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THE POLITICAL ECONOMY OF INDUSTRY TRANSITION TOWARDS CLIMATE NEUTRALITY IN GERMANY

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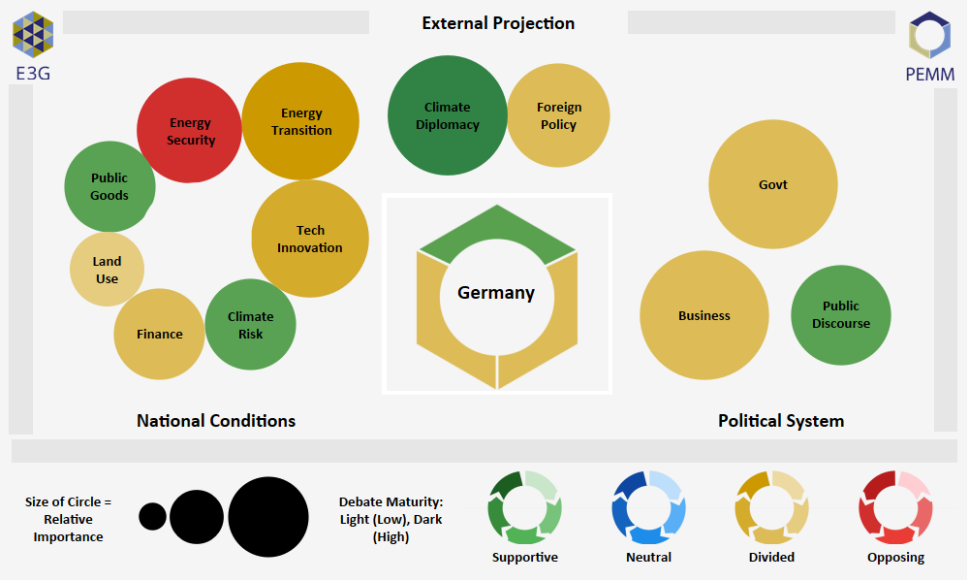
Industrial sectors play a major role in driving economic growth and exports as well as providing high-quality employment in Germany. The transition of steel, cement and chemical industries to climate neutrality will, however, require substantial technological advancement, a reformed regulatory framework, and rapid, targeted investments.

After long-standing resistance to decarbonisation efforts, many key energy-intensive businesses are taking a more progressive stance. They have started to invest in low-carbon industrial pilots and engage more constructively in policy debates about pathways to climate-neutrality. However, concerns about international competitiveness and uncertainty about the long-term regulatory pathway continue to present barriers to more ambitious action.

Germany is a key international player with potential for leadership on industry decarbonisation. It is a global leader in climate mitigation technologies for the power sector and is hoping to position itself similarly on the development of climate-neutral technologies for industry.

This briefing provides the main takeaways from E3G's political economy mapping of Germany's industrial decarbonisation.

Figure 1: Germany political economy mapping: three dimensional assessment



PEMM is an analytical tool developed by E3G to assess threats and opportunities to countries presented by the low carbon transition. It is a way of analysing and condensing a large, complex set of socioeconomic data to visualise and assess in-country real economy trade-offs. It has been used for many purposes, such as supporting the development of advocacy strategies and coalition building. E3G has analysed over 25 countries in detail since 2010 and adapted the PEMM to address sub-national and broader sustainable development issues, such as biodiversity and land use.[1]

Key Findings

The German industry transition challenge

Energy-intensive industries, automotive and machinery industries all play a major role in the German economy. Industry is export-oriented and drives economic growth through its significant value-added and large, high-quality employment.[2] The industrial core of the German economy has a strong cultural significance. 'Made in Germany' is synonymous with quality in international trade and is the subject of national pride.[3]

Steel, chemicals and cement are major energy consumers and accounted for 13% of Germany's total emissions in 2017.[4] The largest share comes from the steel sector

[1] E3G (2020) **Political economy mapping**

[2] The World Bank (2020) **Exports of goods and services**; The World Bank (2020) **Imports of goods and services**; The World Bank (2020) **Industry (including construction), value added**; The World Bank (2020) **Employment in industry**

[3] DW (2019) **Made in Germany: German products have best reputation**

[4] Agora Energiewende (2020) **Klimaneutrale Industrie: Schlüsseltechnologien und Politikoptionen für Stahl, Chemie und Zement**

(29% industry emissions), followed by chemicals (19%) and cement (10%).[5] **Emissions reductions in these sectors, which are largely covered by the EU Emissions Trading System, have stagnated over the past decade.**

Climate action continues to be considered a risk to the competitiveness of German industry. Despite benefiting from a range of subsidies, industrial sectors, in particular steel and chemicals, face rising costs, investment insecurity and strong international competition.[6] As a result, many large industrial companies, while committing to step up action, are not yet aligned with climate goals.[7] Strong ties between industry and government have significant implications for lobbying in Germany and the EU.[8] By contrast, medium-sized or large, often family-owned businesses, known as the "Mittelstand", are globally recognised for their innovation capacity but lack visibility in the political debate.

