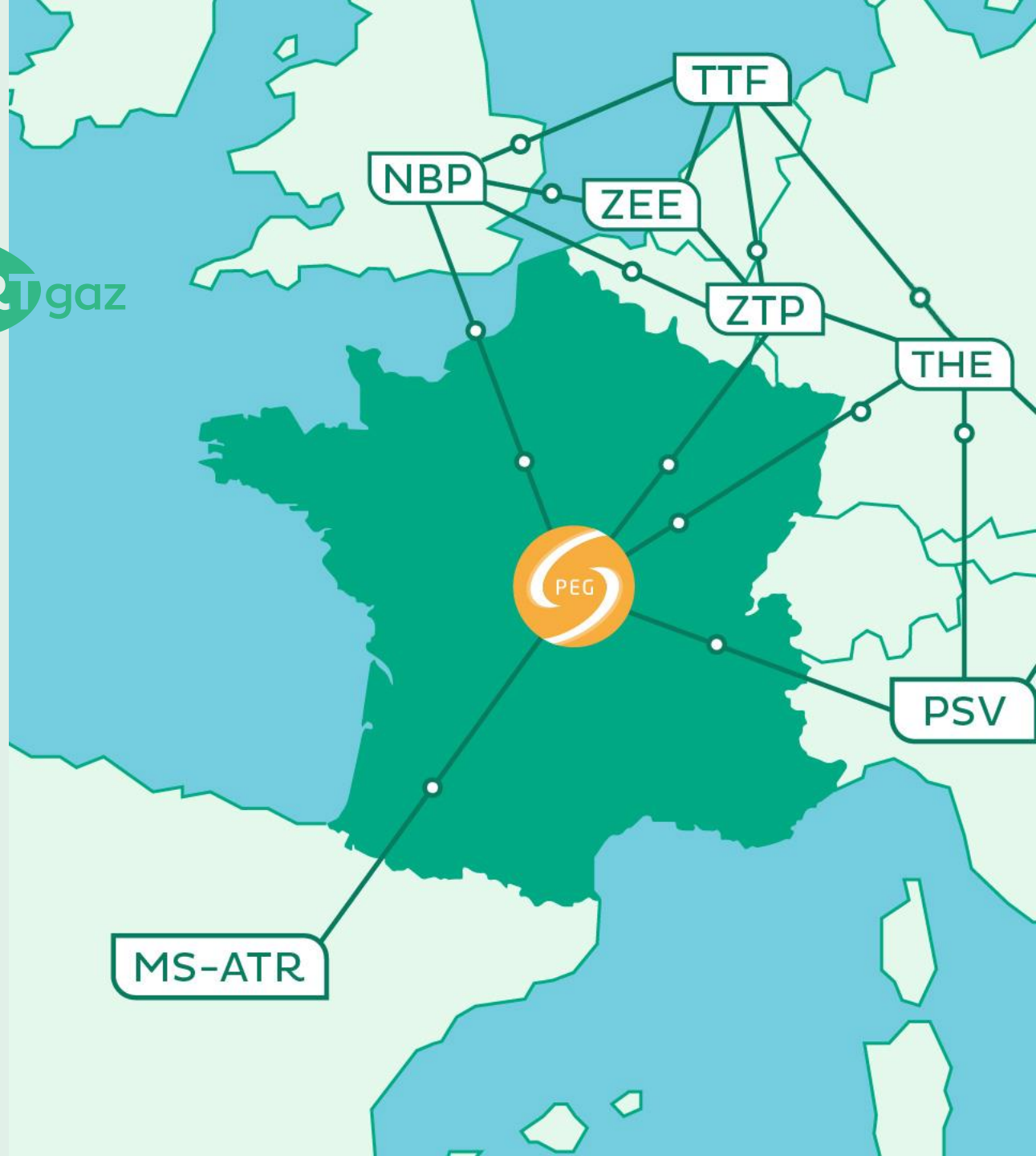
TRF&PEG news n°11 – May 2022

Winter 21/22 lookback and Summer perspective



Lookback on Winter

- Extremely high and volatile prices in difficult geopolitical context, but PEG remains below other European prices
- Consumption: industry impacted by difficult context
- Flow summary: supply scheme reversed
- Massive LNG imports put France at heart of European flows

