

EU Energy & Industry Policy

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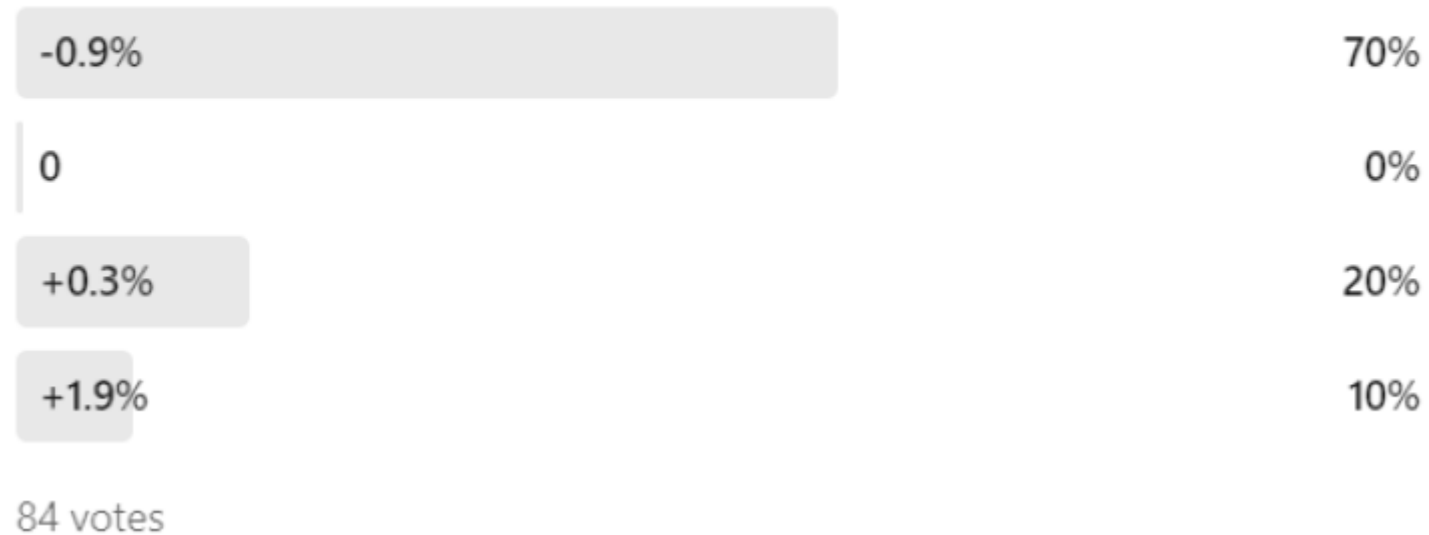
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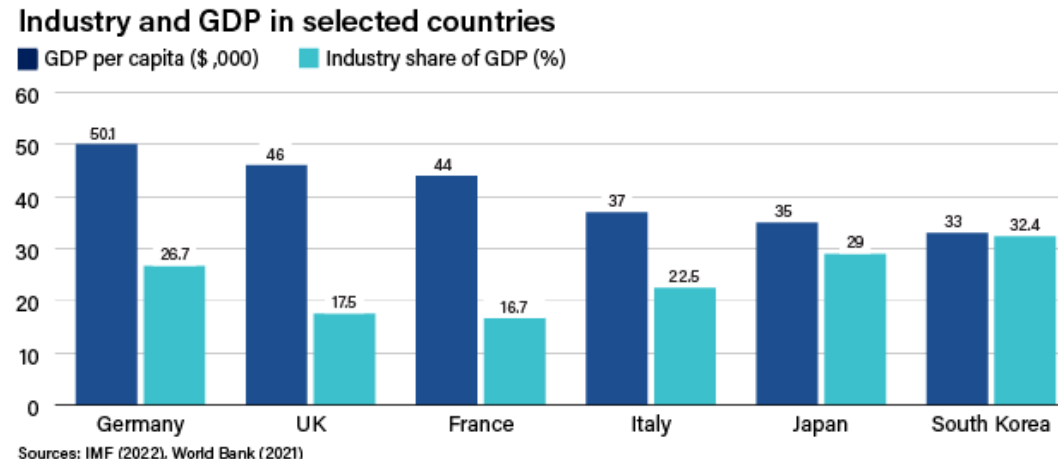
Summary - EU Energy & Industry

By how much did EU industrial output change in 2022?



