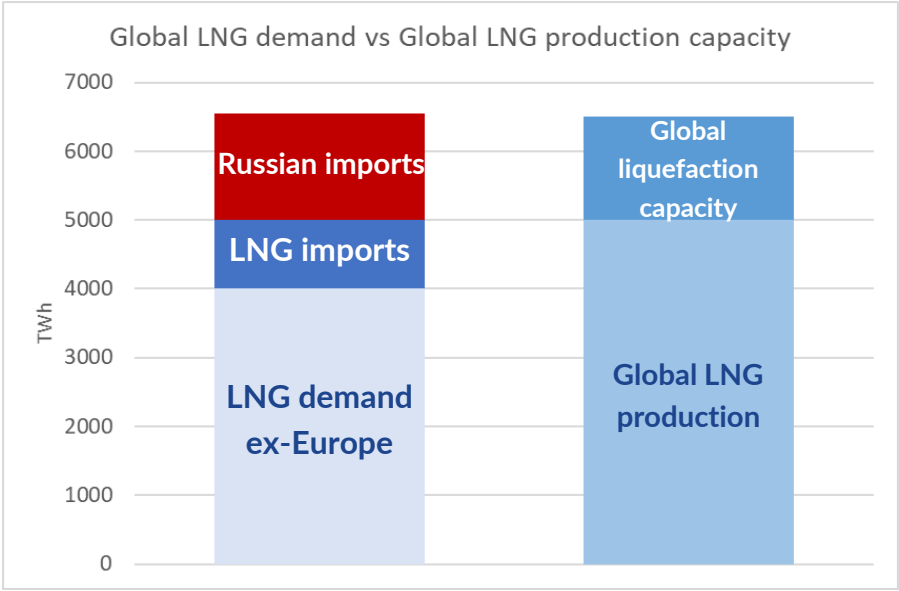
Dependence of the EU on Russian gas supply

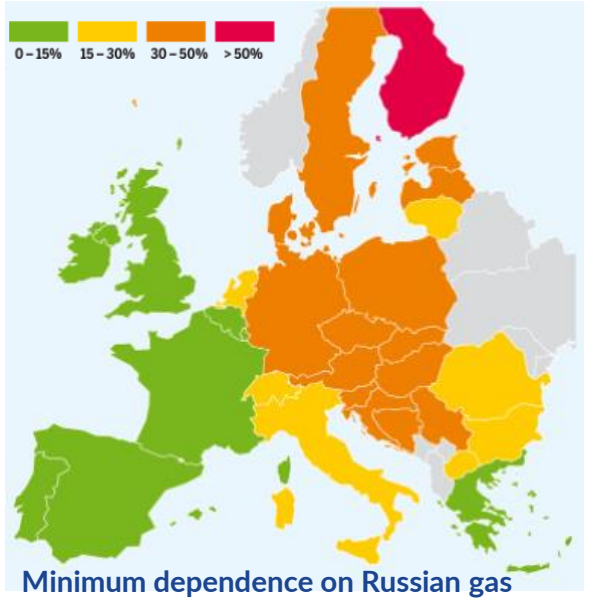
REpowerEU assessment – Project assessment for the BEMIP region

Europe's dependence on Russian gas supply

The EU currently imports ca. 155bcm of Russian gas every year and depends on Russian gas to cover minimum 25% (125 bcma) of its annual demand

- The global gas production capacities are too tight to supply the global market **and** for the EU to be able to replace Russian gas on the short term. It would require:
  - use of 100% of global liquefaction capacities 365/24/7
  - Possibly additional LNG carriers to be commissioned
- EU alternative import capacities, including LNG are too limited to be able to replace Russian import capacities. It would require:
  - use of 110% European import capacities 365/24/7
- Infrastructure bottlenecks within the EU additionally prevent from using 100% of the alternative import capacities **and** prevent from perfect cooperation between Member States (some MSs are more dependent than others)

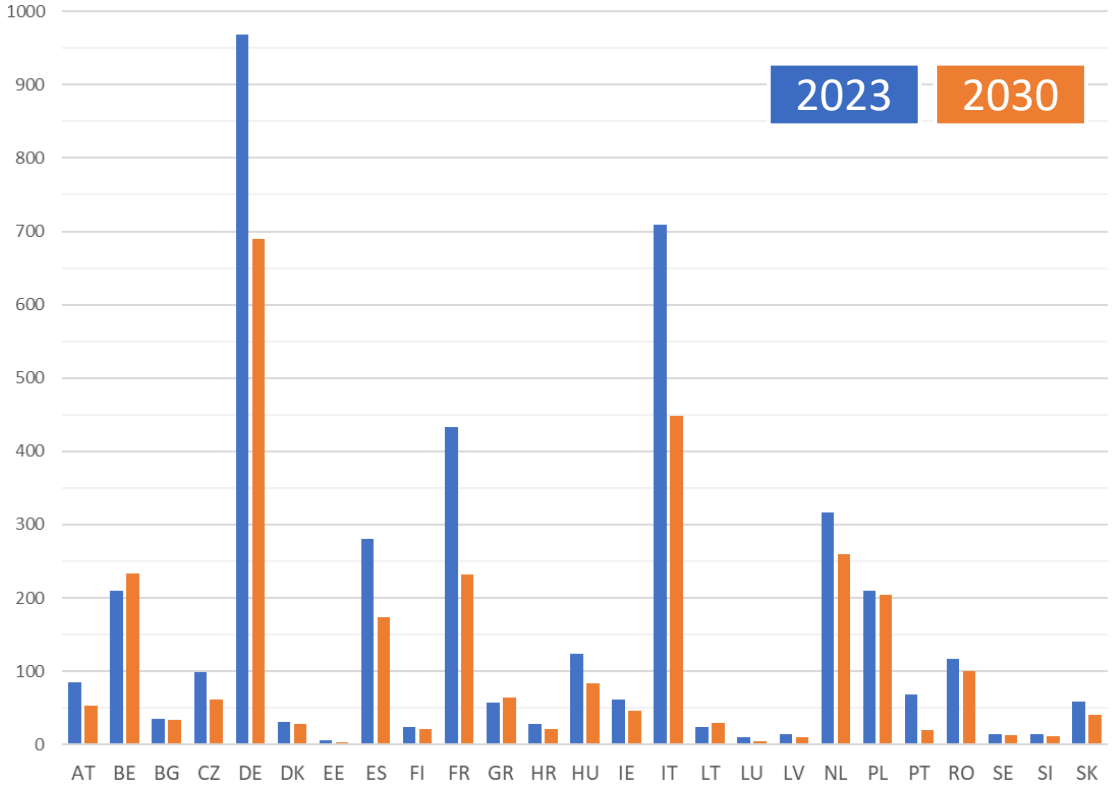




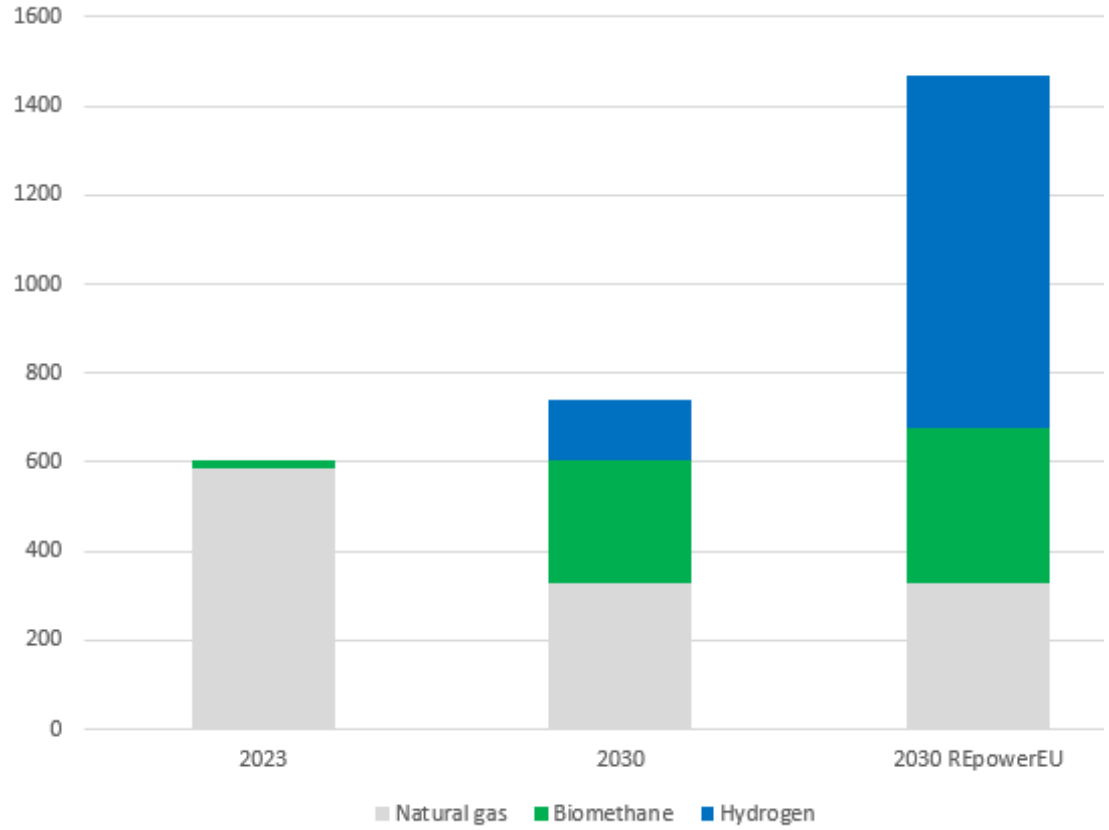
Minimum dependence on Russian gas

Assumptions demand and production

Demand [TWh/y]



Production [TWh/y]



Assumptions

2023 demand (current levels)

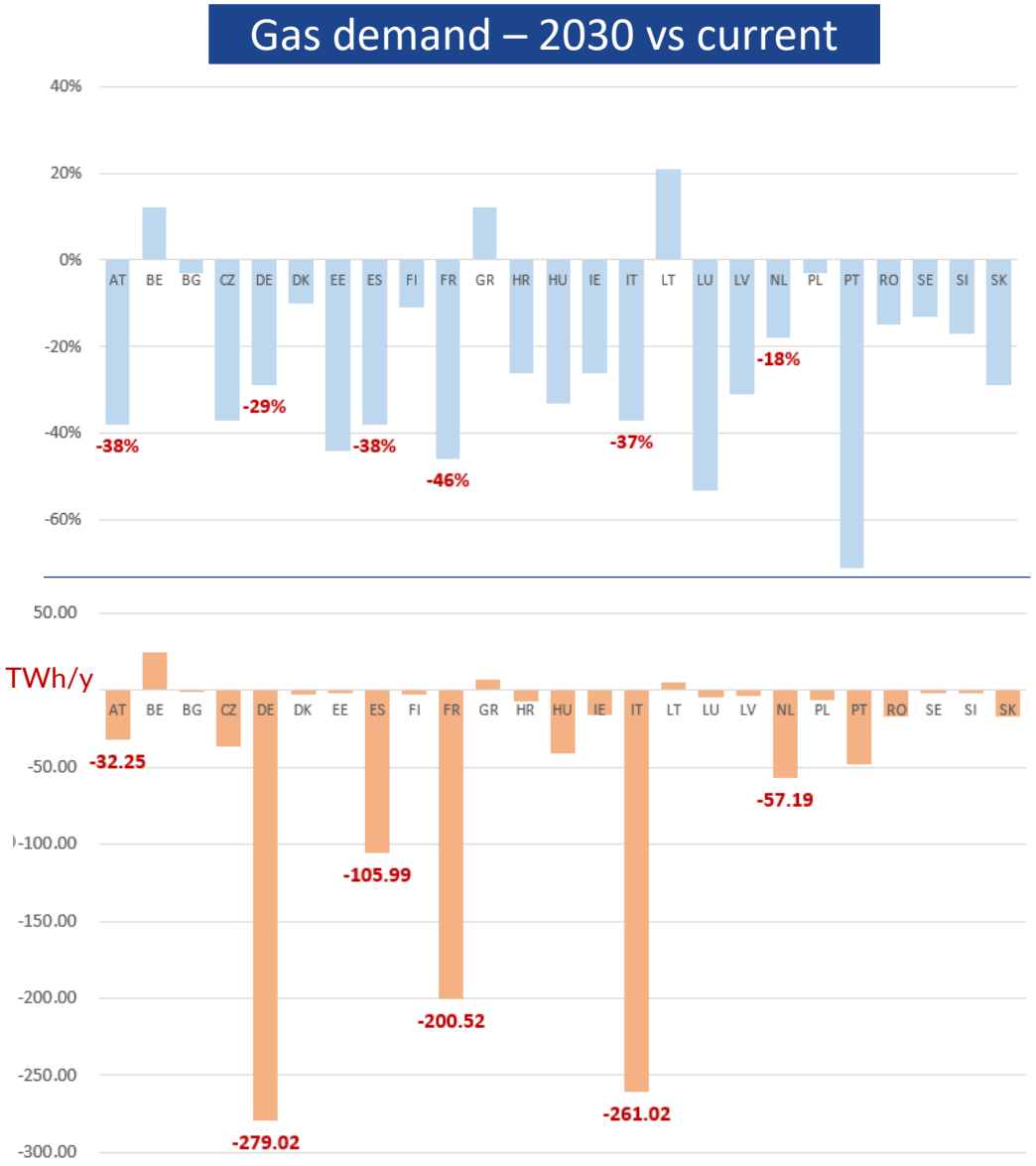
- based on TYNDP 2020 best estimate with Coal before Gas in the electricity production merit order (4000 TWh vs 4400 TWh in 2020)

