

Improving economic policy



Between diversification and autarky

The war in Ukraine and its impact on the Energy Transition in Europe

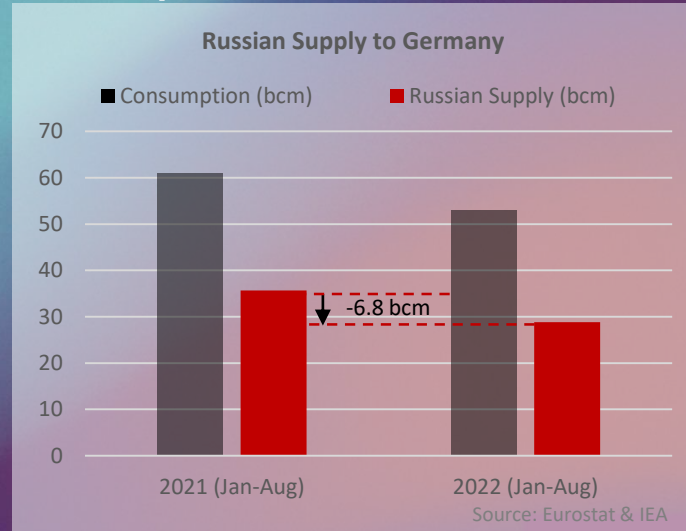
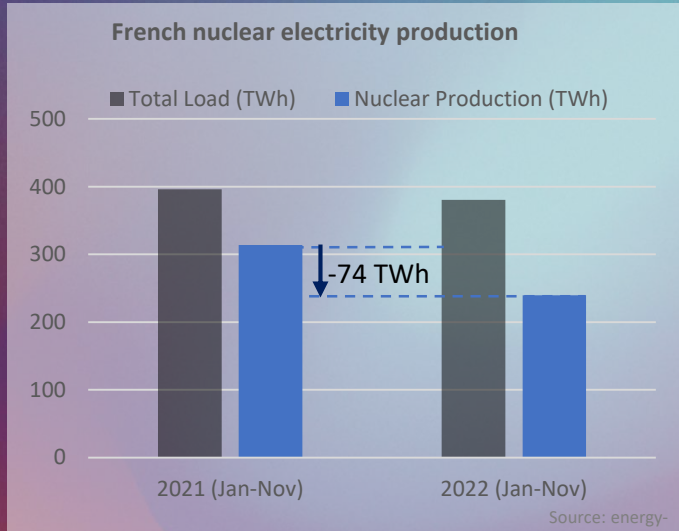
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Germany and France face an unprecedented energy supply crisis



Double Crisis in Europe

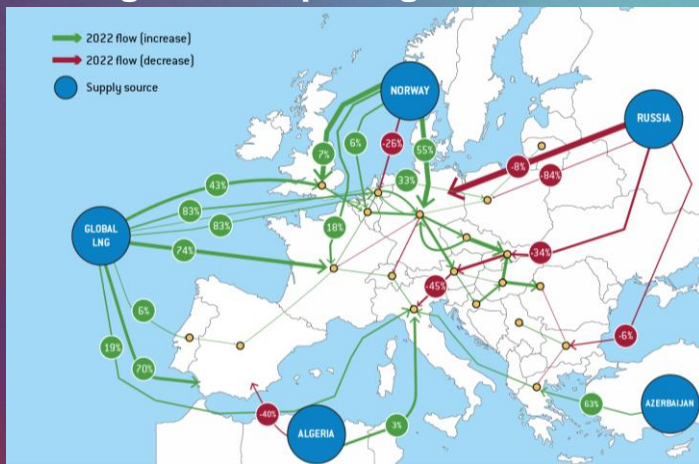


- + **Global fuel shortage:**
- Global underinvestment crisis
- Coal and oil/products embargo might exacerbate supply shortage