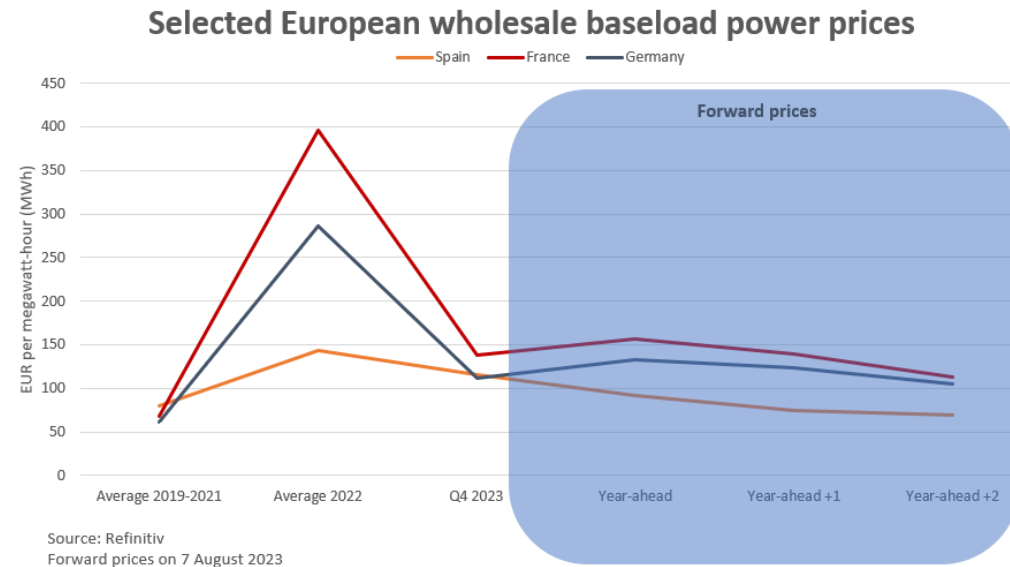
Summary - EU Energy & Industry

- The EU is combining Covid-19 and energy support measures to develop a broader industrial policy aimed at **keeping the bloc competitive** while accelerating the green transition. Core at Brussels level are policies like the EU Green Deal Industrial Plan but also the Chips Act.
- A crucial component of this strategy is providing the EU's heavy industry (e.g. steel and chemical production) with **energy cost support through incentives to decarbonize**, while also attracting investment into core sectors such as semiconductor manufacturing.
- The measures will likely start to reduce the EU's overall fossil fuel energy imports from **2024** and therefore have a deflationary impact via lower power prices.
- Importantly, these moves will help prevent a much-feared deindustrialization and instead support an acceleration of overall economic growth toward the middle of the decade.



Key Goal – Lower Power Prices

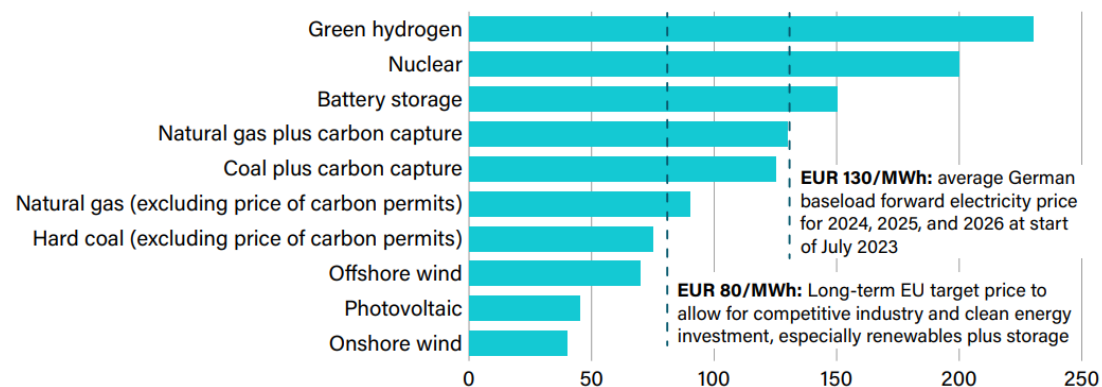
- A key EU goal is to bring wholesale power prices down to tolerable levels for industry and households.
- Although costs have already dropped substantially, the forward curve remains too high at more than EUR 100/MWh.
- The goal is to get EUR 80/MWh which would be the inflation adjusted 2019-2023 average (note: Spain has already achieved this).
 - This price would be affordable for industry while being high enough to allow for investment into all forms of renewable power generation plus storage solutions (6/1 generation/storage capacity principle), and it might be enough to allow for CCUS (assuming technology costs come down with scale). However, conventional nuclear power will unlikely be competitive.