Perspective

- Summer perspective
- Capacity developments

Prices pushed higher by Ukraine-Russia conflict

But PEG is below other European hubs

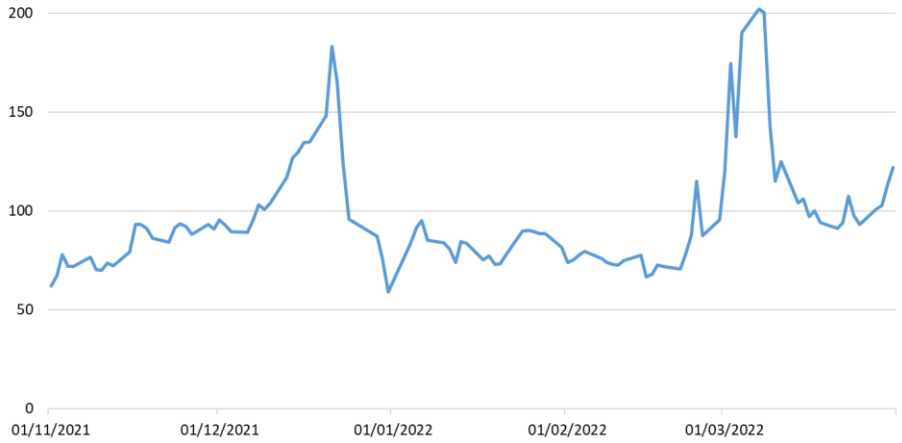
96.3 €/MWh

Average PEG DA Winter 21-22

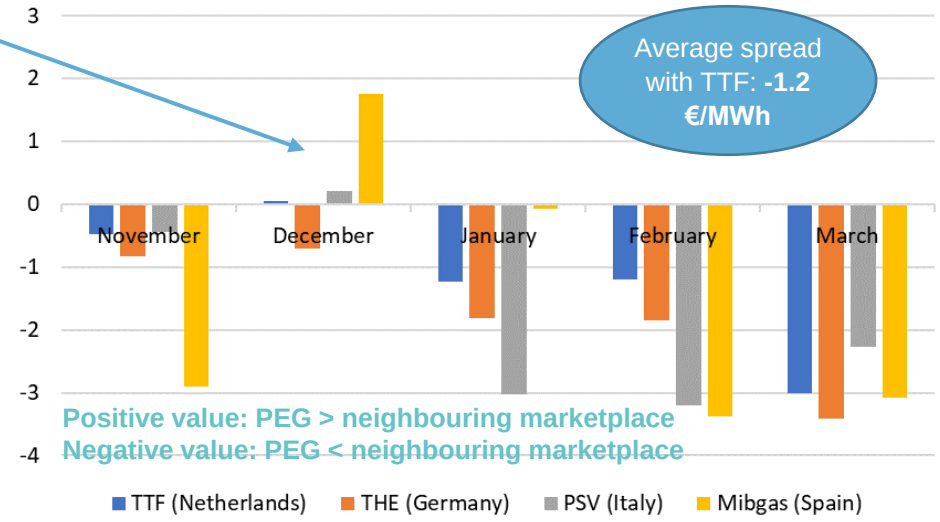
17.0 €/MWh Winter 20-21

- Already tense situation entering Winter with low gas inventory across Europe and weak Russian supply
- **Prices very volatile and sensitive to context** change with some daily variations of dozens of €/MWh
  - Late December cold spell sent PEG and TTF DA above 180 €/MWh
  - And prices flipped in this period with Spain and Italy indices lower than France and Northern Europe
- The invasion of Ukraine triggered a period of two weeks with prices way above 100 €/MWh and even above 200 €/MWh during a couple of days
- Prices then retreated as gas flows remained steady and risks of short-term supply disruption faded away
- However **PEG remained below neighbouring hubs**, in particular thanks to better gas inventory compared to some other countries and good LNG access

