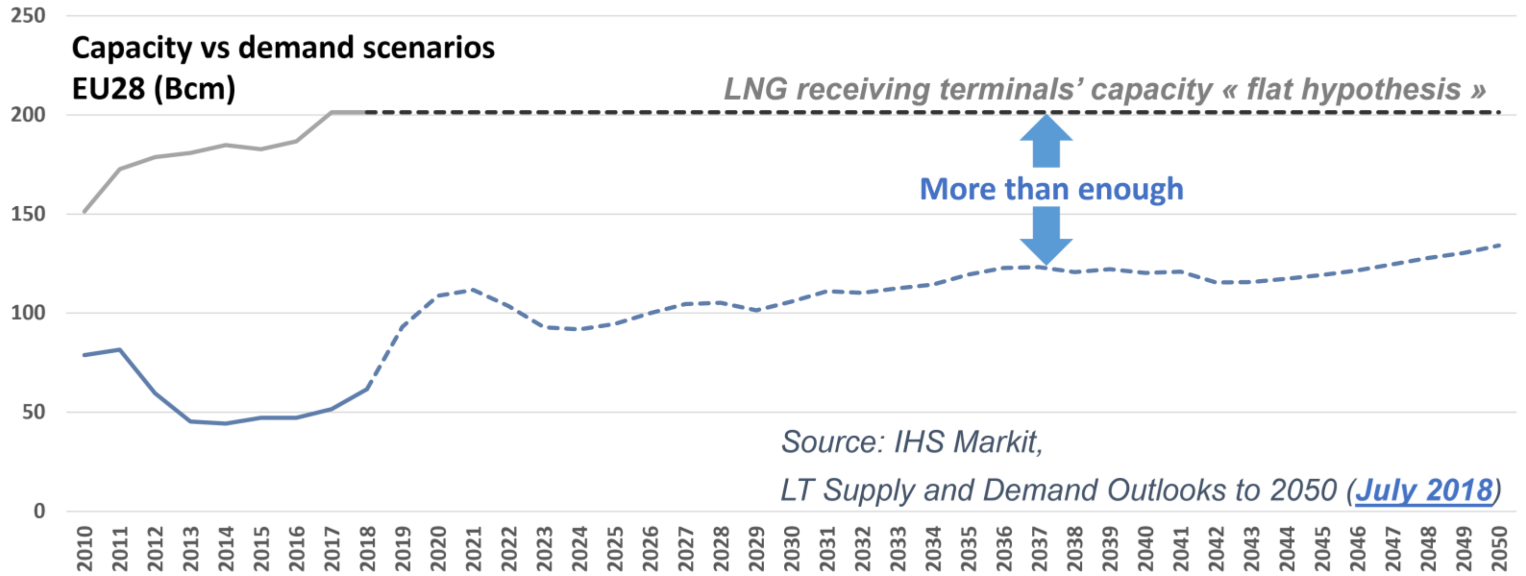
[2018 - Look back] European LNG import terminals: potential for significant growth?



2018 answers for new capacity question *(greenfield or brownfield, onshore or FSRU, …):*

↳ **[why not]** specific regional needs, seasonality, flexibility, "new" usages (LNG-as-fuel, …),…