2030 demand

- Based on information provided by EC (Fit-for-55 demand reduction objectives) with significant reduction compared to 2023 demand levels (**-27%** at EU level from 4 000 to 2900 TWh/y)

Production in 2030

- Based on TYNDP 2020 Distributed Energy (+22% at EU level):
  - 330 TWh conventional
  - 280 TWh Biomethane
  - 136 TWh H2
- REpowerEU actually foresees higher domestic production



Infrastructure layers

Different infrastructure layers are modelled to assess how additional infrastructure can reduce the dependence on Russian gas supply

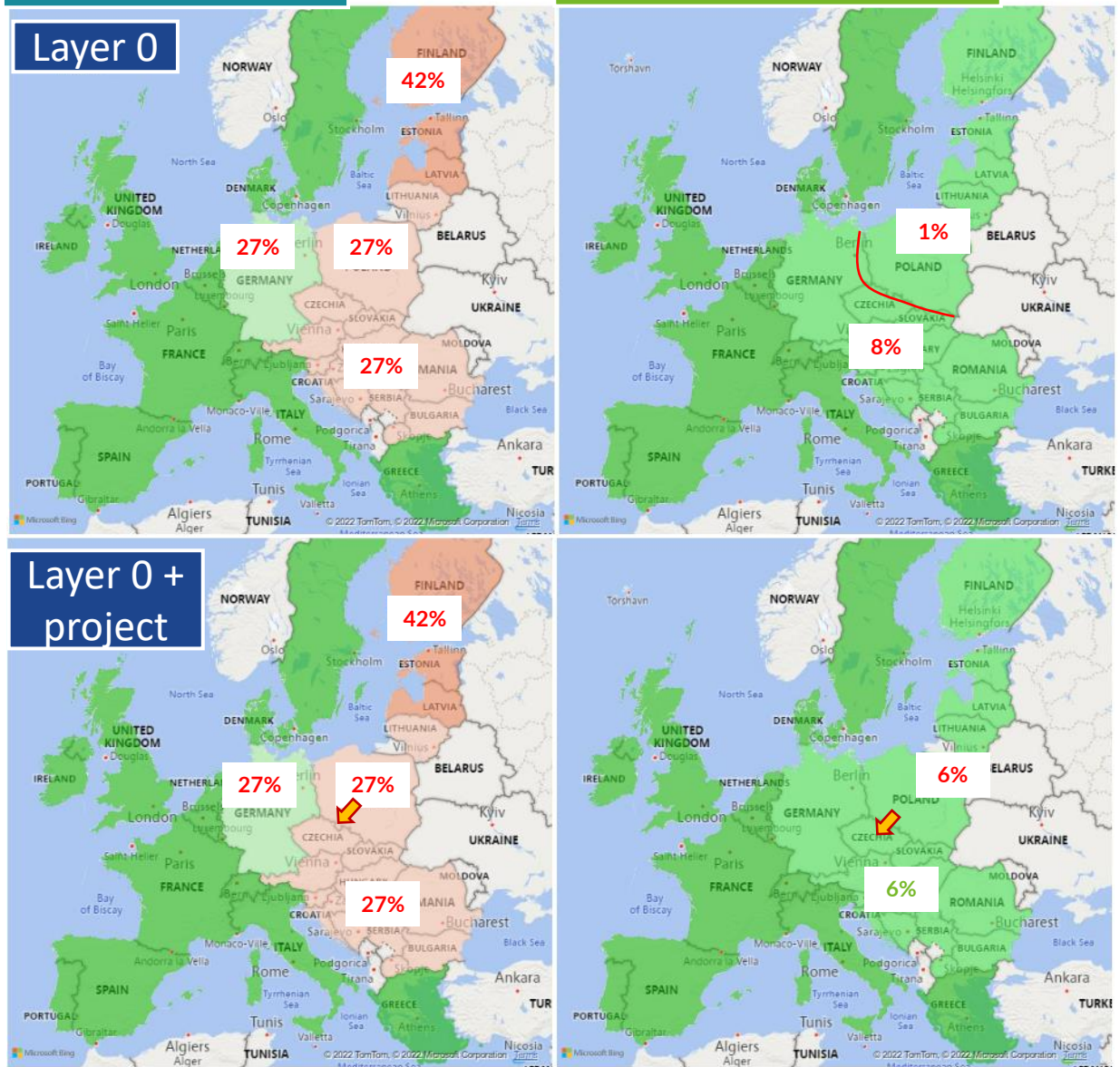
- Layer 0: infrastructure as of 1 January 2023
- Layer 1: additional FID projects in TYNDP 2020 + advanced PCIs
- Layer 2: Layer 1 + several LNG terminals (including pipeline connections) and TAP expansion

PL- CZ Interconnection

Impact of PL-CZ project

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

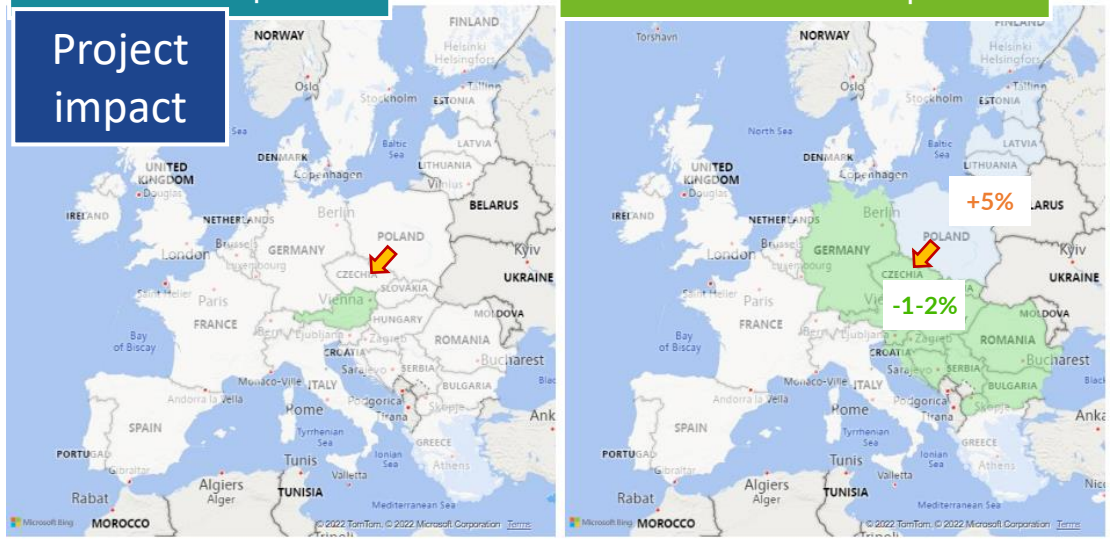
- No significant impact due to lack of additional import capacities

2030

- Overall -2% dependence in CEE region and Northern DE (PL, LV and LT can further support, this is why they increase their dependence by 5 percent)

Current demand and production

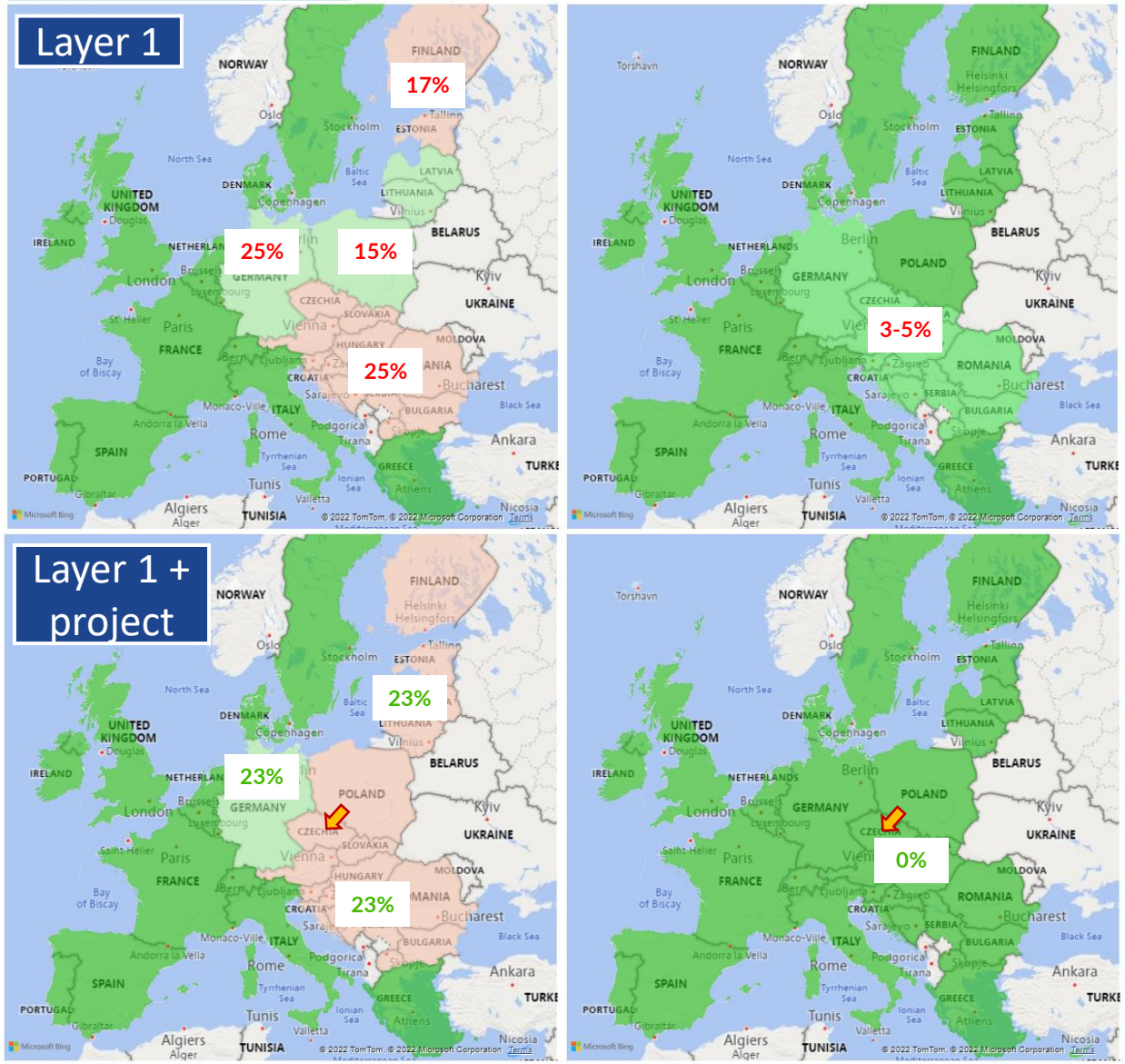
2030 – Fit-for-55 demand and production



Impact of PL-CZ project

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

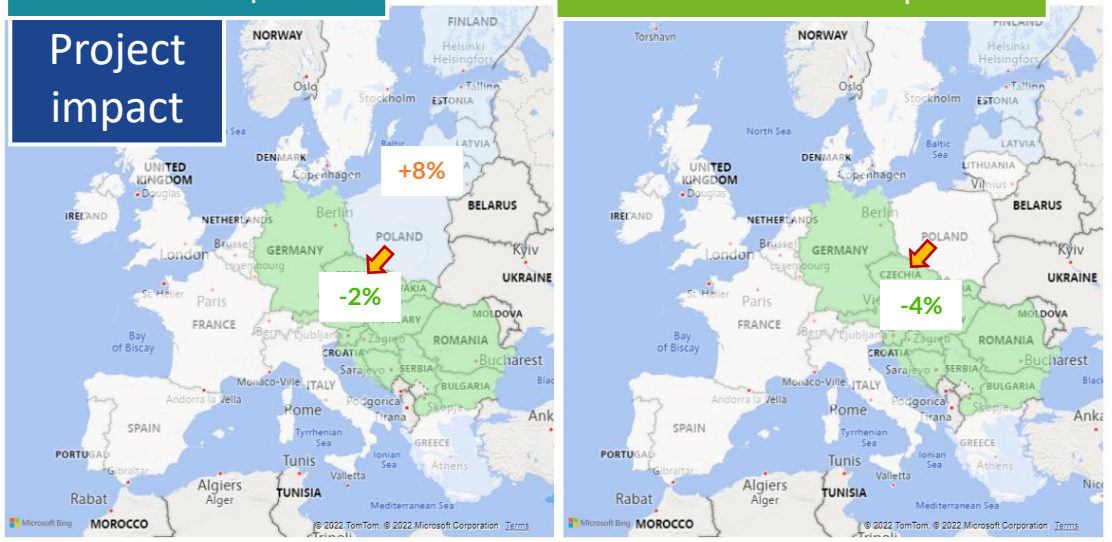
- Overall -2% dependence in CEE region and Northern DE (PL, LV and LT can further support and this is why they increase their dependence by 8 percent)