Key Goal – Lower Power Prices

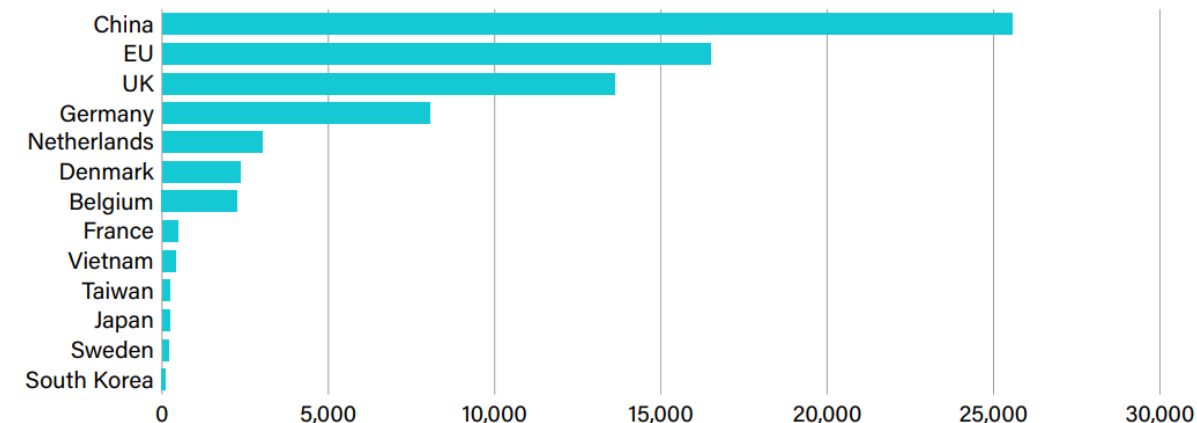
- Europe’s best placed regions to achieve lower power prices are the Iberian Peninsula and the North Sea basin, where the combination of renewables plus green hydrogen will bring down prices.
- Especially the North Sea basin is now on track to emerge as (one of) the world’s first major heavy industry clusters that largely achieves de-carbonization within the coming decade.

Average cost in EU of electricity by generation source versus forward electricity price
\$ per megawatt-hour



Sources: Eurasia Group via Refinitiv, BloombergNEF, Lazard

Installed offshore wind capacity in GW



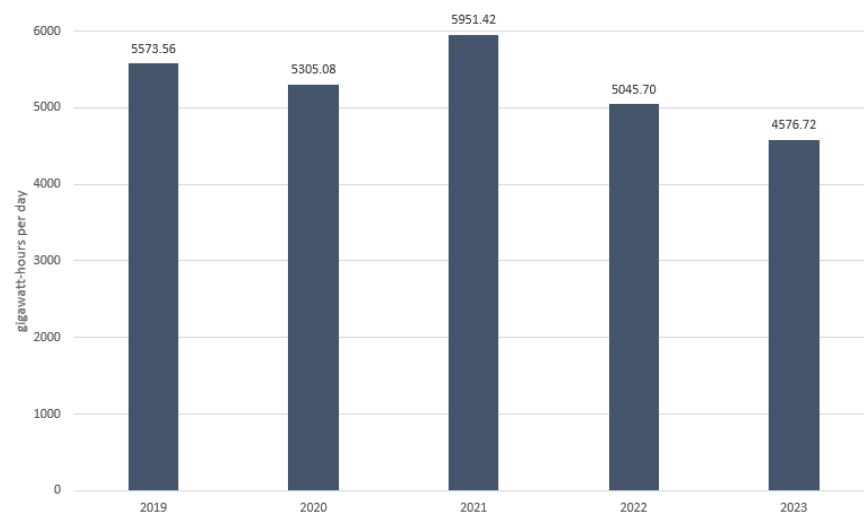
Source: Eurasia Group via World Forum Offshore Wind