[BUT] CAPEX, competitiveness, project risks, NIMBY, construction lead-time, …

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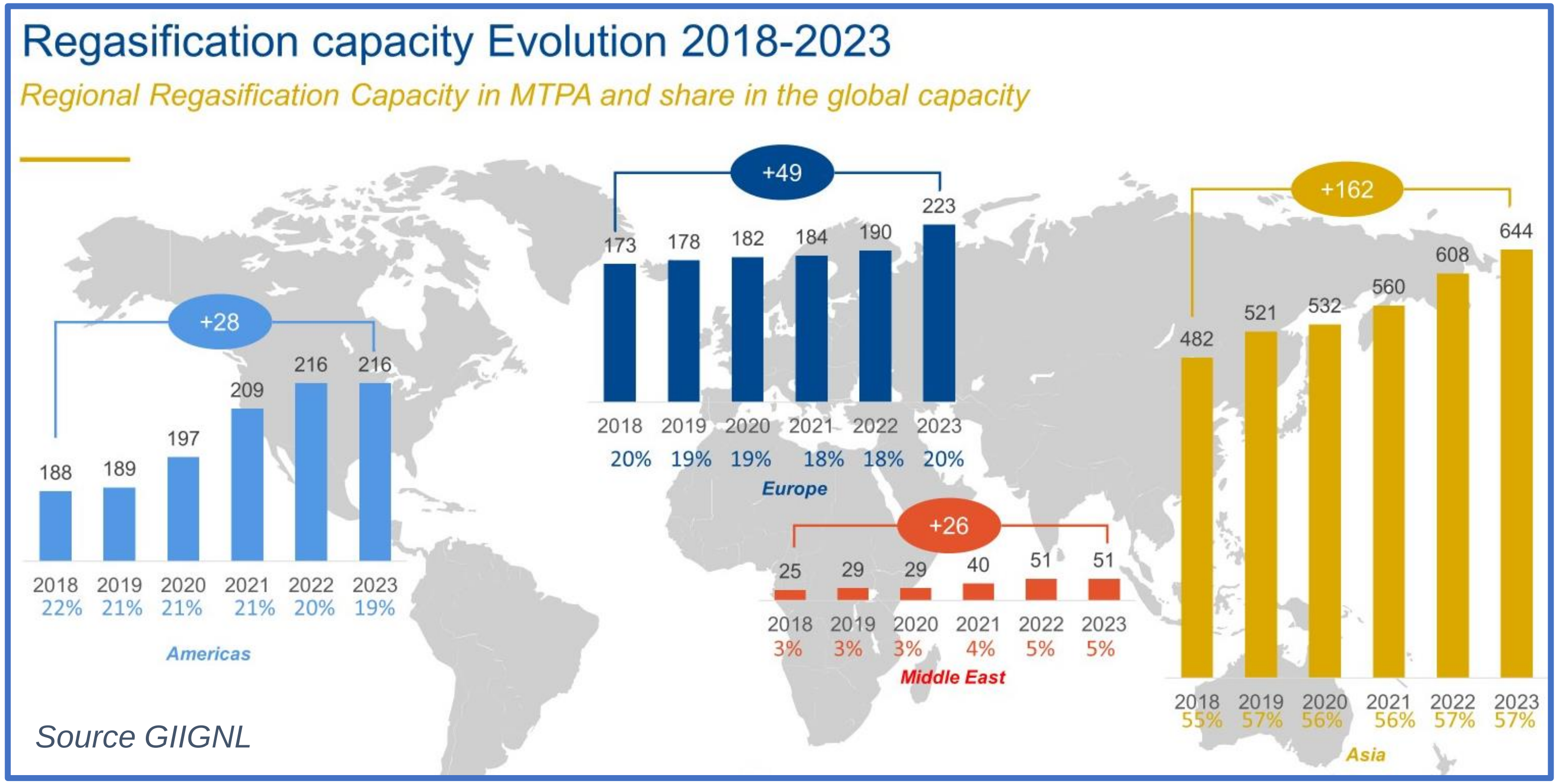
[2023] Incremental regas capacities in Europe as a short-term response to the crisis



2023 : record number of new receiving terminals

- +17 terminals in 2023 worldwide, accounting for +68 MTPA
- 43 MTPA (63%) of new receiving capacity is floating based
- **48% of new capacity located in Europe**
- Fast-developed floating LNG solutions (France, Finland, Germany, Italy)

✓ EemsEnergy Terminal (Netherlands):
1st LNG in Sept. 2022
=> project completed in 6 - 7 months!
12 unloadings in 2022 and 68 in 2023

✓ Germany was the geographic "white zone" for LNG in Europe:
from 0 LNG terminal before the crisis
to 5 FSRU as of March 2024,
and 6th planned for April!