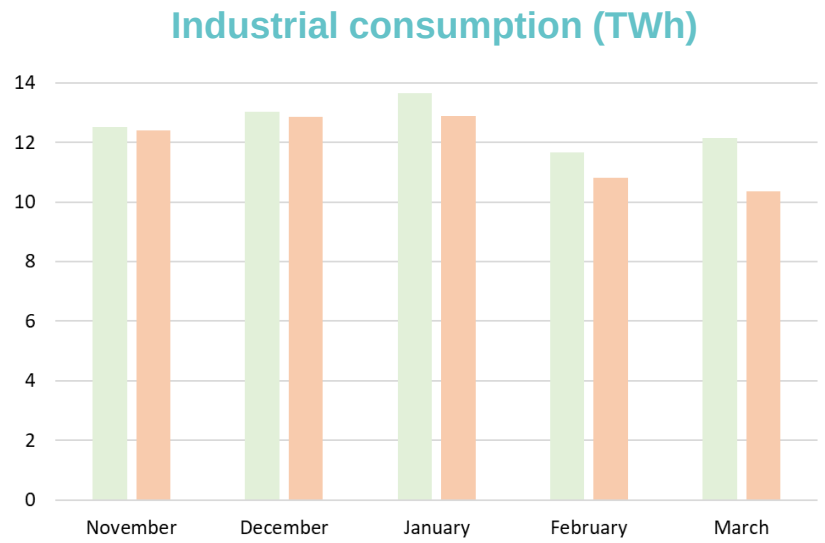
PEG Day-Ahead price (€/MWh)

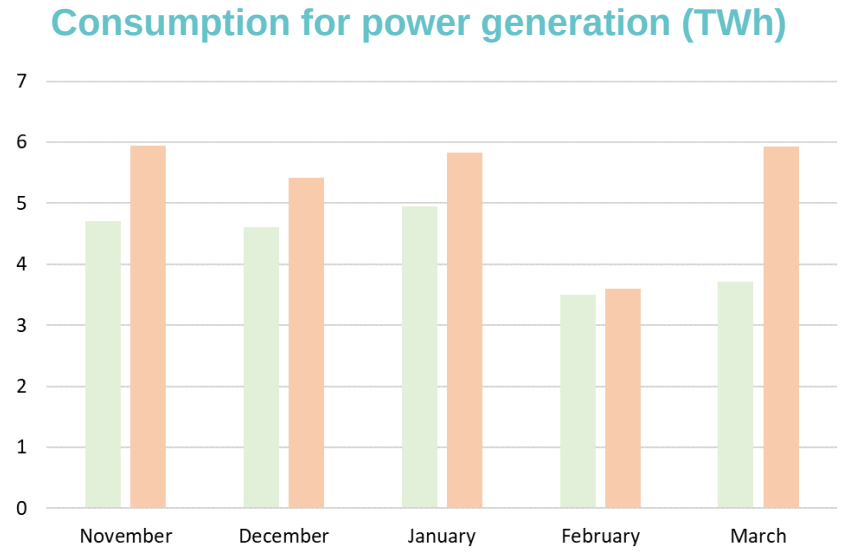


Average spreads between PEG and other European hubs (€/MWh)



What impact on the industrial consumption?