The internal energy market safeguarded supply security in DE & FR

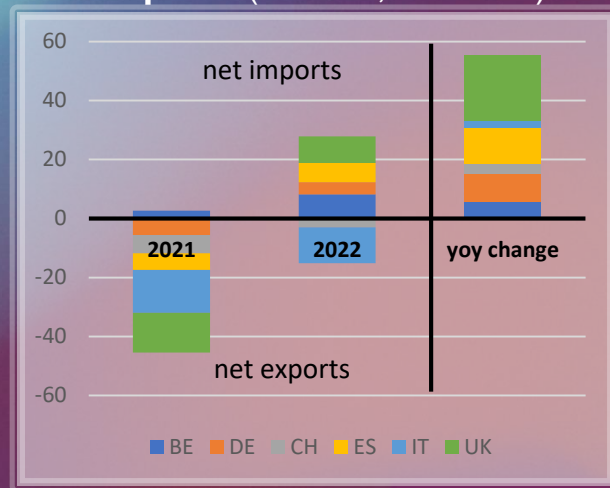


Change in European gas flows



Source: Bruegel 2022

Change in French electricity net-imports (in TWh, Jan-Nov)

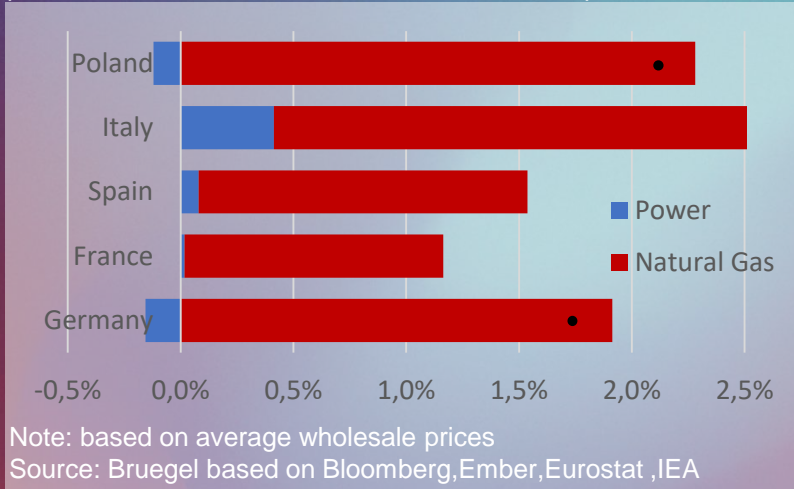


Source: energy charts

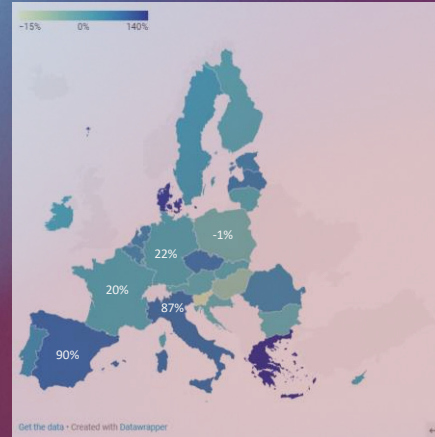
Substantial price impact on countries and consumers



Change in Net Import Costs (1H22 vs 1H21, as % of 1H22 GDP)



Change in HH electricity prices (1H22 vs 1H21)



Source: Eurostat

Crisis has massive distributional effects between countries and within countries.

“Just let markets work” is no option

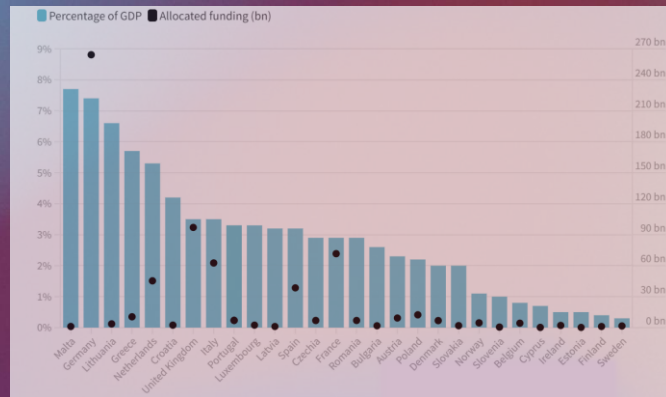


- Quickly rising energy prices are a social and economic problem; and politically unbearable in every country
- Massive spill-overs between countries in the internal market ...
 - Germany is exporting high gas prices
 - while France is exporting high electricity prices
- ... test European solidarity

Risk that internal market might break!