Key Goal – Improved Energy Efficiency

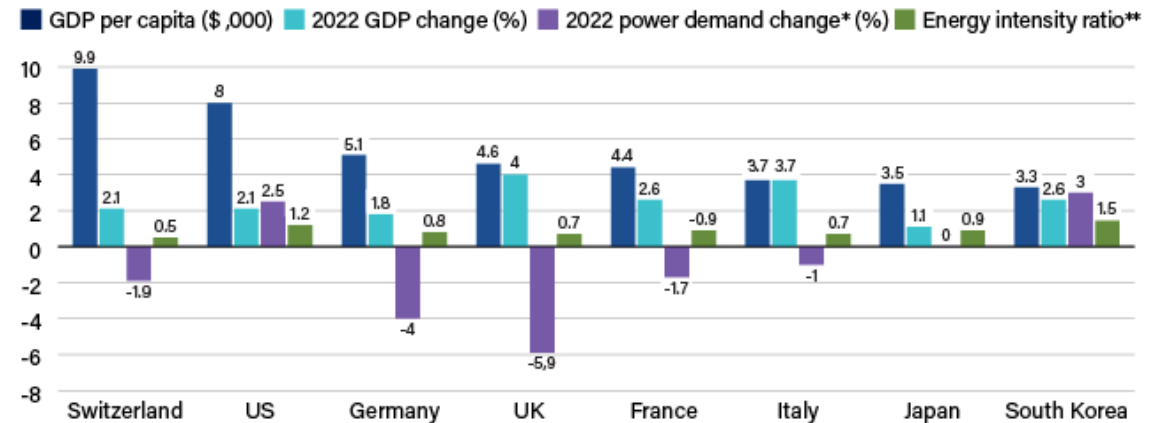
- **At the heart of the recent and ongoing developments is the energy crisis brought on last year by Russia’s invasion of Ukraine** and the resulting energy confrontation between Moscow and the EU. The 2022 spike in European energy prices caused by Russia’s pipeline supply cuts triggered warnings of an EU-wide deindustrialization and a steep economic contraction.
- **A key targeted outcome of the EU’s policy is to reduce demand by improving industrial efficiency levels** to allow for ongoing high manufacturing levels while consuming less, and cleaner domestic energy.

Northwest Europe* Jan-Jul average natural gas demand



Source: Refinitiv
* Belgium, France, Germany, Netherlands

Energy efficiency and GDP in selected countries



*Data for Japan and South Korea are industry estimates **Calculated dividing 2020 energy demand (kWh) by GDP per capita
Sources: Eurasia Group research using data from governments, IMF, Our World in Data, Bloomberg, Refinitiv

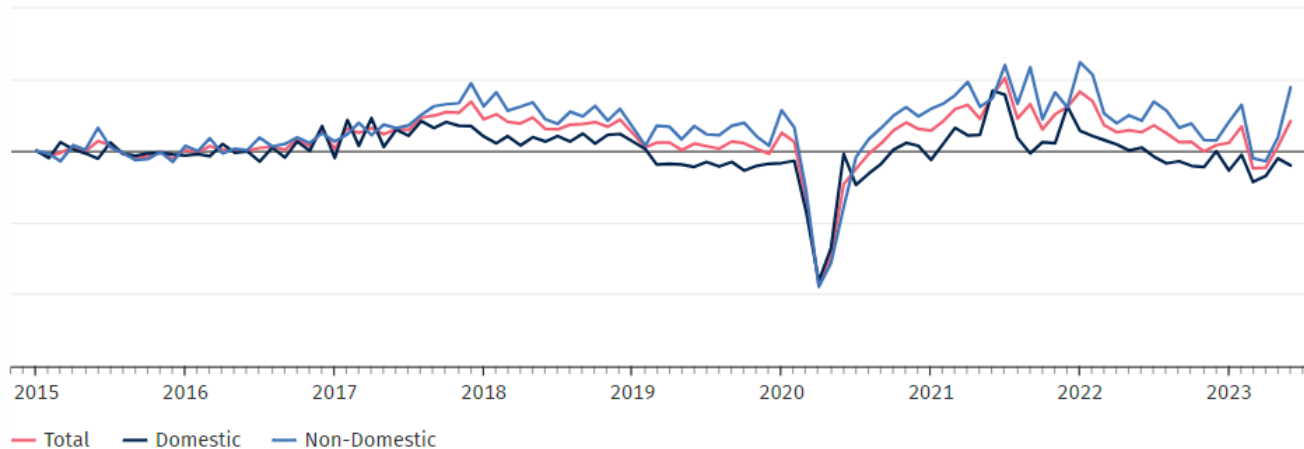


Key Goal – Maintain Output & Employment

- **The policy has largely worked: industrial output in the EU increased by 1.9% in 2022 versus 2021 (US manufacturing grew by 0.7% in 2022).**
- **It even held steady in badly affected and energy intensive economies such as Germany, where overall employment in manufacturing is increasing and orders for goods have started to increase again (though there is some distortion here from military orders).**