2020-21 2021-22

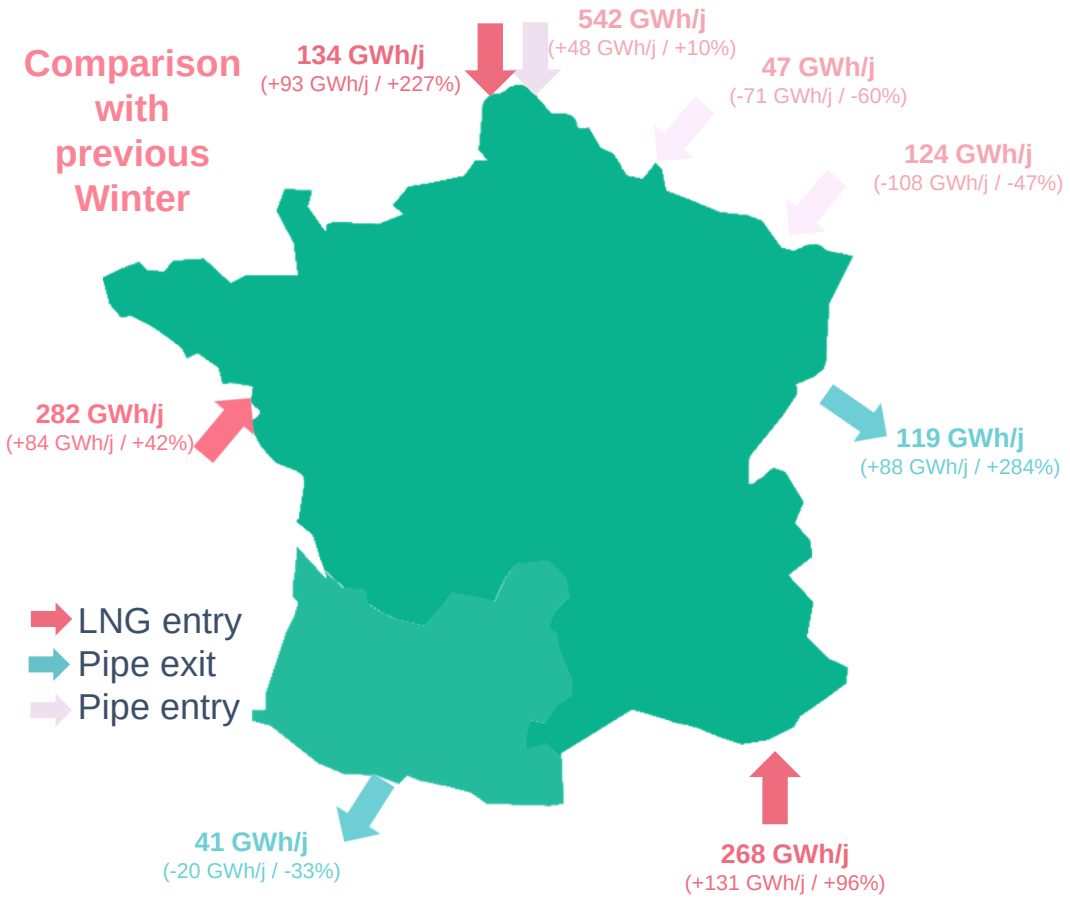
- Industrial consumption still suffers from high prices of energy and raw materials and from scarcity of some components
- Situation amplified by war in Ukraine. In particular, -9% of industrial consumption in Q1 compared to Q1 2021
- However power generation from gas has rebounded due to low nuke availability and weak renewable production

TRF flows: tensions with Russian gas reversed supply schemes

- Overall net imports from Northern pipe entries and LNG terminals increased by 177 GWh/d on average compared with previous Winter
  - Need to compensate **lower than usual gas inventory at the start of Winter**
  - **Return of high transit to Switzerland and Italy** via Oltingue exit, after strong decrease of last Summer following TAP start-up. Due to low Russian supply in Italy

- Change of supply pattern with less pipe gas and more LNG
  - Weak flow from Belgium and Germany due to **strong demand in Northern Europe, more dependant on Russian gas**
  - Partially **compensated by more Norwegian pipe gas**
  - In the meantime **LNG imports jumped by +82%** vs previous Winter with an all-time monthly record in January at 872 GWh/d (then improved again in April)