[hoping for Russian gas would not only be appalling and geostrategically wrong, but will likely not bring back cheap energy]

Governments earmarked and allocated funding (Sep 2021 - Oct 2022) to shield households and businesses from the energy crisis



Last update: 20.10.2022

Source: Bruegel 2022

Interference in electricity and gas prices risks massive negative effects on energy-balance

Some issues with TTF cap

- Will we still get the volumes?
- Will we still reduce demand enough?
- Will gas still flow across borders?

Some issues with the Iberian exception

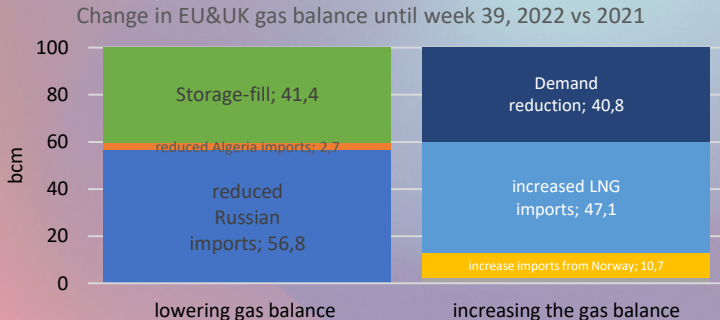
- Electricity demand might jump back at lower prices

If DE electricity savings are reversed, an additional FSRU (4 bcm) is needed

- Gas displaces coal

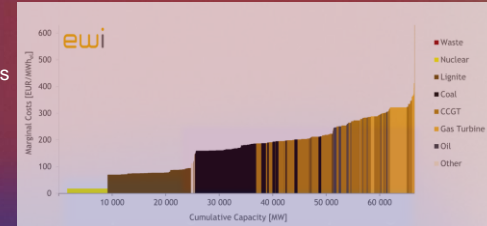
Under specific assumptions, to meet 50 GW of residual load, 18 GW of gas fired power plants would run

at 50€/Mwh_{gas} instead of 8 GW at 150€/Mwh_{gas}



Source: Bruegel GasImportTracker based on EntsoG and AGSI

Note: Demand reduction is value implied by change in storage and imports (i.e. also includes changes in domestic production and other differences)



Neither price cap, nor “everyone on its own” is a solution



- Markets might break if distributional concerns are not addressed
- Addressing distributional concerns purely fiscally will exceed capacity in some countries
- Intervening in energy prices implies massive risks for supply security

-> preserve the market

- France is core to preserve European-based market solutions

-> and organize transfers

- Germany has a special responsibility, ability and benefit to contribute

Solution : positive-sum resource pooling



Three promising elements:

1. Joint industry support mechanism

- Prevents harmful subsidy races

2. Fund to incentivise energy savings and accelerate the roll out of clean solutions

- Including coordination of roll-out sequence, amidst temporarily limited equipment supplies (PV to Italy)

3. Joint gas purchasing

- Creating better bargaining power and transparency via a liquid LNG-import market
- Overcome mandatory-vs-voluntary-dispute by providing joint top-up-funding for using the platform

Replacing 1500 TWh of Russian gas, forever



More domestic
energy production

1500 TWh of
Russian gas

Lower
energy
demand

Different import
sources / fuels
(CH₄, H₂, NH₃)

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Future of Industry



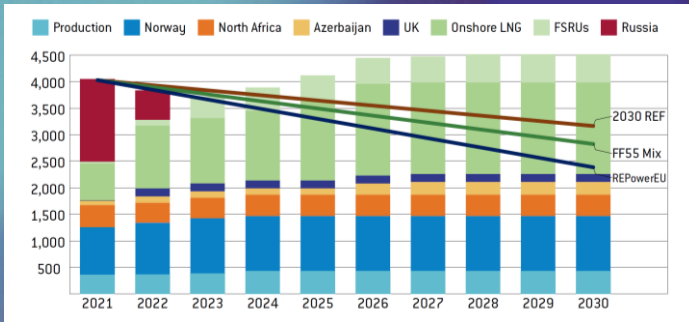
Three approaches:

- **Last out until new cheap energy imports arrive or new domestic supply is built up**
 - Subsidies
 - Push demand reduction on others (HH, neighbours, partners)
 - New gas import infra / keep door to RU open
- **Maintain structure, but outsource energy-intensive steps within DE/EU or globally**
 - Protect value core
 - Reduce subsidies/barriers / rethink CBAM
- **Deep structural transformation (deindustrialisation?)**