2030

- Overall -4% dependence in CEE region and Northern DE (PL, LV and LT can further support)

Current demand and production

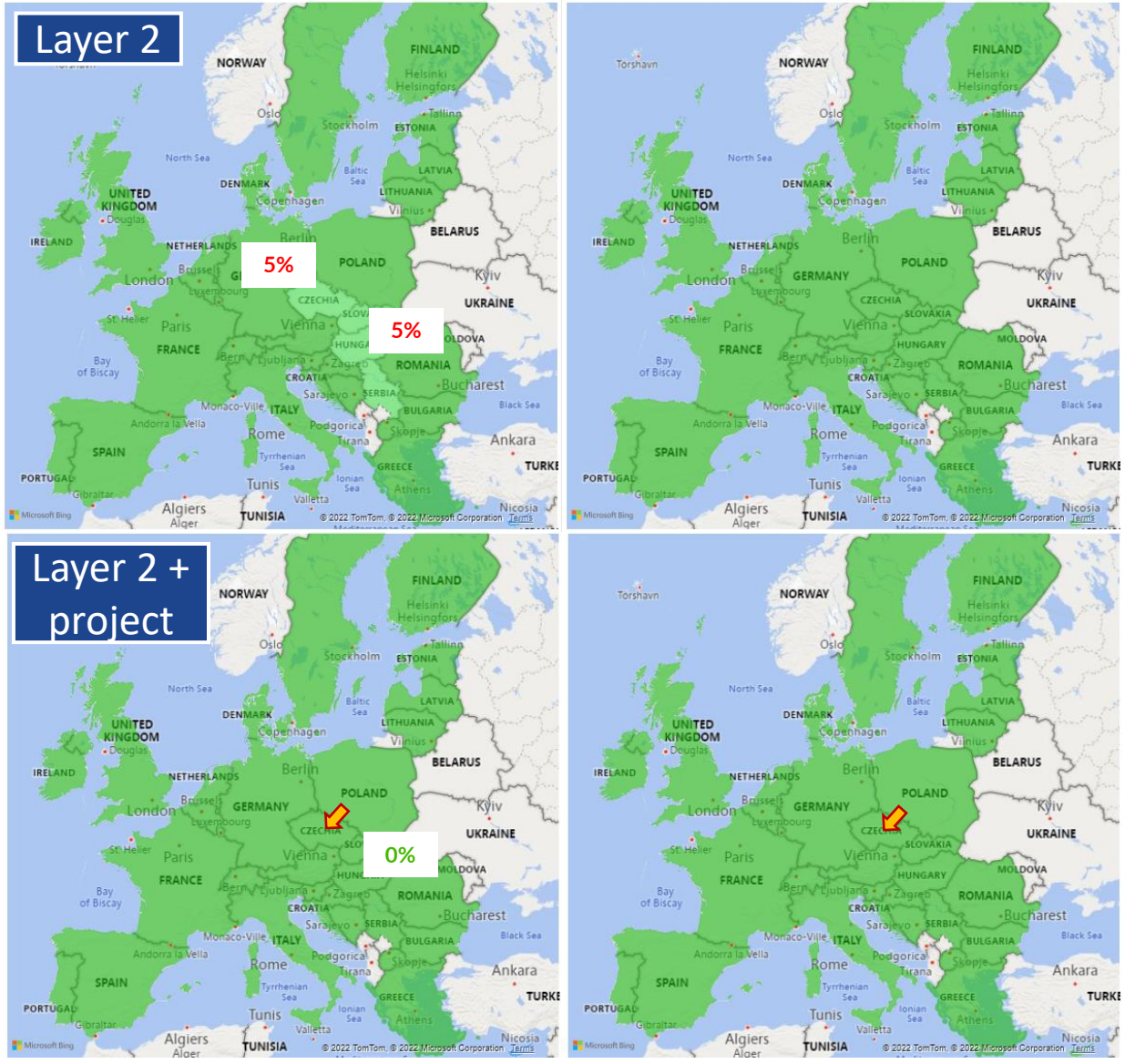
2030 – Fit-for-55 demand and production



Impact of PL-CZ project

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

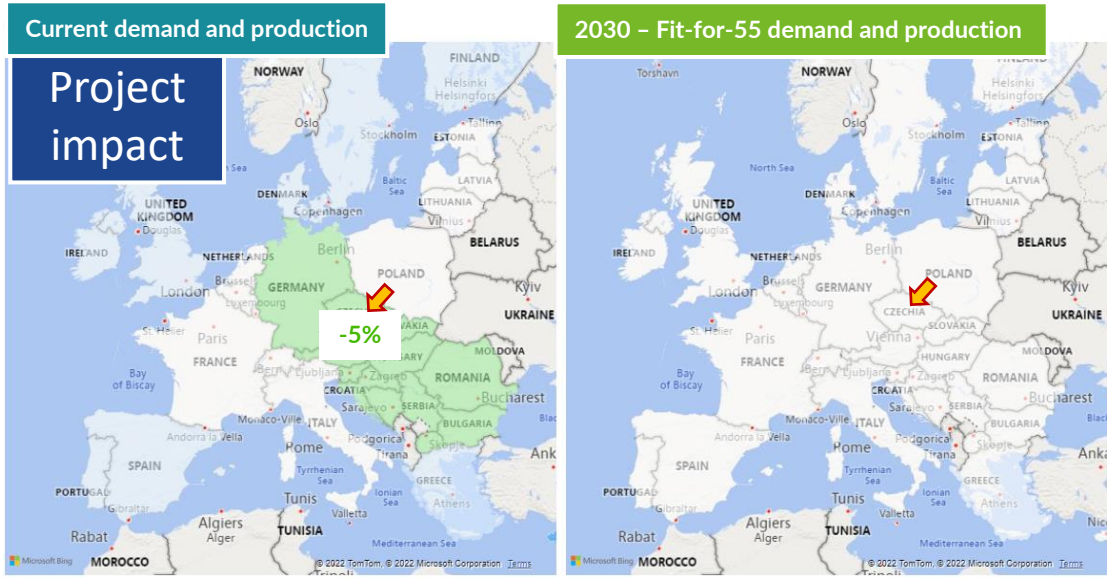
Current levels of demand and production

– Overall -5% dependence in Northern DE, CZ, SK, HU 2030

– No additional impact in infra layer 2

Current demand and production

2030 – Fit-for-55 demand and production

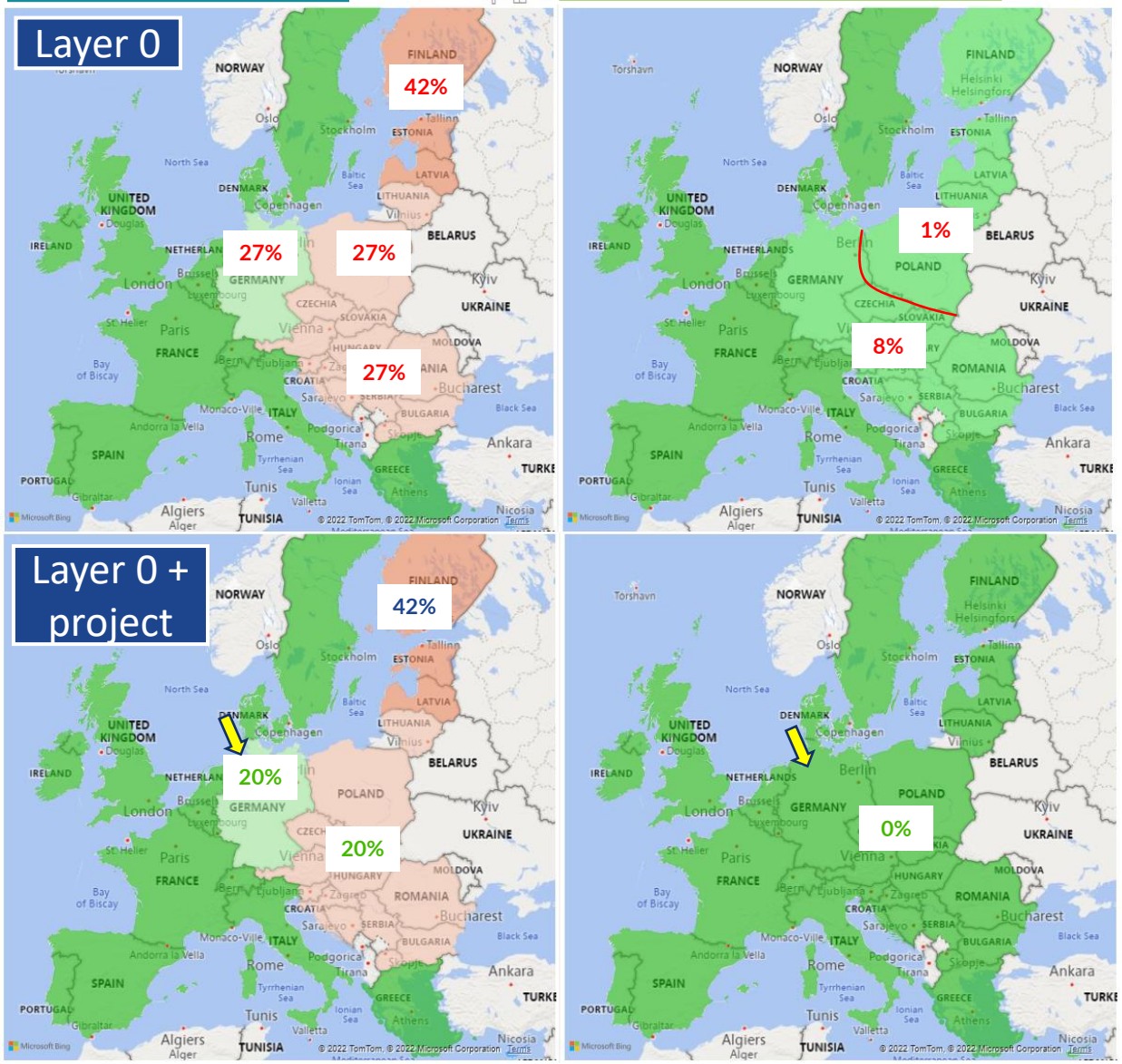


LNG Terminal Brunsbuettel

Impact of LNG Terminal Brunsbüttel

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation and reduction of dependence on Russian gas in CEE

Current levels of demand and production

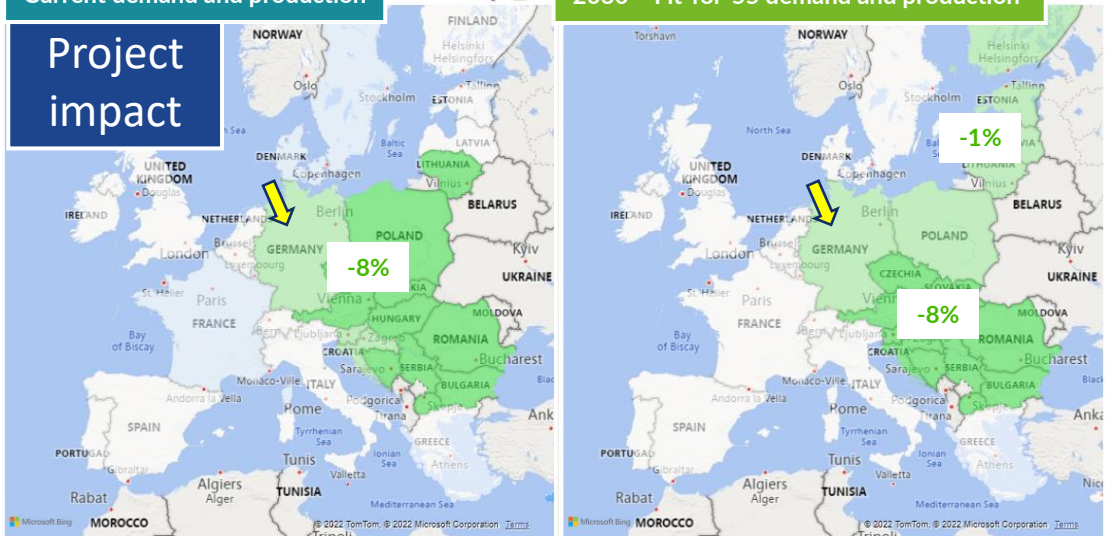
- Improvement in Northern DE, PL, LT and CEE (-7%)

2030

- Achieves to mitigate the dependence on Russian gas for Poland, the Baltic States and Finland resulting mainly from demand reduction (-1%)
- Achieves to mitigate the dependence on Russian gas in CEE (-8%)