- In this context, exit to Spain at Pirineos decreased on average with Spain also benefitting of strong LNG imports
  - Flow even **sustainably switched to Spain > France direction** from mid-February to supply Northern Europe



TRF proved robust in this new context

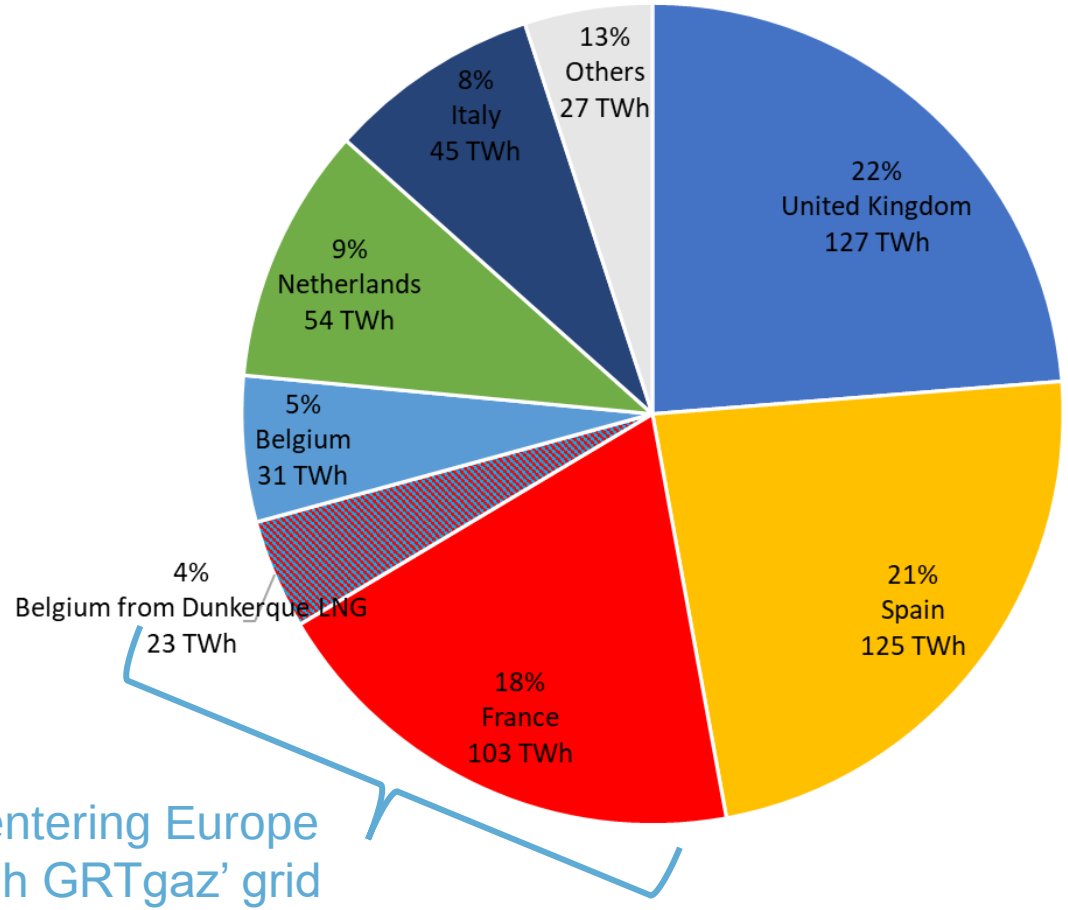
- TRF designed, with the market participants, assuming flows would mostly be from North to South
- Last Winter strong supply from Fos and Montoir terminals and from Spain generated frequent South to North flows
- Most of the time, TRF kept on running smoothly
- But on some days, congestions occurred
  - Resolved thanks to a total of 3 Locational Spreads
  - All successful at reasonable cost (138 k€)
- **TRF is flexible enough to adapt to the new situation**