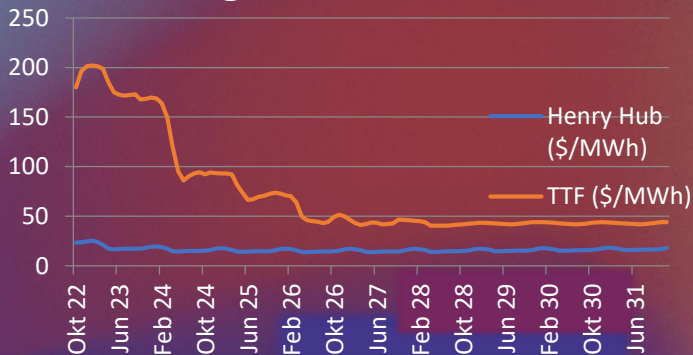
Gas import strategy is risky

- Current approach is to “last out” until the tankers arrive
- But gas will be more expensive
- Convergence via factor, intermediary product or final product trade?
- And we risk killing the global climate agenda
- It is time for a mechanism

Some onshore terminals might not be needed



Price divergence EU-US



Side note: It is time for a mechanism for Russian gas

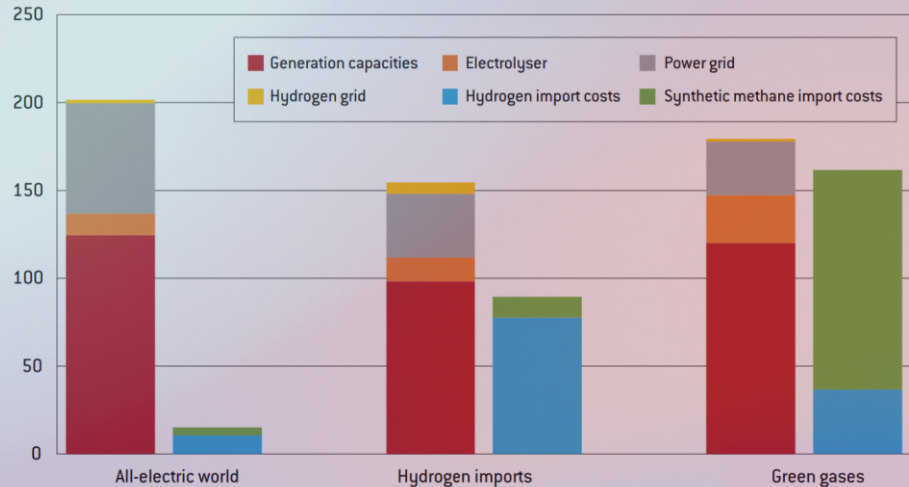


- We have no sanctions on Russian gas imports
- If Russia wants, they can still bribe individual European consumers with cheap gas
- An indefinite full embargo might neither be credible nor in the interest of EU consumers
- We need a safeguard-mechanism that sets clear limits to future Russian gas flows, e.g. including:
 - max market share,
 - min share in individual routes,
 - Trade only through pooling mechanism

Keeping all industrial energy consumption in Germany will be very expensive

- REPowerEU: investment needs to “gradually decouple from Russian gas by 2027” to EUR 210bn by the end of 2027.
- Speeding up might grow investment needs from 2% of GDP to maybe 3% [no good numbers]
- Time dimension:
 - smooth is cheap
 - Increasing r (IRA)

Figure 4: Annualised investment costs (left-hand bars) and fuel import costs (right-hand bars) in the three scenarios, 2021-2050, € billions



Source: Bruegel. Note: In each case, the left bar indicates the average annual investment cost and the right bar the annual fuel import cost.