Current demand and production

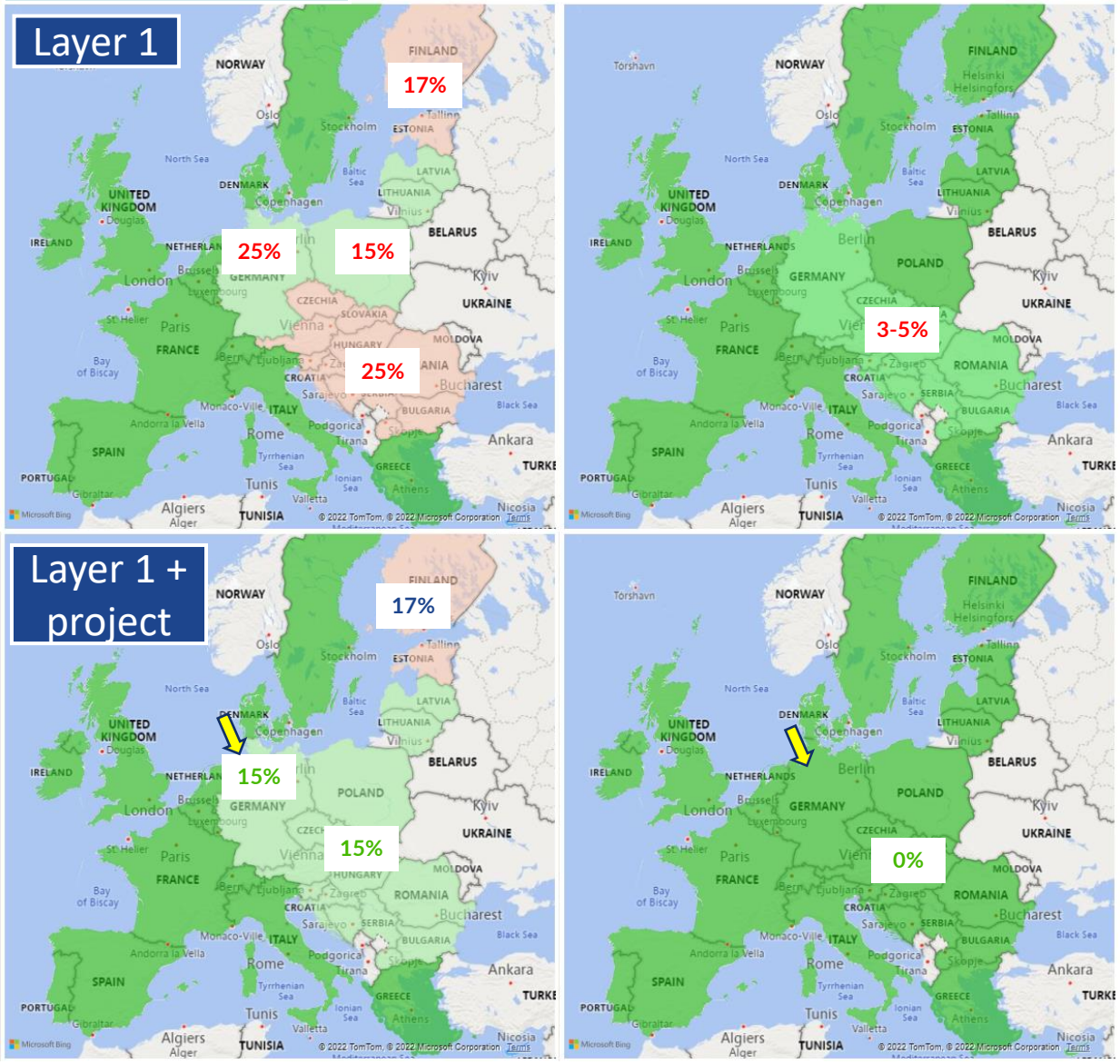
2030 – Fit-for-55 demand and production



Impact of LNG Terminal Brunsbüttel

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

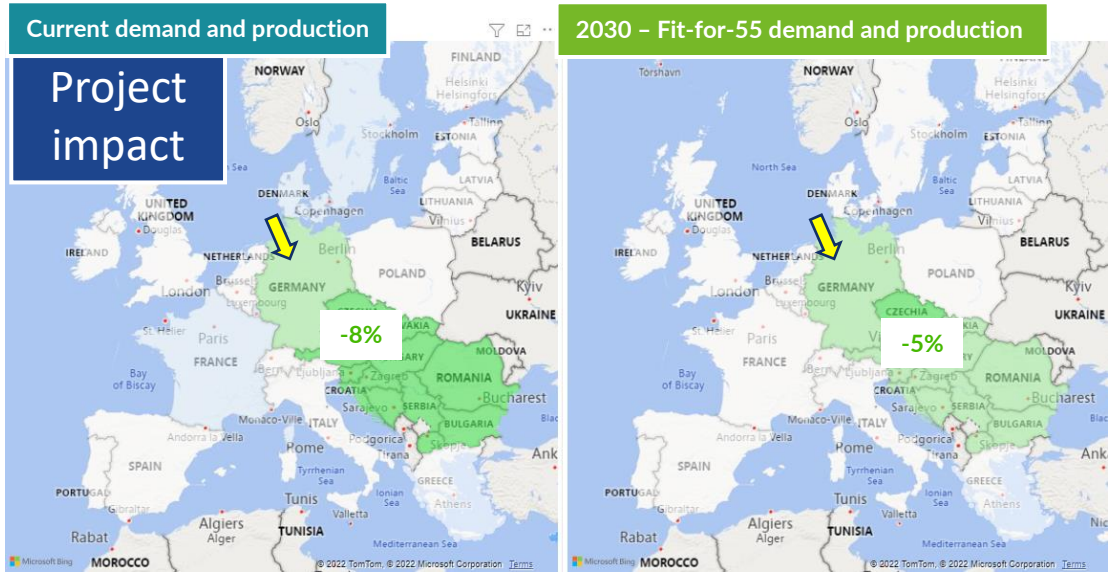
- Overall -10% dependence in CEE region and Northern DE

2030

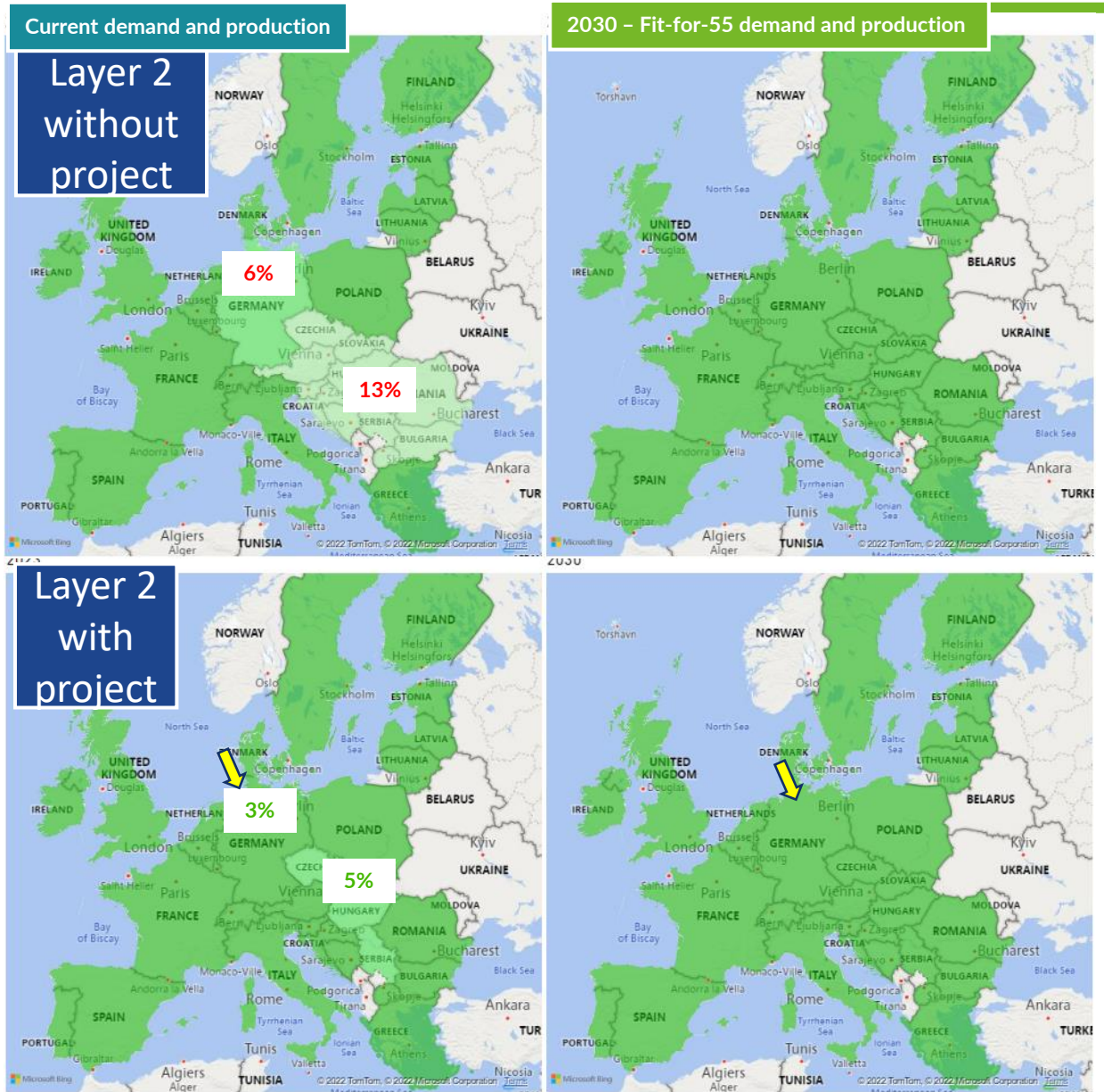
- Overall -5% dependence in CEE region and Northern DE

Current demand and production

2030 – Fit-for-55 demand and production



Impact of LNG Terminal Brunsbüttel



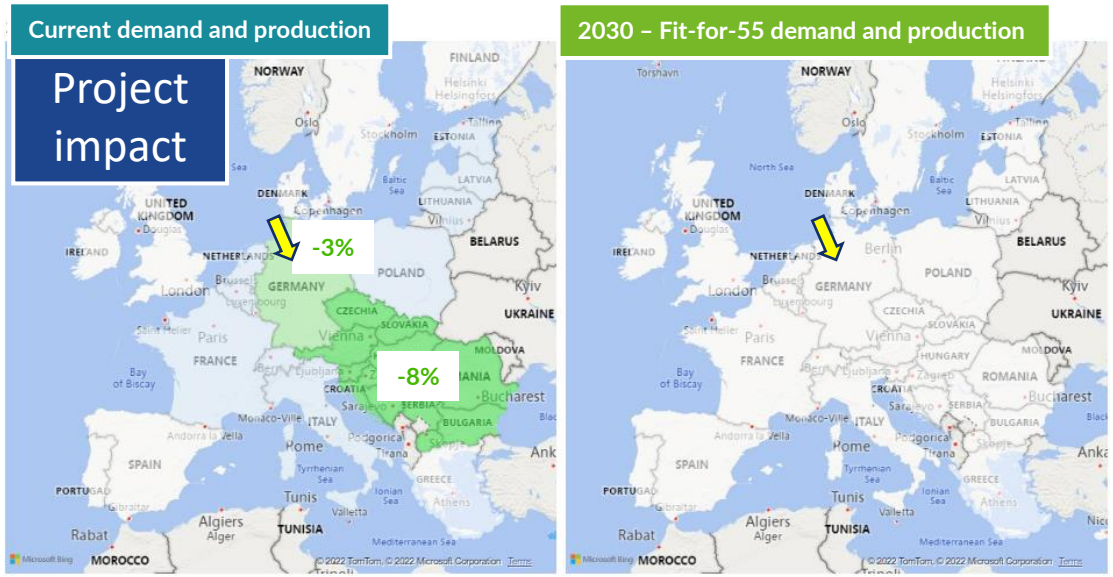
Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