Index of new orders in manufacturing

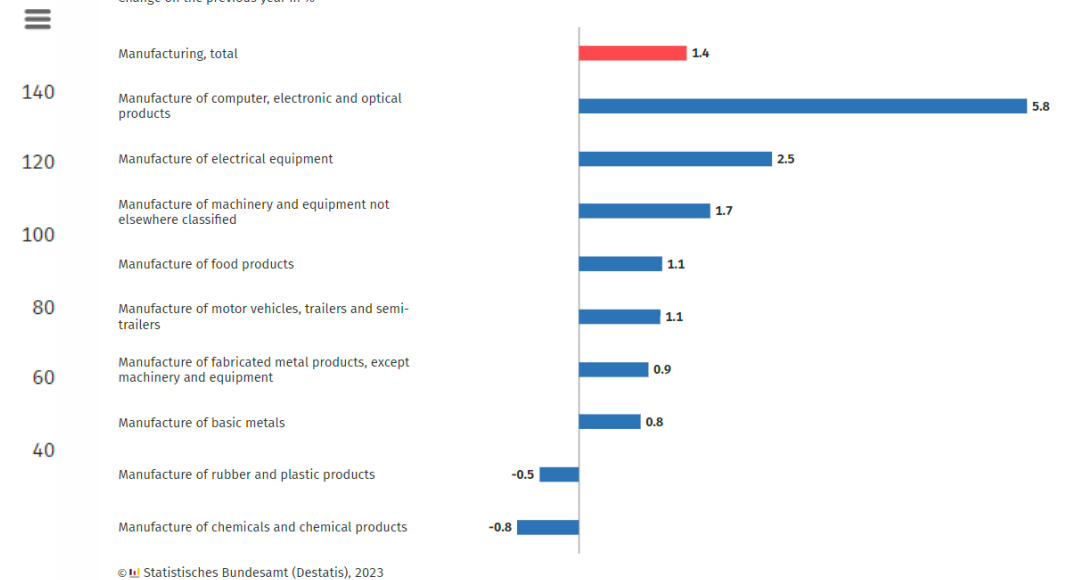
Volume index 2015 = 100; seasonally and calendar adjusted (X13 JDemetra+)



© Statistisches Bundesamt (Destatis), 2023

Number of employees in manufacturing, May 2023

Change on the previous year in %



© Statistisches Bundesamt (Destatis), 2023

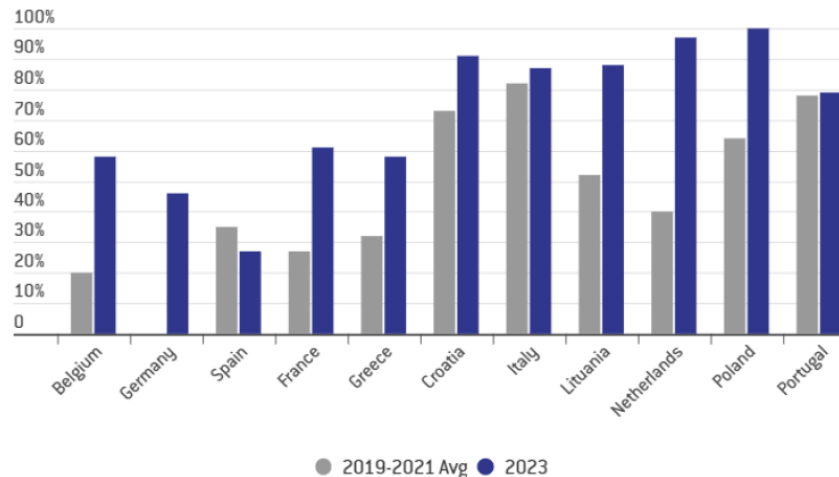


Implications – LNG Regasification & Hydrogen Adaptation

- **The policy has largely worked: industrial output in the EU increased by 1.9% in 2022 versus 2021.** It even held steady in badly affected and energy intensive economies such as Germany, where overall employment in manufacturing is increasing.
 - **The EU’s LNG regasification capacity (following last year’s expansions) is likely sufficient** to deal with all future demand, given ongoing declines in gas consumption thanks to improved efficiency and a buildout in alternative fuel capacity;
 - **Some of the floating facilities will gradually be replaced with fixed terminals which can eventually be modified to handle hydrogen/ammonia imports.**

LNG regasification utilisation

Last update: 27/07/2023 (updated every Tuesday/Wednesday)



Note: Utilisation defined as "send out" divided by Declared Total Reference Send-Out (send-out capacity)

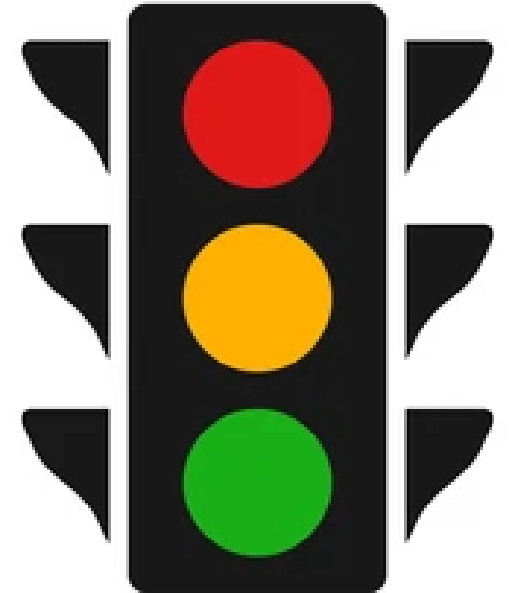
Source: Bruegel based on GIE-ALSI.