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Subscriptions: Elengy case study

- Within the context of the Ukrainian crisis and the need for receiving regas capacity in Europe, Elengy undertook technical and scheduling **optimization** in its three LNG terminals to propose prompt capacity when possible:

  ✓ Montoir LNG Terminal = +1,3 TWh over May to July 2022 period

  ✓ Fos Tonkin LNG Terminal = +2 TWh in 2023

  ✓ **Fos Cavaou LNG Terminal** = +30 TWh p.a. (= 2,0 mtpa or **2,5 Bcm/y**), with three steps:

  ↳ A technical **debottlenecking** was sped up by 2 years to make the incremental commercial capacity available as soon as May 2022

  ✓ In addition to Open Seasons for long term capacities, first auction procedures for prompt deliveries, including ascending auction mechanism on PRISMA platform (December 2022)

=> 2022 was an exceptional commercial year with 37 unloadings sold for 2022, 52 for 2023-24 and 448 for 2025-2040

European infrastructure operators have shown a high level of reactivity and flexibility and provided innovative solutions to face an unprecedent situation.

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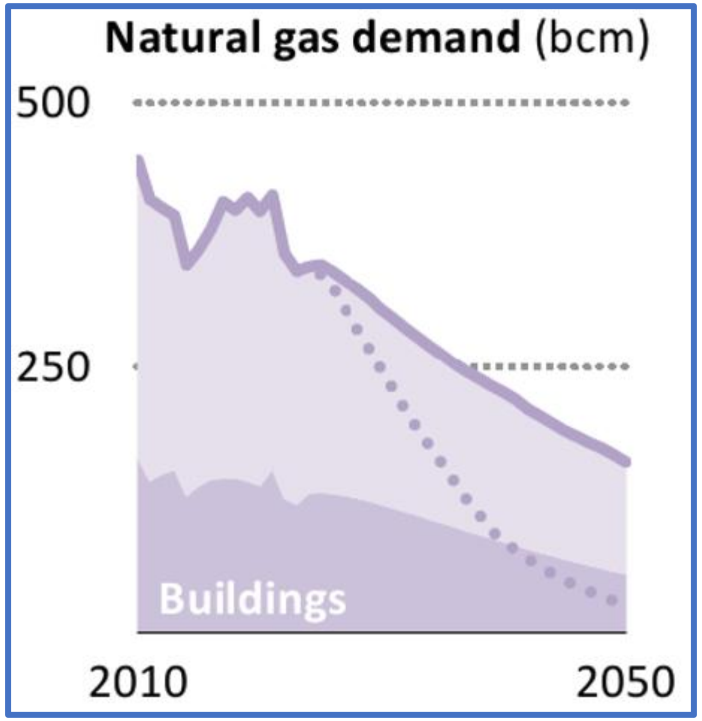
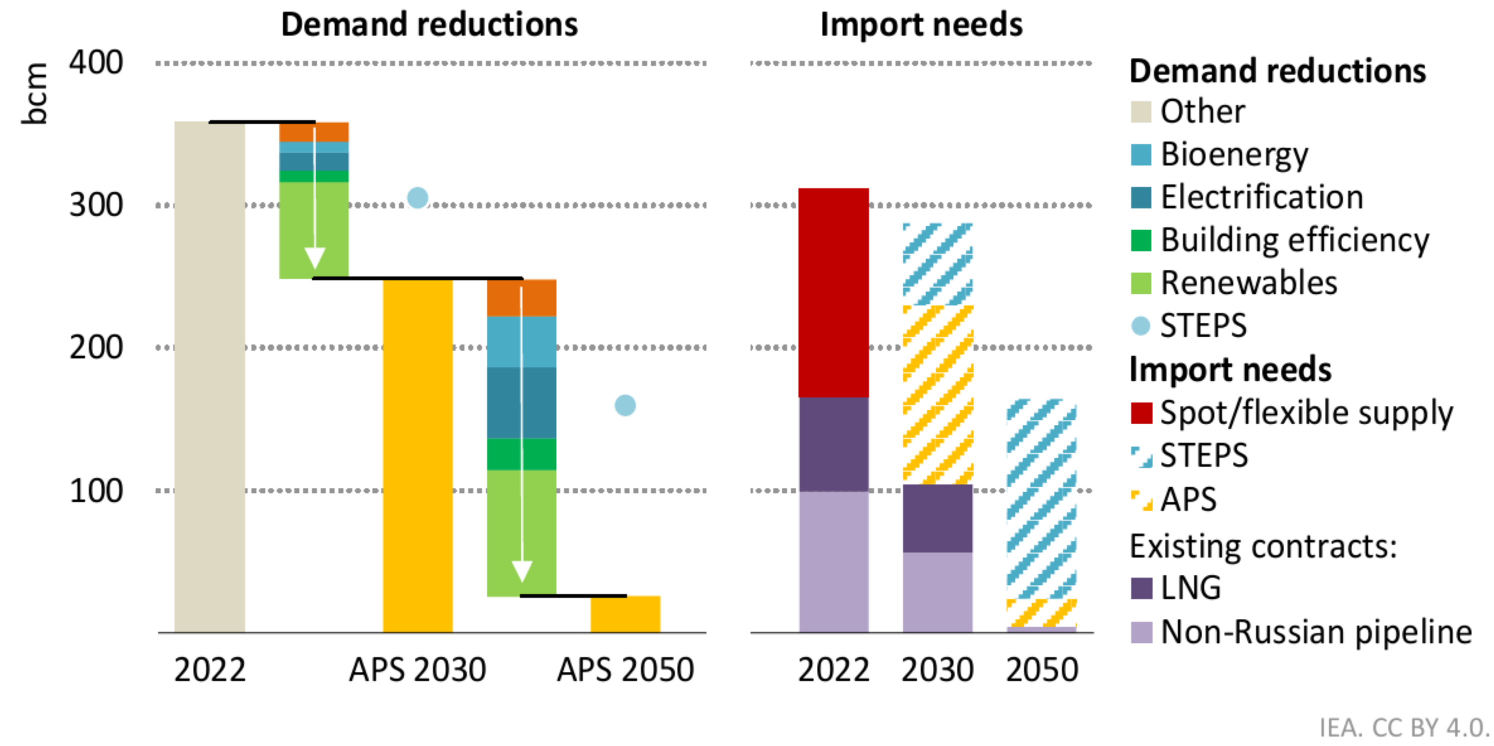
What next for the natural gas balance in Europe?