- Overall -3% dependence in Northern DE and 8% in CEE region

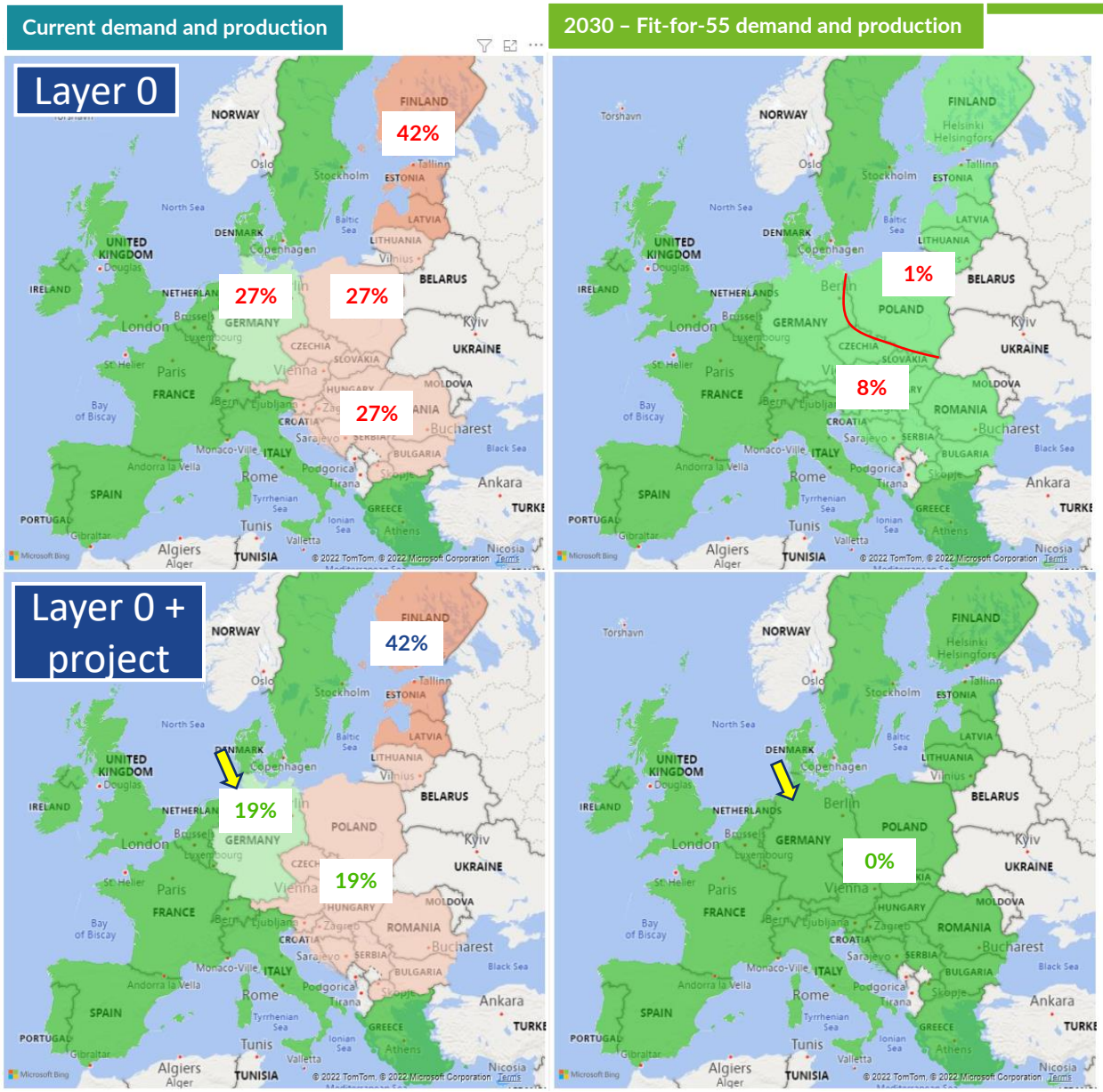
2030

- The total mitigation of the dependence on Russian gas results from demand reduction



Wilhelmshaven FSRU

Impact of Wilhelmshaven FSRU



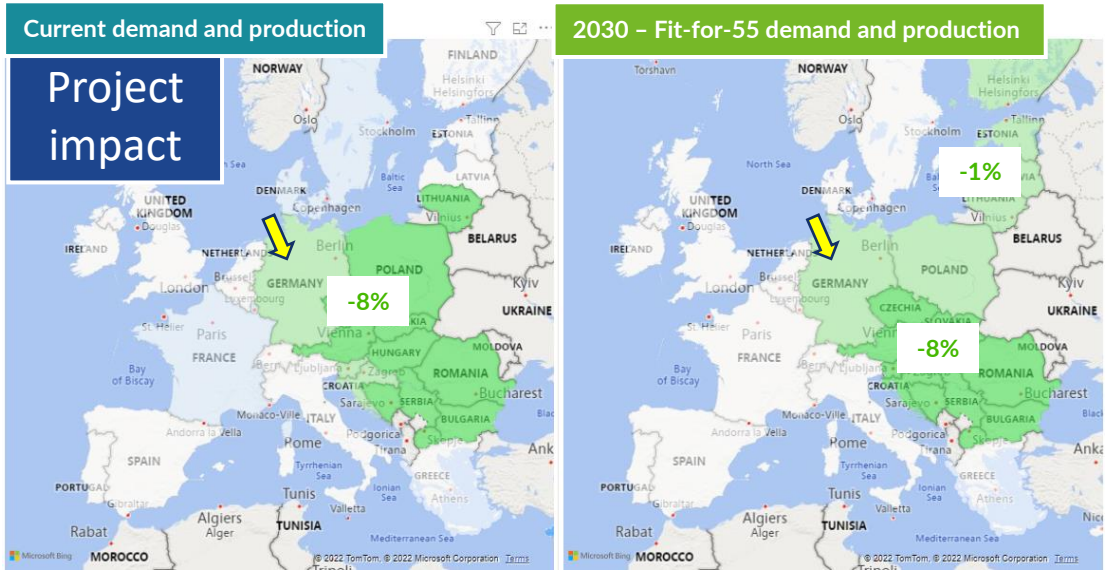
Improvement of cooperation and reduction of dependence on Russian gas in CEE

Current levels of demand and production

- Improvement in Northern DE, PL, LT and CEE (-8%)

2030

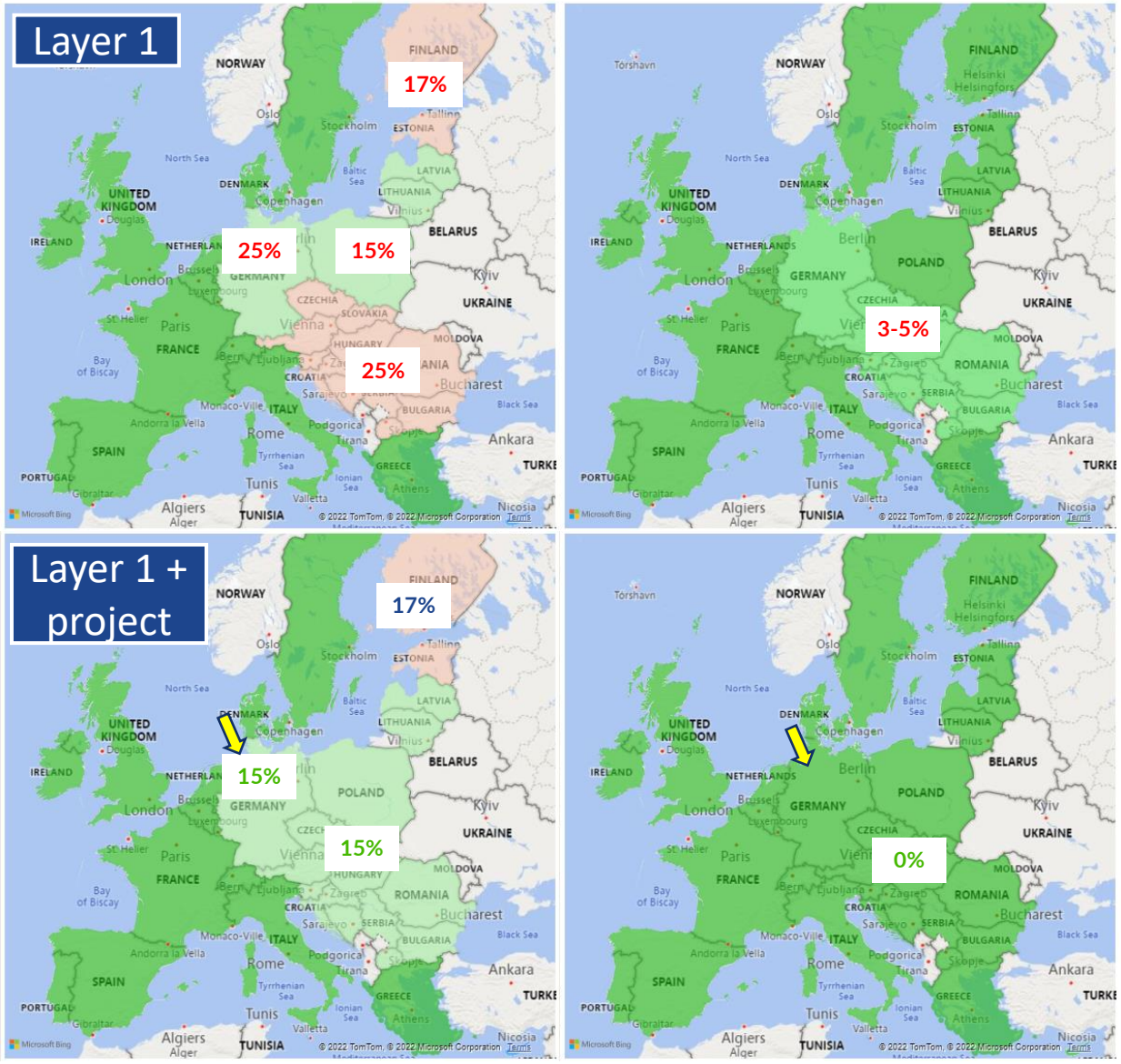
- Achieves to mitigate the dependence on Russian gas for Poland, the Baltic States and Finland resulting mainly from demand reduction (-1%)
- Achieves to mitigate the dependence on Russian gas in CEE (-8%)



Impact of Wilhelmshaven FSRU

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

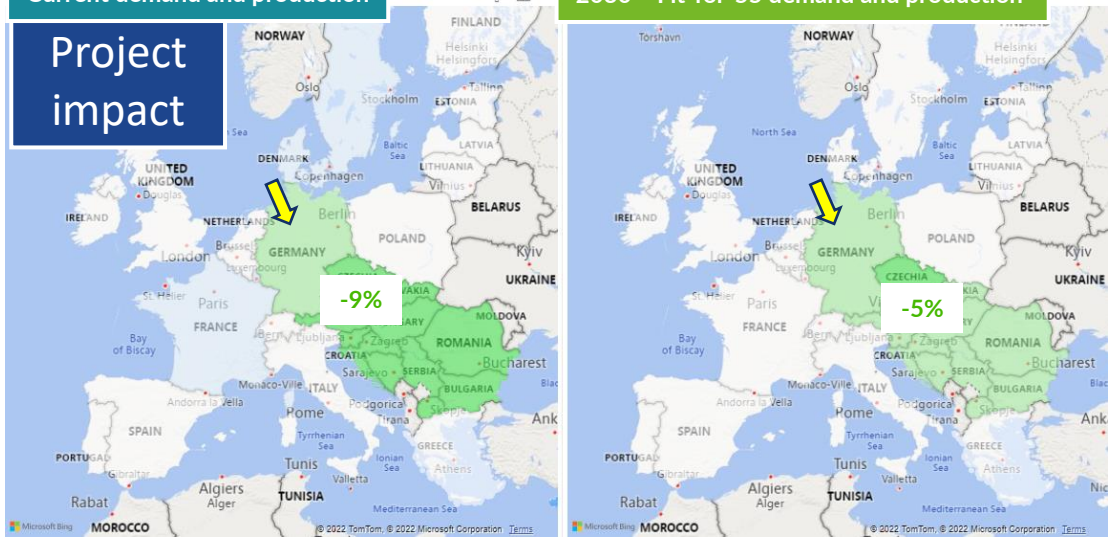
- Overall -9% dependence in CEE region and Northern DE

2030

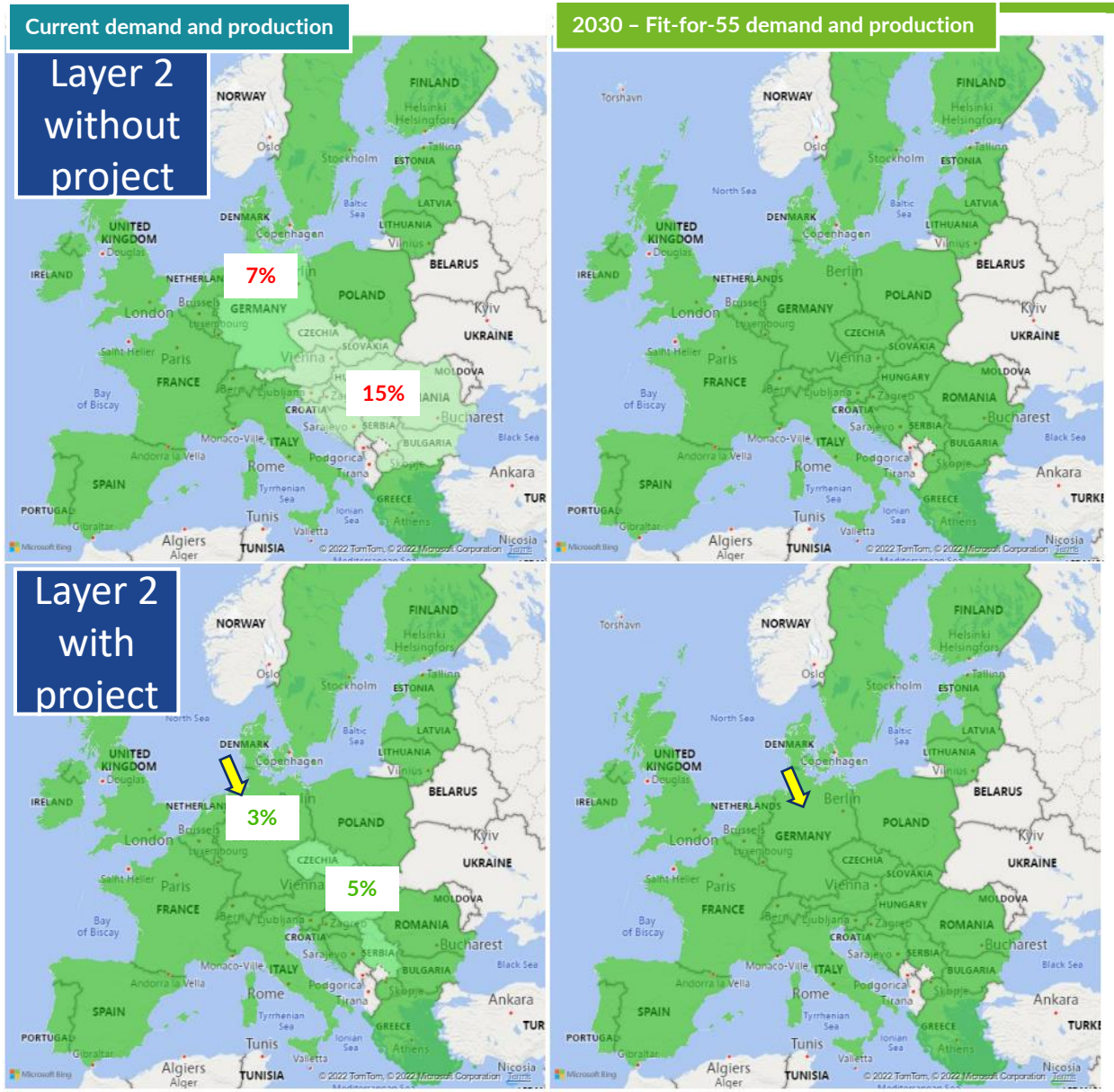
- Overall -5% dependence in CEE region and Northern DE (PL, LV and LT can further support)