Three Tools - The Traffic Light Rules

To achieve its goals, the EU is using three main policy tools:

- **Bans:** for the future use of fossil fuel technologies like the internal combustion engine, household gas boilers, coal-fired power generation, oil drilling;
- **Penalties & tightening regulation** that make the use of fossil fuels more expensive (e.g. tightening carbon permit system, carbon taxation, carbon tariffs, local emissions and fuel taxes);
- **Subsidies:** incentives like cash grants, loans, tax breaks, or contracts for difference (CfD) in support of green technology capacity build-out and demand creation.



- **Wherever there is a combination of these three policies in place at the same time, and where the subsidies are the most targeted and immediate while the bans come into place the soonest, an industrial green energy transition will happen the fastest – e.g. EU North Sea and Iberia.**



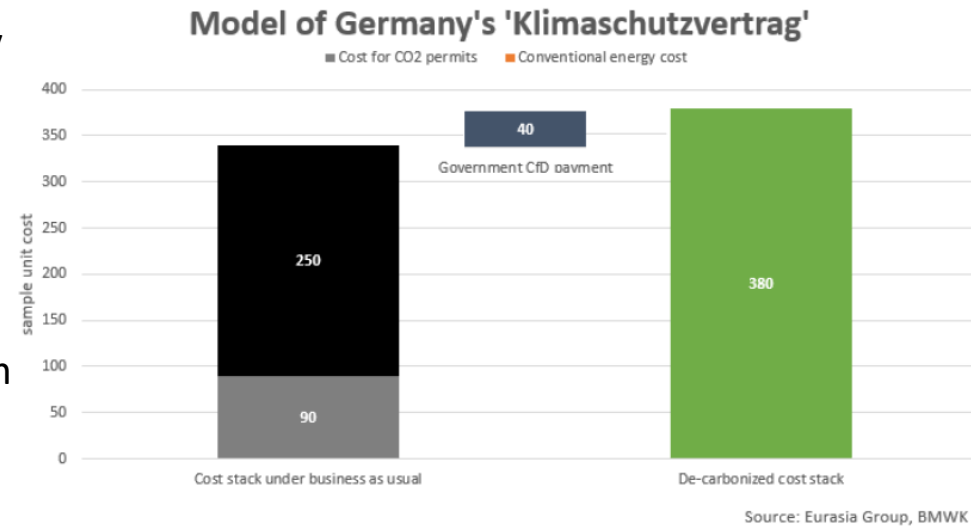
All Lights are Green

- **Bans - several looming:**
 - ❖ End new oil & gas heating systems (e.g. France: 2024, Nordics: 2024; Germany: 2024 under discussion);
 - ❖ Phase out coal-fired power generation (e.g. Italy: 2025, Germany/Netherlands/Spain: 2030);
 - ❖ End the sale of virtually all new internal combustion engine vehicles (EU-wide: 2035, unless synth fuel can be used).
- **Penalties & tightening regulation – many in place, more looming:**
 - ❖ Net zero greenhouse gas emissions laws even before the EU’s 2050 mandate (e.g. Finland: 2035, Austria: 2040, Germany and Sweden: 2045);
 - ❖ Highly priced (roughly €90/ton early July 2023) and tightening plus expanding EU emissions trading scheme (ETS), including beyond Europe via Scope 3 reporting and the looming CBAM;
 - ❖ Tightening waste & recycling rules which severely limit the use of plastic (e.g. single-use plastic goods ban: 2021, 60% municipal waste recycling rate by 2030, 65% by 2035 – up from 50% in 2020);
 - ❖ Spreading regional/urban/local emissions restrictions (e.g. low emissions zones, zero emissions zones, fossil fuel surcharges).
- **Subsidies – various in place at EU and national levels:**
 - ❖ EU Green Deal Industrial Plan combining funds and ‘soft’ loans, and tax breaks (e.g. Cohesion Fund, Green Steel for Europe, Horizon Europe, Innovation Fund, Invest EU, Just Transition Fund, Recovery & Resilience Plan, REPowerEU);
 - ❖ Member-state level funds, most of which combine EU and national funds (e.g. Belgium’s WaterstofNet, France 2030 program, Germany’s Climate & Transformation Fund and Contracts for Difference for de-carbonization, Netherlands’ Energy Investment Allowance and SDE++ green industry support, Spain’s Renewable Hydrogen Map);
 - ❖ Green appliance subsidies (e.g. for EV purchases, clean boilers, rooftop solar panels, improved insulation, smart meters).