A growing sense of urgency and potential

To move the sector towards climate neutrality, a redirection of investments in the coming years is crucial. Many Germany industrial plants and assets are up for renewal and reinvestment in the next decade. 53% of steel blast furnace capacity, 59% of steam cracker capacity in the chemical sector and 30% of cement kilns require reinvestment and modernization by 2030.[9] Given the long-life cycle of industrial assets (at least 20-30 years), there is a need to make the right choices at this critical juncture.

At the same time, there is a growing optimism that the technologies needed to shift industrial sectors onto a climate-neutral pathway are starting to mature. The debate is strongly focused on the role of renewable hydrogen in helping to decarbonise primary steel production.[10] Large cement players are relying on CCU/S as the most promising solution. The decarbonisation of the chemical industry, the most diversified of these sectors, has been less of a focus in public discourse so far. In all three sectors, readily available interventions to improve material efficiency and circularity (reuse, recycling and remanufacturing) continue to be under-utilized.

Industrial players are starting to take a more progressive stance on transitioning towards a climate-neutral economy. A growing number of companies have made

[5] Ibid.

[6] Clean Energy Wire (2019) **Industry power prices in Germany: Extremely high – and low**; Carbon Market Watch (2016) **Der Mythos von der Verlagerung von CO_2-Emissionen (carbon leakage)**; Deutsche Bank Research (2020) **Germany Monitor**

[7] Alliance for Corporate Transparency (2020) **Database**

[8] LobbyFacts (2016) **German lobbyists in Brussels: Fighting the corner of German business interests**; InfluenceMap (2020) **InfluenceMap**

[9] Agora Energiewende (2020) **Klimaneutrale Industrie: Schlüsseltechnologien und Politikoptionen für Stahl, Chemie und Zement**

[10] Amelang, S (2020), **Germany bets on green hydrogen in quest for climate neutrality**

strong climate commitments and investments in R&D and pilots, including Salzgitter AG, Thyssenkrupp, ArcelorMittal and HeidelbergCement, representing a sizeable proportion of European industry commitments.[11] Although the larger industry associations still tend to focus on competitiveness concerns, their stance is starting to shift to more constructive criticism.[12] Progressive business associations such as Stiftung 2 Grad are taking a significantly more ambitious stance on industry decarbonisation. They recently published a report signed by a coalition of businesses calling for a stronger policy framework and more support for energy intensive industry sectors to smooth the transition to climate neutrality and recover from the impacts of the Covid-19 crisis.[13]

There is a growing sense among industrial players and policymakers that the transition to climate neutrality could enhance German industrial competitiveness. Germany is a global leader in climate mitigation technologies in the power sector and is hoping to position itself similarly on clean industrial technologies and renewable hydrogen.[14] Its strong industrial clusters are dependent on international supply chains and "own" important parts of supply chains in other member states. Germany is one of the few member states in which strong concerns have been raised about border carbon adjustments, as its export-oriented industrial sectors would be hit hard by any retaliatory trade measures.[15]

But risks to industrial transition persist

Several risks to the decarbonisation of German industry persist that require targeted interventions:

- The country is expanding its gas infrastructure, which could incentive a coal-to-gas switch and risks locking Germany into a pathway that will make it harder to switch to increasingly competitive clean energy solutions down the line.[16] Moreover, surplus gas infrastructure may add to the already sizeable share of network costs in industry energy bills.
- The focus on the role of hydrogen in industry decarbonisation is not sufficiently embedded in a broader discussion of renewable energy needs to actually allow for the scale up of green hydrogen. It also risks eclipsing crucial circular economy and material efficiency measures.
- CCU/S continues to be a controversial topic in Germany. This prevents a more systemic discussion on least-cost and risk-managed deployment pathways in the chemical and cement sector.