Current demand and production

2030 – Fit-for-55 demand and production



Impact of Wilhelmshaven FSRU



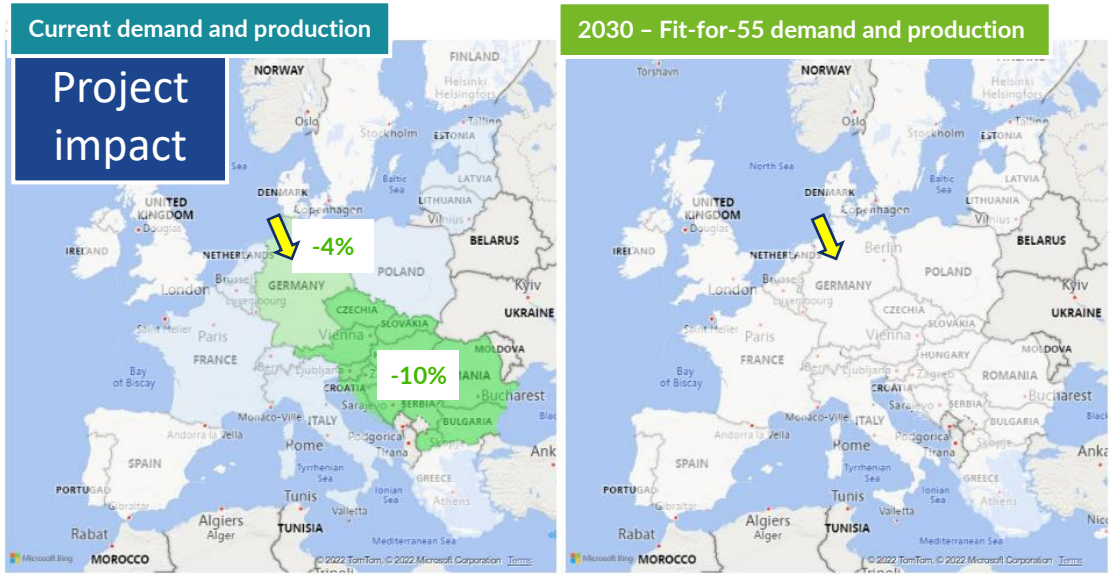
Improvement of cooperation in CEE and overall reduction of dependence on Russian gas

Current levels of demand and production

- Overall -4% dependence in Northern DE and 10% in CEE region

2030

- The total mitigation of the dependence on Russian gas results from demand reduction

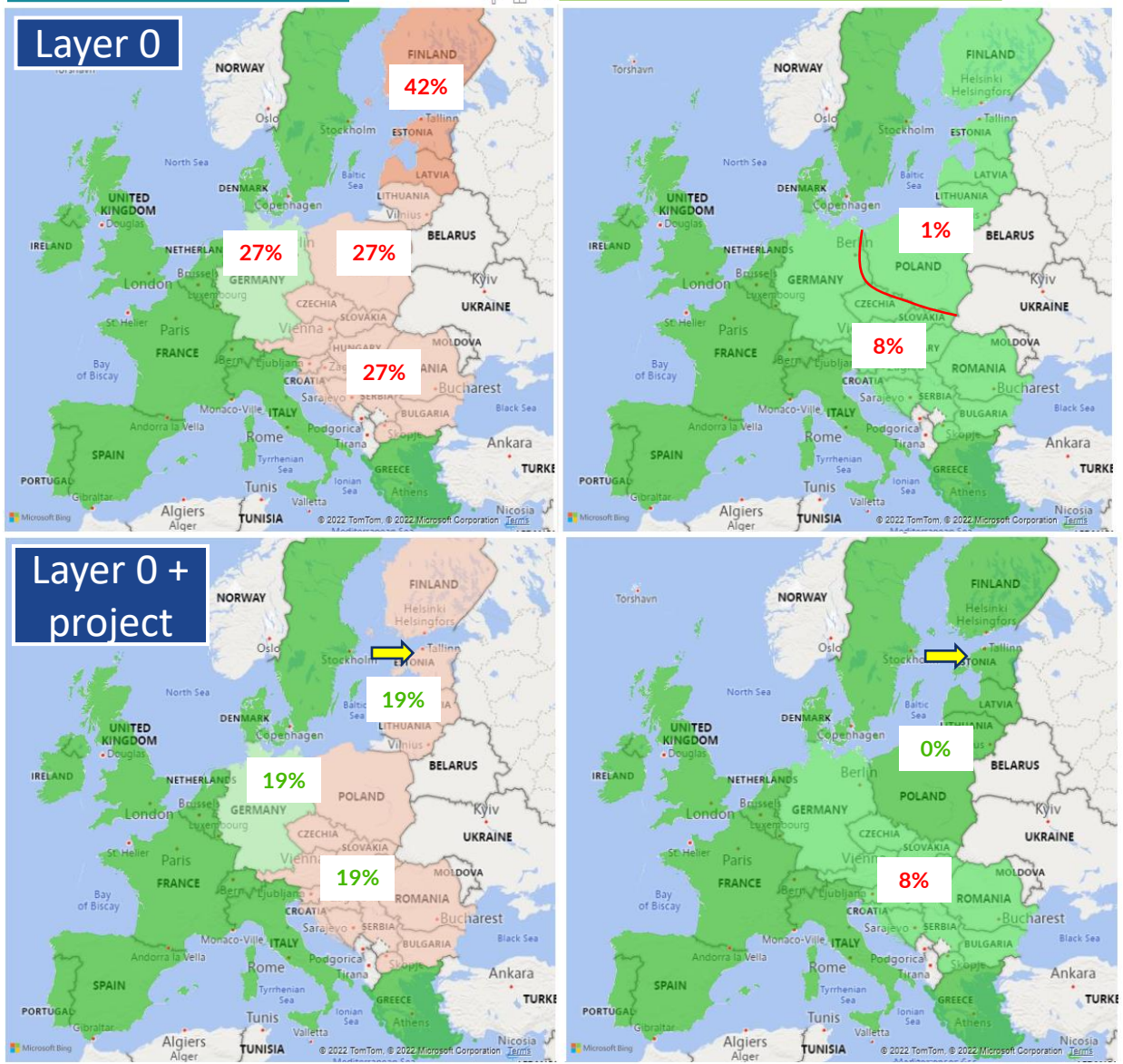


Generic LNG Terminal – Baltic region - Estonia

Impact of Generic LNG Terminal – Baltic region - Estonia

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation and reduction of dependence on Russian gas in North Eastern Europe and CEE

Current levels of demand and production

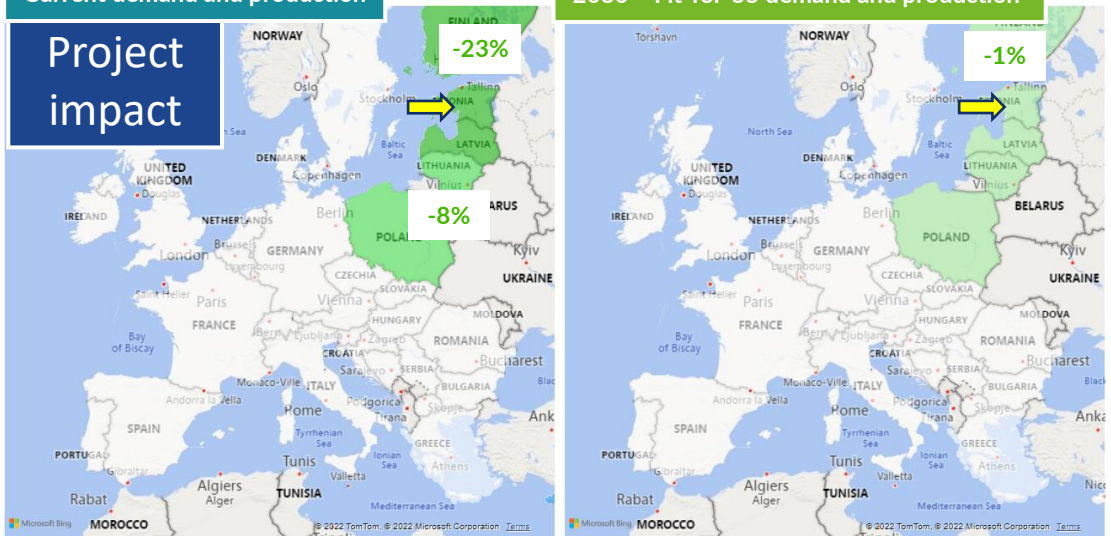
- Improvement in Northern DE, PL, LT and CEE (-8%)
- Improvement in LV, EE and FI (-23%)

2030

- The total mitigation of the dependence on Russian gas for Poland, the Baltic States and Finland results from demand reduction

Current demand and production

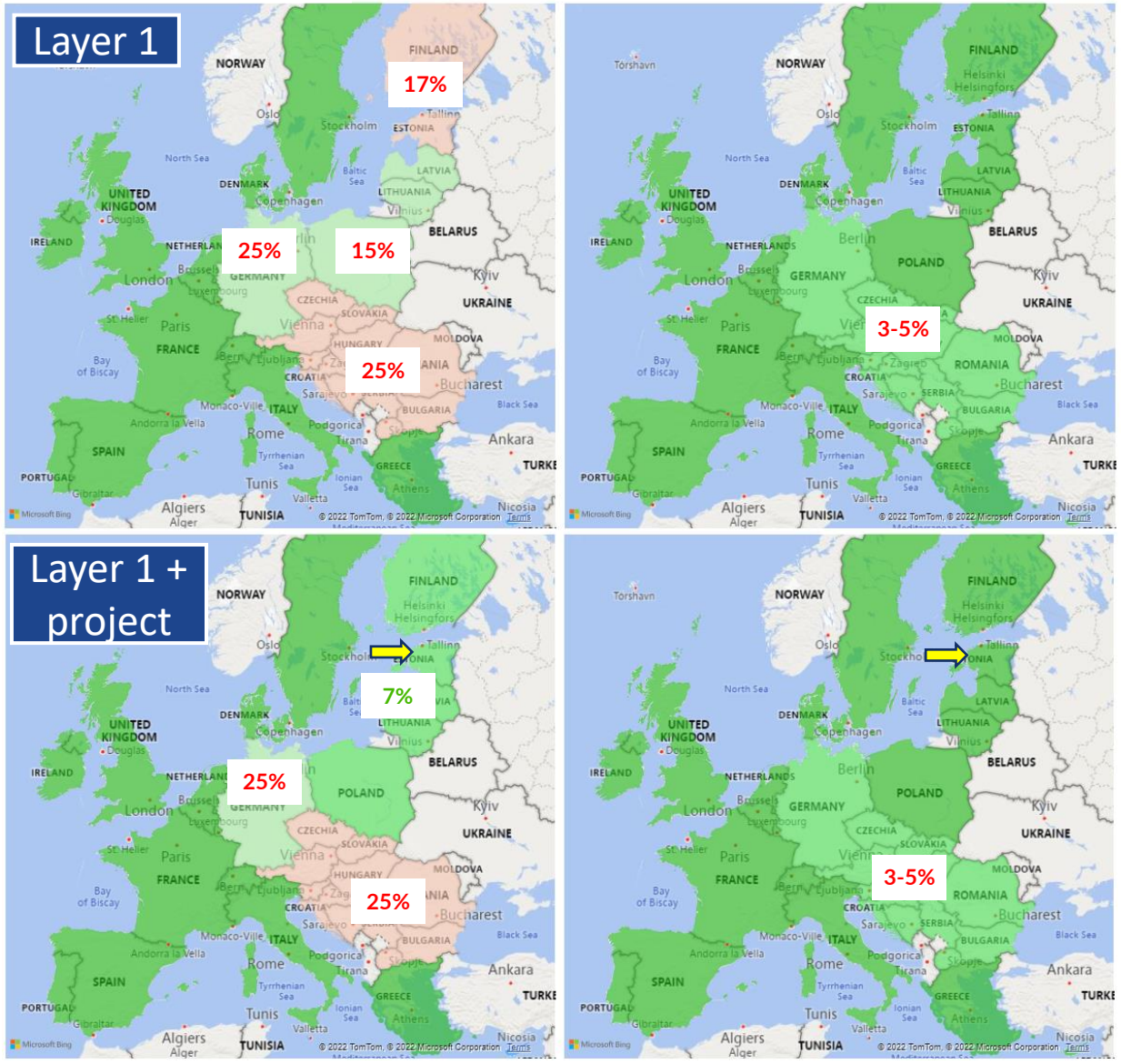
2030 – Fit-for-55 demand and production



Impact of Generic LNG Terminal – Baltic region - Estonia

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation and reduction of dependence on Russian gas in North Eastern Europe