Example: Germany

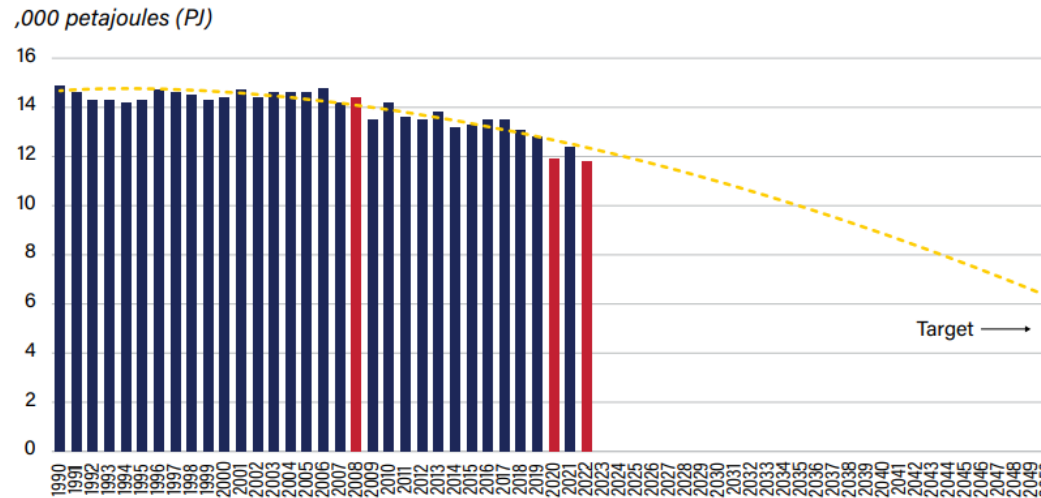
- **The EU's biggest green industry program was launched in Germany**, which in June announced a big long-term support policy for firms facing substantial energy costs by subsidizing decarbonization efforts. Key features are:
 - **The government will award so-called climate protection contracts (*Klimaschutzvertrag*), which are CfDs paid out up to 15 years.** The CfDs will pay out the difference between business-as-usual (using fossil fuels in energy intensive industry) and the cost to decarbonize industrial procedures by switching to clean fuels and solutions—until the clean solution becomes market competitive.
 - **Companies or joint ventures emitting at least 10 kilotons of CO₂ per year can apply for support payments**, which officials say will total about €50 billion. From 2024, there will be two annual bidding cycles for decarbonization CfDs.
 - **Industries that will likely receive CfD support to decarbonize are makers of glass, ceramics, base chemicals, chalk & cement, food, and steel.**
 - **The CfD will be adjusted regularly according to changes in costs for green energy technology versus that of fossil fuels or carbon emissions permits.**



Example: Germany

- The program is expected to attract significant domestic and overseas direct investment into Germany and have a deflationary effect on fossil-fuel consumption and greenhouse-gas emissions through several avenues:
 - an accelerated buildout of renewable power (especially rooftop solar and offshore wind), and green-hydrogen-generation capacity via electrolysis;
 - a shift away from fossil fuels (especially the use of gas in industry and of coking coal);
 - an accelerated reduction in demand for imported fossil fuels, especially natural gas;
 - a reduction in wholesale power prices (as gas and coal are replaced by renewable energy).

German primary energy consumption since reunification in 1990
(demand declines born out of crisis become permanent)*



Sources: Eurasia Group research, Umweltbundesamt
*2008 global financial crisis; 2020 Covid crisis; 2022 Russia energy crisis

Example: Germany

- **Germany is combining clean energy support with technological investment incentives**—which also tap EU funds from the Chips Act—the German government is likewise aiming to attract semiconductor investment.
- **Decarbonization funds can be combined with other support measures**, including:
 - *research and development,*
 - *land access,*
 - *infrastructure connections.*
- **The result has been a flurry of investments**, albeit at the cost of huge subsidies especially in battery and semiconductor factories (see also employment chart on slide 5).

Reuters

Infinion to begin work on 5 bln euro chip plant in Germany

BERLIN, Feb 16 (Reuters) - Infineon has won approval to begin work on a 5-billion-euro (\$5.35 billion) semiconductor plant in the German...