3 Locational Spreads in January

✓ 1st in Winter
✓ 1st in South to North scheme
✓ All successful
✓ Average cost: 2.0 €/MWh

France is key to reduce Europe’s dependency on Russian gas

LNG send-out in Europe November 2021 – March 2022



- Thanks to its four LNG terminals, France attracted 22% of LNG injected in Europe
  - Nearly as much as UK and more than Spain
- Sent out either in France or in Belgium from Dunkerque LNG after having transited through GRTgaz’ grid
- Allows supply from multiple sources to serve France and neighbouring countries thanks to several interconnection points

Summer perspective

Tense context requires high storage filling this Summer with high LNG imports

- Storage filling in France has begun at good pace (42% full on May 15th, +19 TWh year-on-year) however looming threat of Russian supply disruption **requires high storage filling** at the end of Summer
- Level **above the regulatory target of 85% filling should be targeted** to ensure continuity of supply next Winter
- Storage **filling should be maximized by importing lots of LNG**

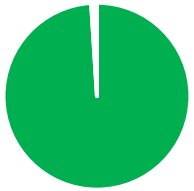
- **In "Russian disruption" scenario** assuming from now on
  - No entry from Germany
  - Maximum exports to Switzerland and Belgium

High inventory in France is achievable but with **massive imports from LNG terminals and Spain**. In line with what is currently observed though

For more details, see the French TSOs Summer Outlook

Summer Outlook simulations
Russian disruption scenario as above

100% use of LNG and Spain entry capacities



99% Filling at end of Summer

90% use of LNG and Spain entry capacities

91% Filling at end of Summer

80% use of LNG and Spain entry capacities

72% Filling at end of Summer

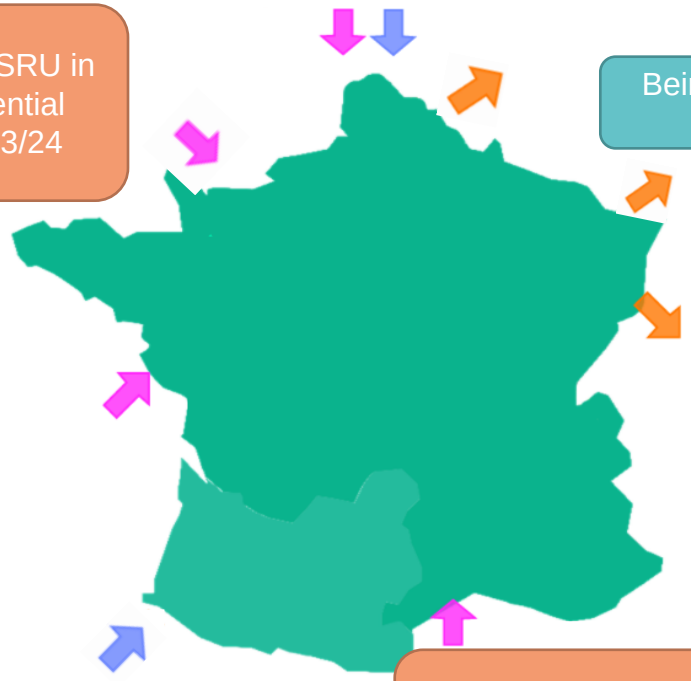
Based on actual inventory on May 1st

Medium-term capacity development to maximize alternate supply

Being studied by GRTgaz and Dunkerque LNG: +60 GWh/d in Dunkerque LNG
Target: Summer 2022

Being studied: FSRU in Le Havre. Potential start-up in 2023/24

Being studied: potential physical exit to Germany



Done: Fos Cavaou debottlenecking with grid debottlenecking by GRTgaz & Teréga (+10 GWh/d)
→ +17 TWh/y from May 2022

- Objectives
  - Be ready in case of disruption of supply
  - Contribute to reduction of European dependency on Russian gas

Thank you