Current levels of demand and production

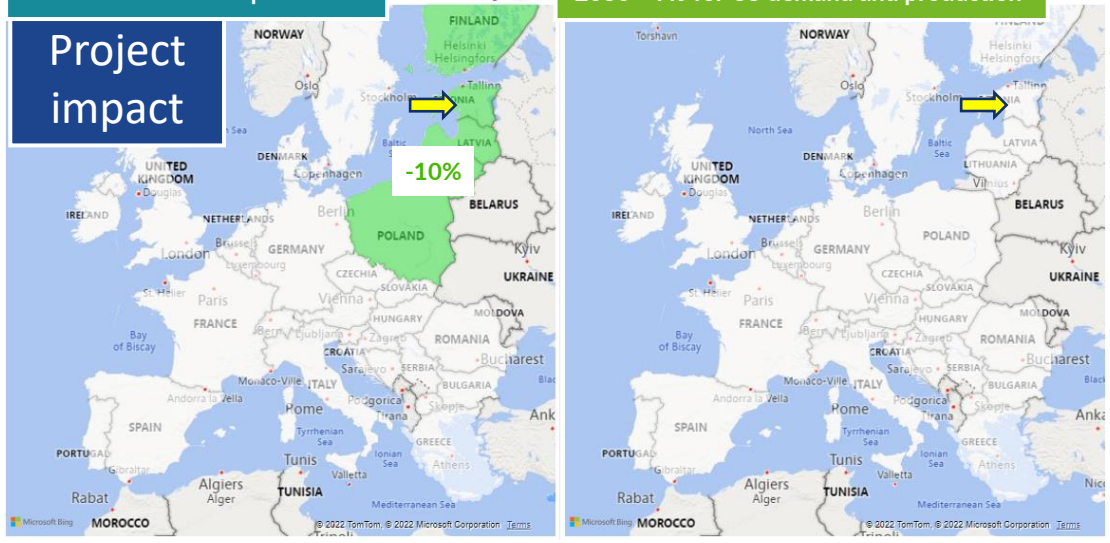
- Improvement in Northern PL, LT, LV, EE and FI (-10%)

2030

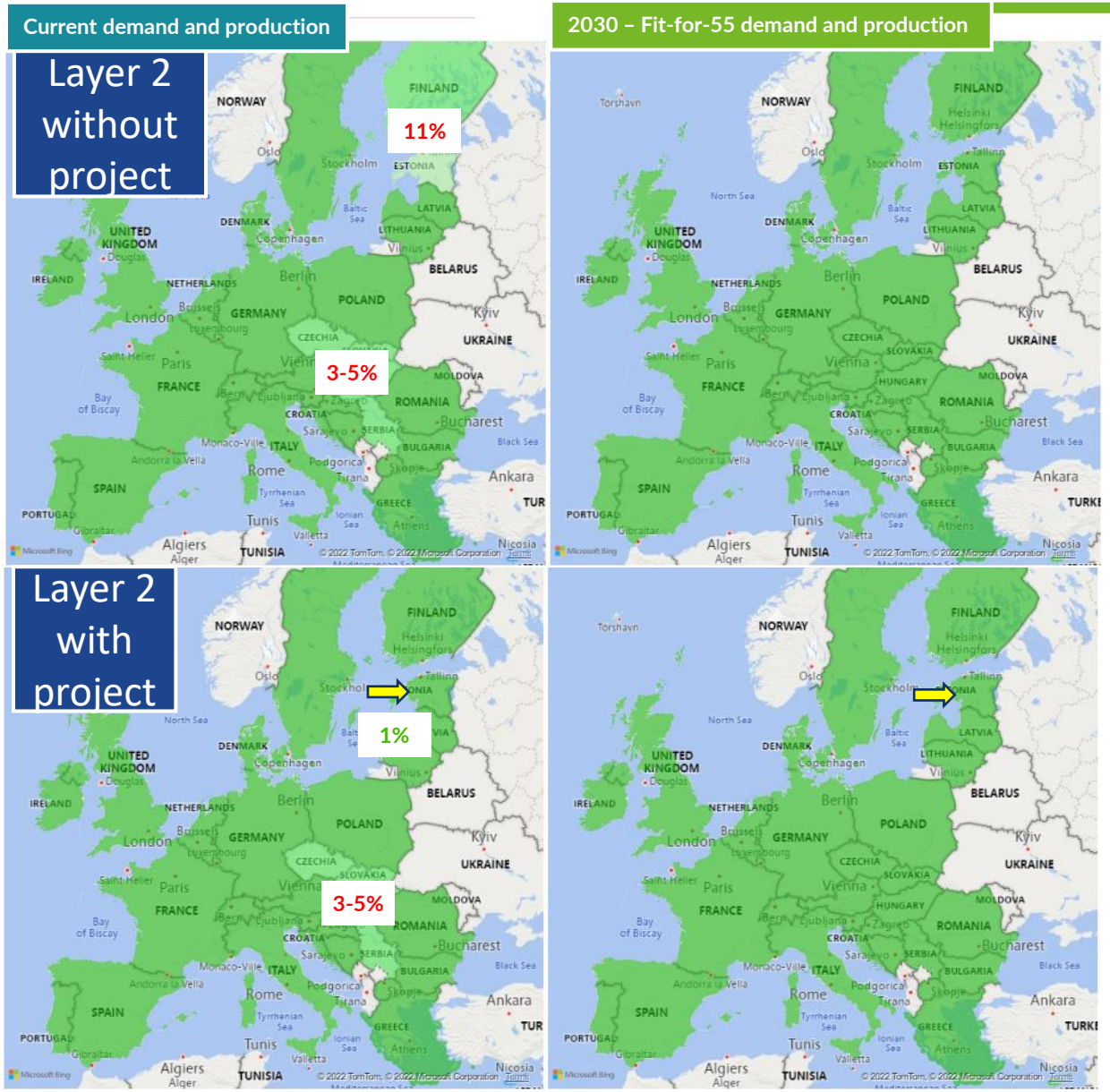
- Achieves to mitigate the dependence on Russian gas for Poland, the Baltic States and Finland resulting mainly from demand reduction (-1%)

Current demand and production

2030 – Fit-for-55 demand and production



Impact of Generic LNG Terminal – Baltic region - Estonia



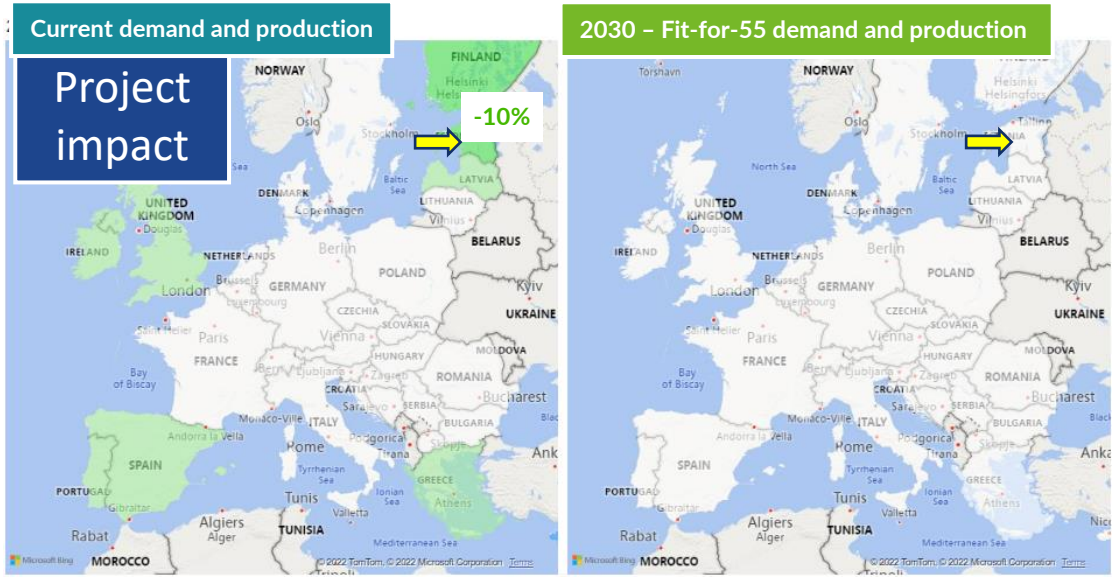
Improvement of cooperation and reduction of dependence on Russian gas in North Eastern Europe

Current levels of demand and production

- Improvement in Northern PL, LT, LV, EE and FI (-10%)

2030

- The total mitigation of the dependence on Russian gas for Poland, the Baltic States and Finland results from demand reduction