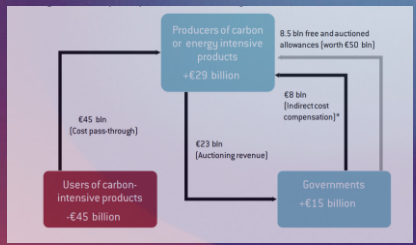
Subsidies served to protect energy intensive production – that generates limited value/jobs



German industrial electricity consumers obtain billions in:

- indirect cost compensation,
- network cost and FIT-levy exception,
- electricity tax reduction,
- energy-cost-compensation

Free Allowances created billions of windfall profits



https://www.bruegel.org/sites/default/files/wp-content/uploads/2018/11/Bruegel_Blueprint_28_final1.pdf

The most energy intensive products imply less jobs relative to turnover



https://www.bruegel.org/sites/default/files/wp-content/uploads/imported/articles/Energy_Competitiveness.pdf

Some re-location must be efficient

• What will Germany/France import – and from where:

- Electricity?
- Hydrogen?
- Green Methane?
- Green Ammonia?
- Green steel?
- Green cars?

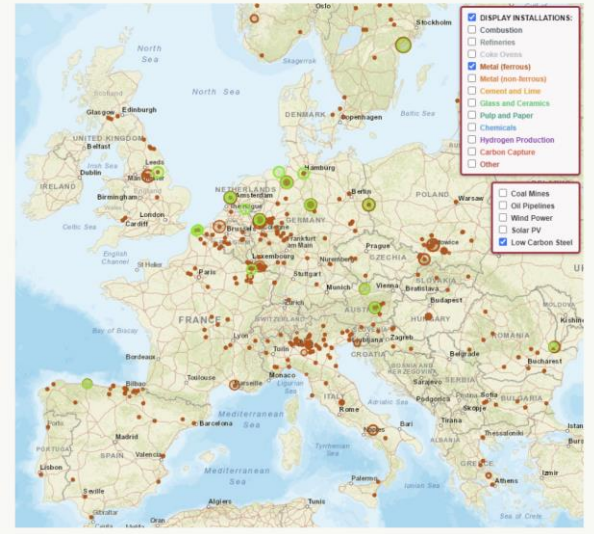
Drivers for onshoring:

- Infrastructure
- Support policies (e.g. for H2 imports)
- But not CBAM

Relocate Industry

- Zonal pricing debate

Figure 4: Low carbon steel plants planned next to existing capacity



Support Ukraine's energy system!



- Failure of supporting Ukraine's energy system over the winter would have disastrous humanitarian consequences
- And forcing Ukraine's government to submit to Russian terror for lack of support might have fundamental implications for Europe.
- Stabilising Ukraine's energy system is an urgent priority!

Screenshot of list of Ukrainian equipment needs

Equipment	Description
Autotransformers	333 000 kVA, rated voltage HV/MV/LV 750/330/15,75 kV
	250 000 kVA, rated voltage HV/MV/LV 330/150/35 (10) kV, rated voltage HV/MV/LV 330/220/35 kV
	200 000 kVA, rated voltage HV/MV/LV 330/110/35(10) kV
	125 000 kVA, rated voltage HV/MV/LV 330/110/35(10) kV
	200 000 kVA, rated voltage HV/MV/LV 220/110/10 kV
Transformer	125 000 kVA, rated voltage HV/MV/LV 220/110/35 (10, 6)kV
	20 000 kVA, rated voltage HV/MV/LV 110/35/6 kV
Circuit breakers	750 kV /4000A/40 kA
	330 kV/3150A/40 kA
	220 kV/3150A/40 kA
	150 kV/3150A/40 kA
	110 kV/3150A/40 kA
Disconnectors	35 kV/2000A/40 kA
	750-330kV/3150A
	220-150-110-35 kV/2000A
Current transformers	150 kV/ 2000A
	750 kV, transformation ratio - 3000/1, accuracy class - 0,2S/0,2S/10P/10P/10P
	330 kV, transformation ratio - 2000/1, 2000/5, accuracy class - 0,2S/0,2S/10P/10P/10P
	220 kV, transformation ratio - 1200/1, 600/5, 600-1200/5, accuracy class - 0,5/10P/10P/10P
	150 kV, transformation ratio - 1200/5, accuracy class - 0,5/10P/10P/10P
Voltage transformers	110 kV, transformation ratio - 750-1500/1, 1500/5, 600-1000/5, accuracy class - 0,5/10P/10P/10P
	35 kV, transformation ratio - 1500/5, accuracy class - 0,5/10P/10P/10P
	rated voltage - 330, 220, 110, 35 kV
	750 kV, SA rated voltage - 612 kV, line grade class as per IEC - 3
	330 kV, SA rated voltage - 288 kV, line grade class as per IEC - 2

Thank you!