16 Feb 2023



Financial Times

<https://www.ft.com> > ... > Europe > Semiconductors

Intel to double its investment in German semiconductor ...

19 Jun 2023 — Intel is to ramp up its investment in two new semiconductor plants in eastern Germany from €17bn to €30bn in exchange for higher government ...



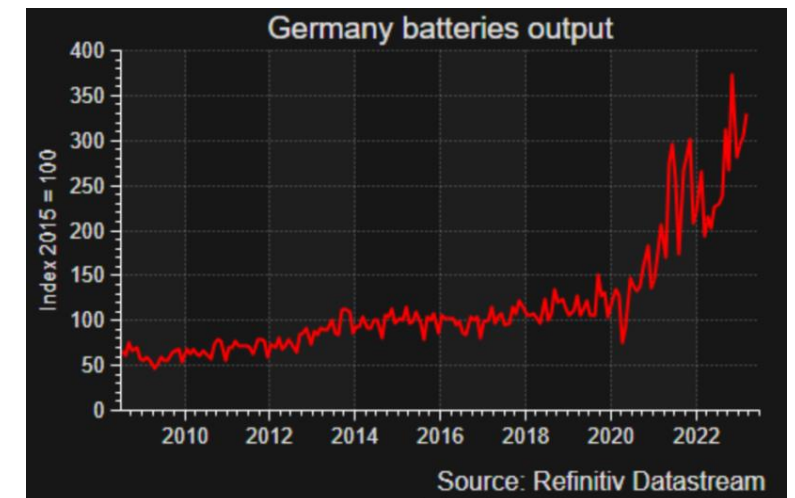
Reuters

<https://www.reuters.com> > technology > tsmc-feeling-go...

TSMC feels 'good' about possible Germany plant ... - Reuters

Reuters

6 Jun 2023 — The world's largest contract chipmaker, TSMC has been in talks with the German state of Saxony since 2021 about building a fabrication plant ...



Not just Germany

- **Although Germany's industrial energy policy is currently the largest in Europe in financial terms, it is not the only one of its kind:**
 - **For several years, the Dutch government has had an annual subsidy program, the Stimulation of Sustainable Energy Production and Climate Transition (abbreviated SDE++),** which has spent €30.7 billion since 2020 (€4.7 billion in 2020, €5 billion in 2021, €13 billion in 2022, and €8 billion in 2023) to advance the decarbonization of heavy industry, especially around the Port of Rotterdam.
 - **In Belgium, there are similar measures** centred around the port and chemical cluster of Antwerp
 - **Focusing industrial and clean energy support around their major industry clusters in the Amsterdam-Rotterdam-Antwerp (ARA) port regions,** these small but highly industrialized EU members are on track to create one of the world's biggest and earliest net-zero greenhouse gas industry clusters.
 - **In southern Europe, Spain's big energy sector (both the traditional oil and gas companies as well as the power utilities) is cooperating closely with the country's chemical industry** to create similar coastal net-zero clusters.
 - **Poland is receiving large investments** into its manufacturing sector as well as a build-out of its (so far) underdeveloped offshore wind industry. This effort extends to the smaller Baltic states of Lithuania, Latvia, and Estonia as the entire region is seen as key in strengthening the resilience of the EU's eastern borders with Russia and Belarus. The region will also eventually benefit from Ukraine's reconstruction.



Rebuilding Ukraine

- **The EU is also taking leadership of immediate support and eventual re-constructing of Ukraine's economy.**
- **The key focus areas are/will be:**
 - **Immediate power system support to help Ukraine deal with the damage caused by Russia's aerial attacks**, while planning for a long-term green energy infrastructure development. Longer-term, Ukraine's large gas storage capabilities and well-developed pipeline system as well as the country's big renewable energy potential are to be integrated into the EU's wholesale energy market;
 - **Immediate agriculture and food support** to help maintain Ukrainian wheat exports (generate revenue) and help supply its people with food imports;
 - **Immediate transport, logistics & infrastructure support** for the people of Ukraine and plan for a future integration of the country's infrastructure with the EU's;
 - **Immediate support for Ukraine's badly damaged healthcare sector and long-term support for its re-construction**, including investment into local pharmaceutical production facilities;
 - **Plan for future Ukrainian green steel production** through outside investment into sustainable solutions like hydrogen replacing coking coal blast furnaces and providing local, renewable power generation, so Ukraine's re-construction can benefit local, sustainable industrial firms;
 - **Long-term development of Ukraine's sustainable natural resources** so these can be used for reconstruction, export, and to support a local processing industry that develops export revenues, especially to the EU.





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