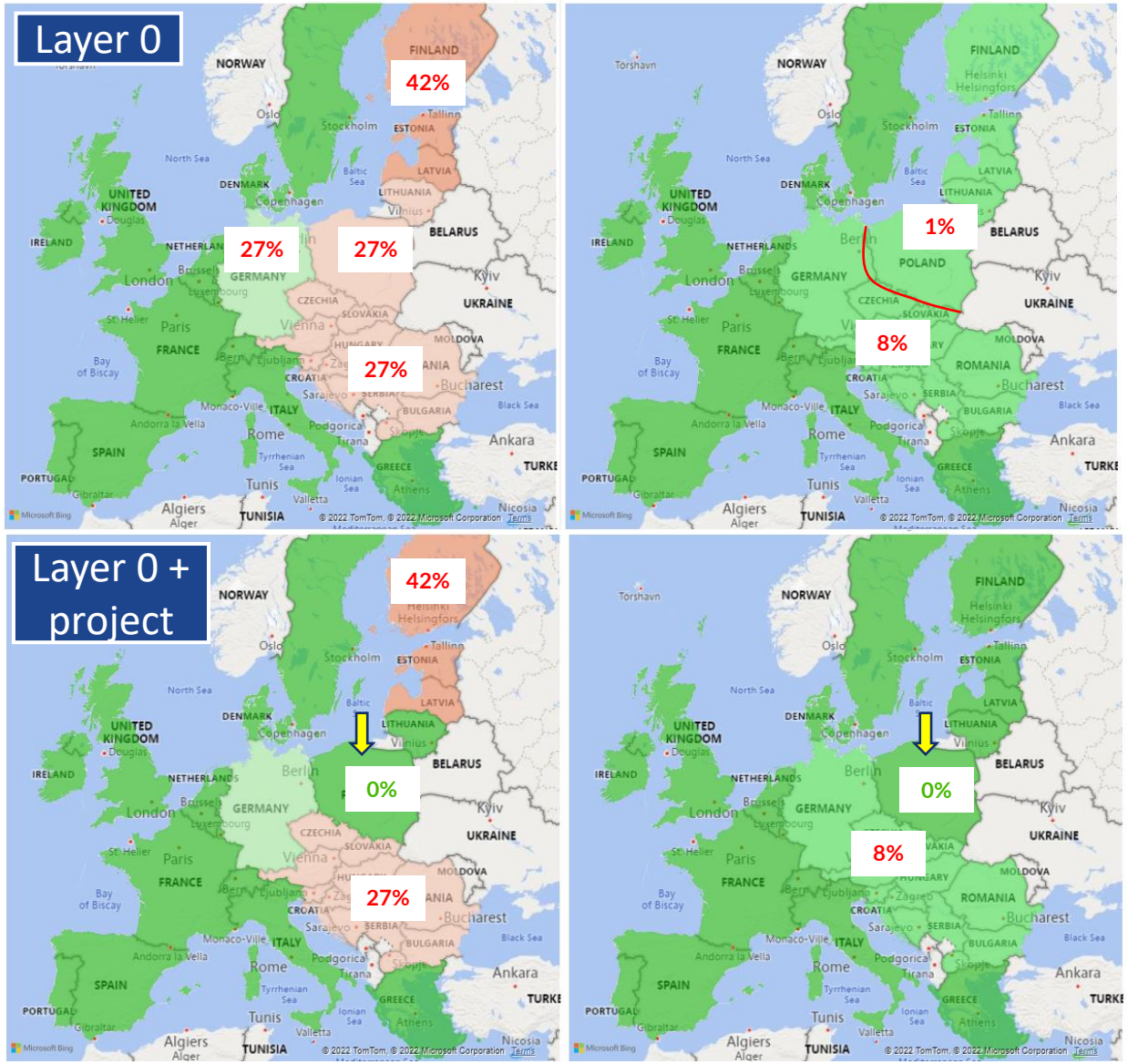


Gdansk FSRU

Impact of Gdansk FSRU

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in PL and LT

Current levels of demand and production

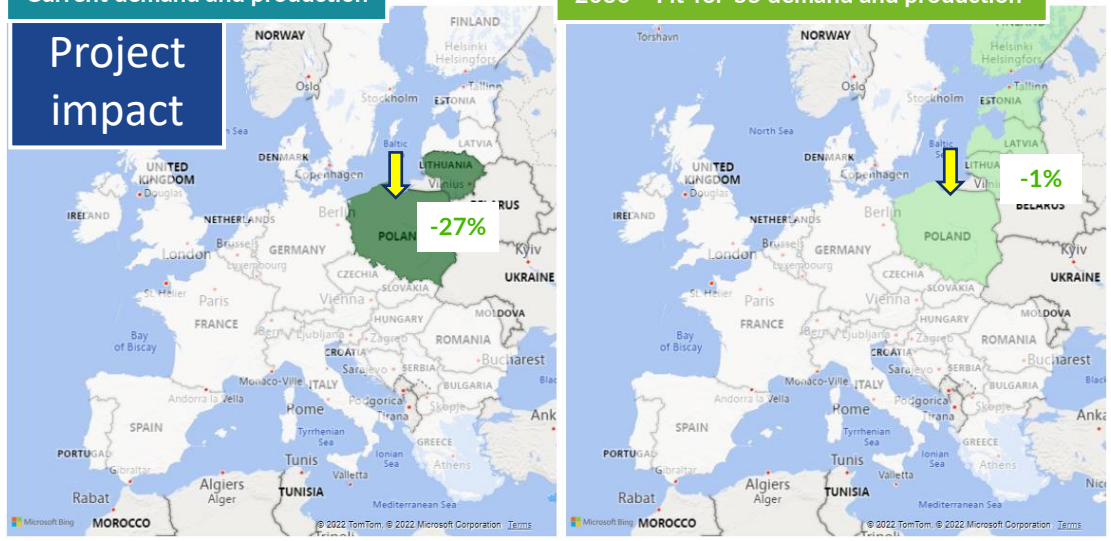
- Mitigation of dependence for PL and LT (-27%)

2030

- Achieves to mitigate the dependence on Russian gas for Poland, the Baltic States and Finland resulting mainly from demand reduction (-1%)

Current demand and production

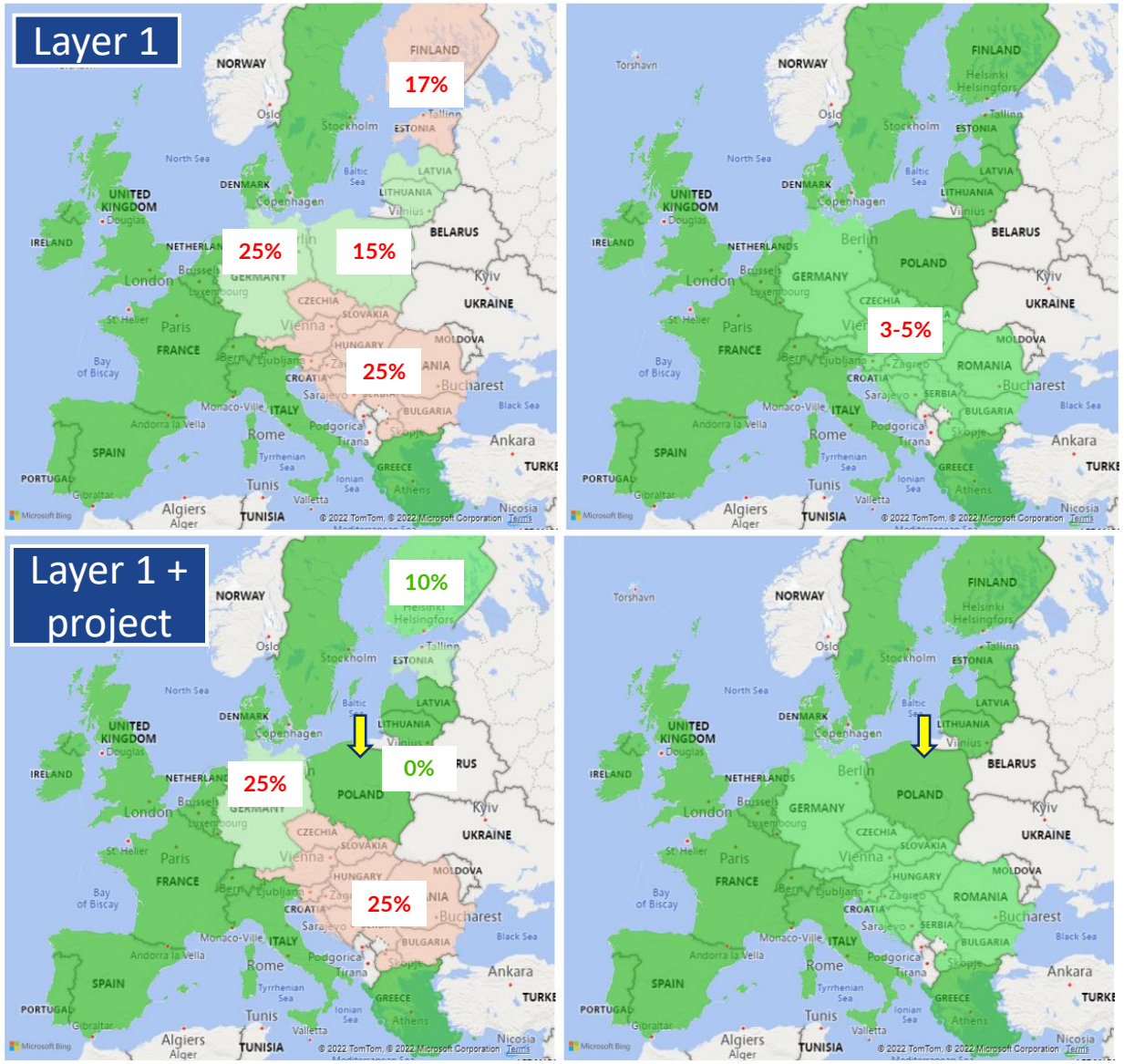
2030 – Fit-for-55 demand and production



Impact of Gdansk FSRU

Current demand and production

2030 – Fit-for-55 demand and production



Improvement of cooperation in PL, LT, LV, EE and FI

Current levels of demand and production

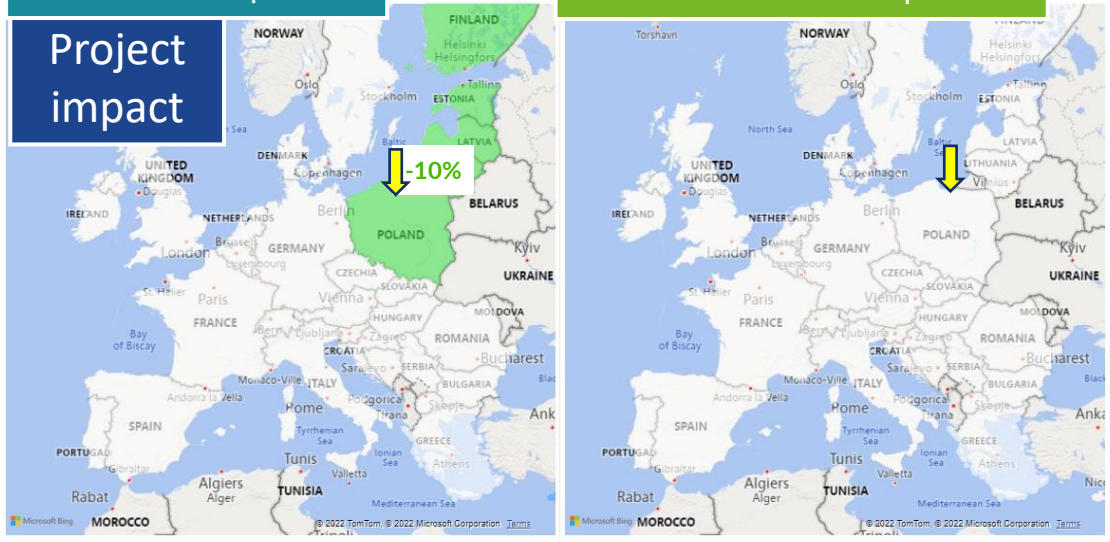
- Mitigation of dependence for PL, LT and LV (-15%)
- Improvement in EE and FI (-7%)

2030

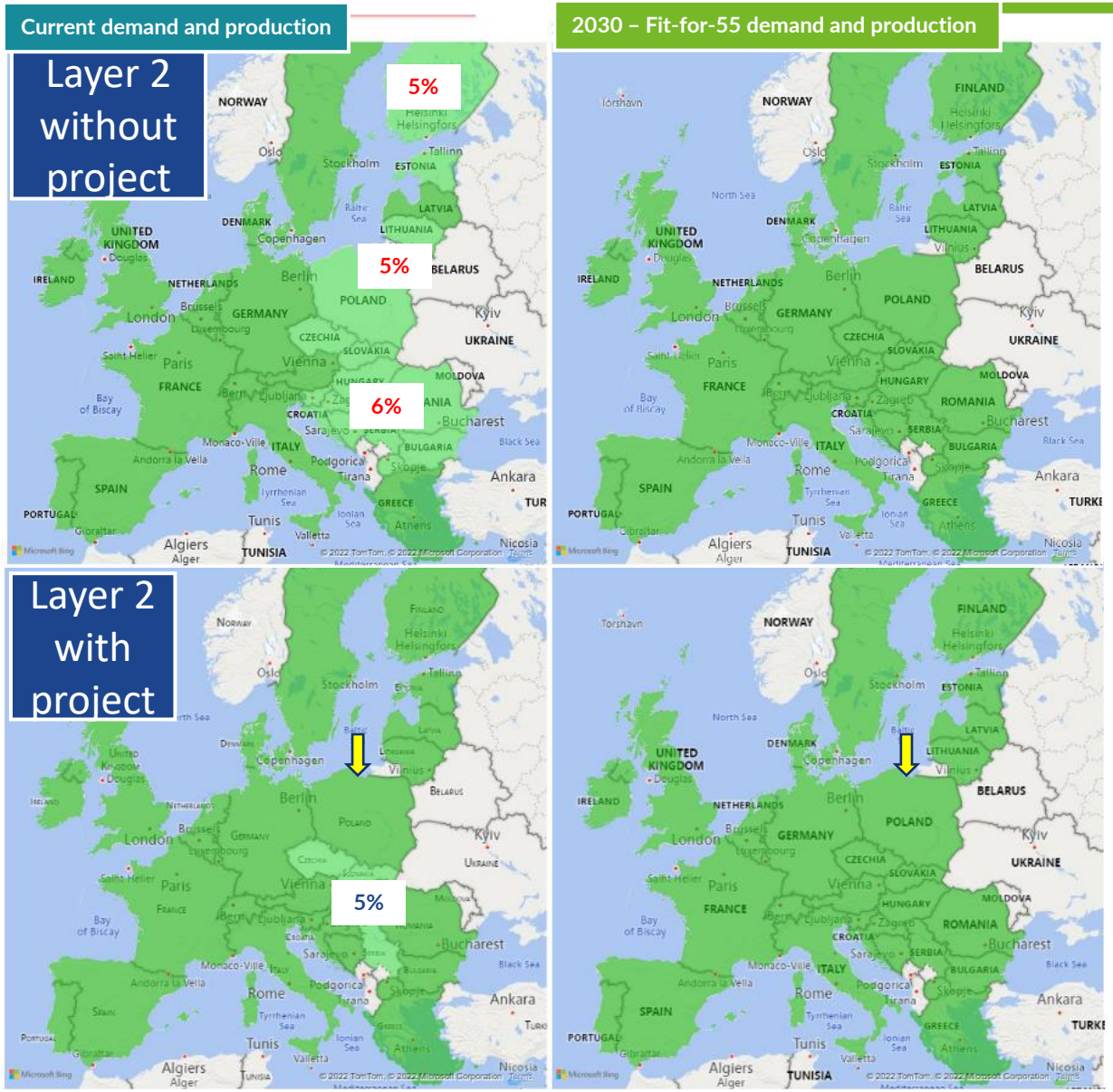
- The total mitigation of the dependence on Russian gas for Poland, the Baltic States and Finland results from demand reduction

Current demand and production

2030 – Fit-for-55 demand and production



Impact of Gdansk FSRU



Improvement of cooperation in PL, LT, LV, EE and FI

Current levels of demand and production

- Mitigation of dependence for PL, LT, LV, EE, FI (-4%)
- Improvement in SEE and CEE (-1%)

2030

- The total mitigation of the dependence on Russian gas for Poland, the Baltic States and Finland results from demand reduction