Key trends in the European Union, 2010 – 2050



Source IEA, World Energy Outlook 2023

Figure 5.9 ▷ Drivers of natural gas demand reduction and import needs by scenario in the European Union



The EU's natural gas contract balance is determined by the pace and scale of demand reductions and the willingness of EU buyers to rely on global spot markets

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Building our vision through customers expectations and neutral carbon targets

Evolution of our customer expectations

- From an upstream / logistics vision of LNG (as a cargo) to a downstream gas market vision;
  From "home for LNG" to optimization of send-out
- Freeing from physical / technical constraints, financial hedging, need for visibility, etc.
- From
  - ➯ Security of Supply in the 2000s, to
  - ➯ Flexibility / optionality in the 2010s, to
  - ➯ Security of Supply again nowadays, but keeping the previous achievements on flexibility / optionality

Energy Transition and Decarbonization

- 2020's: Energy Transition and gas crisis
  - ➯ Declining demand, volatility, uncertainty…
  - ➯ Huge challenges:
    Infrastructures and market need to adapt!

➢ Development of green gases & e-fuels

➢ Insurance role / value of receiving terminals

➢ Adapt terminals to their new role

Elengy terminals, decarbonization hubs

A transformation underway!

Today

- ✓ **Strong demand** on LNG terminals facing the energy crisis
- ✓ Development of road and maritime **LNG mobility**

2030

- ✓ **“Normal” demand** on LNG terminals
- ✓ Start-up of **new gases** projects (CO_2…)
- ✓ Development of **bioLNG**

2040

- ✓ LNG imports depending on **hazards**, decarbonization **delays** and **peak periods**
- ✓ Acceleration of **decarbonization hubs**
- ✓ **e-methane** and import of **e-ammonia**

2050

- ✓ **Insurance role** of LNG terminals in the energy system
- ✓ **Import hubs** for liquefied low-carbon molecules (e-LNG, NH_3, H_2, etc.) and CO_2 export