[11] CDP (2020) **Companies**

[12] BDI (2018) **Studie zum Klimaschutz: Kernergebnisse der Klimapfade für Deutschland**

[13] Stiftung 2 Grad (2020) **Business Statement for crisis management and a sustainable future**

[14] Amelang, S. (2020), **Germany gets serious about decarbonising its prized heavy industry**

[15] Julian Wettengel (2020) **EU should not rush carbon border tax – German official**

[16] E3G (2020) **Gasinfrastruktur für ein klimaneutrales Deutschland**

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- Concerns about the transition persist within industry and some trade unions and businesses are taking an opposing stance. For example, the industry trade union IG BCE has voiced concerns about a fast transition in the past. Europe's largest trade union, IG Metall, has developed a more ambitious stance, calling for a move to climate neutrality while ensuring a just transition.
- Civil society is highly active on broader climate concerns, but industrial decarbonisation is not yet seen as a "campaignable" issue.
- German industry is dependent on international supply chains and faces mounting climate risks on multiple fronts (e.g. access to raw materials, risks to installations, logistics), but these are not sufficiently factored into company strategies.[17]
- EU business associations and their German members continue to mount strong lobbying efforts to retain and expand industry exemptions at the EU level.[18]

Crucially, there continues to be a lack of concerted policy efforts to help industry transition. The new national Industry Strategy 2030 placed an emphasis on green hydrogen but failed to drive the broader uptake of low-carbon technologies and products. The domestic hydrogen strategy and recovery package aimed to address these shortcomings. The hydrogen strategy stipulated demand-side measures including "Carbon Contracts for Difference" for steel and chemicals and a potential quota for green raw materials.[19] The recovery package included funding for green hydrogen, a buyers' premium for electric vehicles and hybrid vehicles, and support for the transformation of the automotive sector.[20] Yet these policy files continue to lack details on the sequencing of policy instruments and the amount of funding available to systemically decarbonise industrial processes.

Three key actions

> **Review the national Industrial Strategy to recover better:** The Industrial Strategy should be reviewed in light of the growing support from industry for more concerted decarbonisation efforts and actions put forward in the recovery package. This should include a credible pathway to decarbonise industry by 2050 and immediate actions to manage the reinvestment needs in each sector over the coming decade to ensure these do not lock-in carbon-intensive processes. A time-bound sequence of policy instruments should be set out to decarbonise industrial processes and products, including targeted

[17] BMWI and Adelphi (2014) **Analyse spezifischer Risiken des Klimawandels und Erarbeitung von Handlungsempfehlungen für exponierte industrielle Produktion in Deutschland**; Unwelt Bundesamt (2013) **Climate impacts: Field of action industry and commerce**; CDP (2020) **Companies**

[18] Reuters (2019) **German industry sounds alarm over EU carbon border tax**

[19] BMWI (2020) **The National Hydrogen Strategy**

[20] BMF (2020) **Emerging from the crisis with full strength**; BMF (2020) **Das Konjunkturpaket**

support for climate-neutral technologies and innovation. This should go beyond hydrogen infrastructure to encompass circular economy, renewable energy expansion, sector coupling and the role of CCS. The strategy should also set out a clear plan for introducing more policies to create lead markets for cleaner industrial products, such as the quota for green raw materials floated in the hydrogen strategy.

- **Play a leading role in EU and global industrial decarbonisation:** Germany's stance on industrial transition continues to be critical in determining broader EU ambition. The European Commission has proposed a busy work programme for 2021, with at least 12 important files for industry transition. German engagement and ambition across these files to ensure a credible policy framework for industry transition will be decisive. Further afield, Germany should be actively involved in the Leadership Group for Industry Transition. It should build strategic partnerships along its supply chains and with international climate finance partners to mainstream best practices on industrial decarbonisation and climate risk management. A shift in focus in Germany's energy diplomacy from fossil fuels to clean energy should go beyond hydrogen diplomacy, the current focus, to also encompass circular economy, renewables, sector coupling and CCS, taking advantage of its role as the secretariat of IRENA. Germany's institutionalised international presence, for example in the Chambers of Commerce abroad and in the G20, can be used to mainstream industrial decarbonisation in international policy debates.

- **Civil society organisations need to build pressure on policymakers and industry to deliver an ambitious framework for industry transition**: The domestic general election in 2021 is a critical opportunity to increase the visibility of industrial decarbonisation, notably through a well-informed public discourse on climate policy. SMEs will play a key role in industrial decarbonisation and their voice needs to be amplified by civil society partners to build support for more ambitious decarbonisation actions. Civil society organisations and research institutes should designate more capacity to tackle industrial decarbonisation – particularly tricky topics such as CCS. Civil society, trade unions and progressive businesses should push proactively for ambitious Just Transition conversations in the industrial sphere, including through the co-creation of plans for regional industrial hubs which will be highly affected by the transition.[21]

[21] E3G (2020) **How (not) to Phase out Coal**

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About E3G
E3G is an independent climate change think tank accelerating the transition to a climate safe world. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2018, E3G was ranked the fifth most globally influential environmental think tank for the third year running.

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