

# **From Market-Maker to Market-Shaper: The Gradual Evolution of European Industrial Policy in the Energy Sector**

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**September 2025**

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## **About this paper**

This paper was prepared based on the Master's thesis of Felix Walther under the supervision of Prof. Dr. Matthias Thiemann, Professor of European Public Policy at Sciences Po Paris. It employs data from multiple documentary sources derived through qualitative and quantitative analysis and interviews with senior officials of the EU Commission. It demonstrates a gradual shift from a market-liberal towards a more interventionist strategy in EU industrial policy-making.

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# **From Market-Maker to Market-Shaper: The Gradual Evolution of European Industrial Policy in the Energy Sector**

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## **Abstract**

Once hailed as a beacon of market liberalism, the European Union has altered its approach to industrial policy amidst a changing global landscape. This thesis explores how the European Commission's attempt to steer markets towards its strategic objectives, driven by economic and geopolitical considerations under the schemes of the Green Deal and the Open Strategic Autonomy, is enacted in practice.

Using the decline of the European solar industry and the Net-Zero Industry Act (NZIA) as comparative case studies, the research investigates how the Commission has implemented this strategic shift in the areas of trade, state aid and industrial policy in energy-related sectors between the mid-2010s and 2025. Policy change is systematically described and analysed using Mahoney and Thelen's framework of gradual institutional change, demonstrating how the Commission has navigated treaty constraints and institutional limitations to pursue its strategic objectives. Situational discretion, shifts in internal dynamics and creative policymaking have aided a transition from ex-post to ex-ante instruments and from horizontal to vertical measures towards more technical, less politicised policy implementation.

This research highlights the emerging challenges to the EU's geopolitical-industrial strategy, including questions of legitimacy, difficulties in steering markets in a multilateral context, and normative clashes. Ultimately, this work contributes to the understanding of how strategic policy change is enacted within a rigid, multi-actor setting.

# 1. Introduction

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*We need a systematic approach. And we need it before it is too late. We can't afford to see what happened to solar panels, happening again on Electric vehicles, wind [turbines] or essential chips. (Vestager 2024)*

*We have not forgotten how China's unfair trade practices affected our solar industry. (von der Leyen 2023a)*

For many years, the European Union has been closely associated with the principles of market liberalism and free trade (Wagner 2017). Yet, amid a series of crises, its approach to industrial and trade policy appears to have shifted. Several authors have noted a comeback of the state as a market-shaping actor, from a rise in 'market activism' (McNamara 2024) and 'selective fortification' of Europe (Lavery 2024), to a 'geo-dirigiste turn' (Seidl and Schmitz 2024). Concerns regarding economic coercion, vulnerabilities in the supply chain, foreign acquisitions of valuable companies, declining faith in multilateral institutions and fears of falling behind in future technological competitiveness are seen as drivers of a broader change described by Matthijs and Meunier (2023, 175) as follows: 'Kantian idealism was out; Hobbesian realism was back in'.

Industries connected to clean energy production and so-called net-zero technology have been at the forefront of these changes, with several industrial policy programmes, state aid exemptions, and trade instruments being employed specifically for technologies such as wind turbines and solar panels. One case that has been referred to frequently in this context is that of the European solar industry, which, once a leader, has now become virtually insignificant (Philipps and Warmuth 2024). Amid concerns that other clean energy industries could meet a similar fate, the Net-Zero Industry Act (NZIA) has emerged as a new type of industrial policy aimed at supporting these sectors. It is one of a number of policy changes proposed by the European Commission under its 'Green Deal'.

However, these new policies do not solely follow economic logic. They are also connected to a geopolitical shift encapsulated by the term 'Open Strategic Autonomy' (OSA), an approach that attempts to balance the tradition of free trade with safeguarding autonomy by achieving independence from external control over strategic resources, including technologies. This approach seeks to integrate industrial policy with security concerns and sovereignty (Mariotti 2025). These policy measures and strategic communications also reflect the European Commission's new self-perception which, historically weak in security and industrial policy, has increasingly established itself as a major geopolitical player and agenda-setter in this area (Håkansson 2024; Koenig 2019).

Existing studies have mostly focused on identifying *why* this shift has occurred. In this thesis, I take the existence of this change as a premise and postulate that the European Commission (1) increasingly tries to steer markets in the directions of its strategic objectives and (2) does so not solely for economic reasons, but to build resilience under its Open Strategic Autonomy scheme. By doing so, the thesis strives to

understand *how* this change is enacted in practice in different policy areas focused around the energy sector. To this end, the thesis employs the crisis of the European solar industry in the mid-2010s and the introduction of the Net-Zero Industry Act as case studies, with the emergence of the latter being reconstructed using process tracing. The period between the two cases also constitutes the period under consideration, during which policy changes are systematically described. As the Commission has limited competence in industrial policy, these changes will also be traced and described in adjunct areas such as trade and competition policy<sup>1</sup>. This approach will also help identify how the Commission ensures its objectives are met through the legislative process, as well as any potential pitfalls arising from this.

This thesis identifies significant shifts in the Commission's approach to guiding industry towards economic and geopolitical objectives between the two cases. These include a shift from ex-post to ex-ante instruments, a transition from horizontal to vertical measures, and the implementation of policies that are more technical and less politicised.

By applying Mahoney and Thelen's (2010) theoretical framework of gradual institutional change, the analysis explains how these strategic shifts have manifested across different policy sectors despite constraints imposed by EU treaties and institutional competence balancing. While the theoretical framework was suitable for describing policy developments, it was found that the dynamics of change were more complex than initially hypothesised. Multiple modes of change often operated simultaneously and sequentially, frequently based on situational, contingent discretion, thus demonstrating the limitations of using a fairly static framework to describe change over time.

The thesis highlights emerging challenges for the implementation of the EU's geopolitical-industrial strategy, including questions of legal legitimacy, the tension between vertical industrial policy approaches and recommendations from economic literature, and the Commission's creative strategies to pursue its objectives within a complex multilateral environment.

The thesis now proceeds as follows: Section 2.1 will provide a brief overview of the pertinent literature describing the change this thesis presupposes, before identifying the research gap and delimiting the scope. Section 2.2 will explore the different policy sectors available to enact this change and their legal foundations, before Section 2.3 defines and theorises the framework of gradual change that will be used to analyse the policy developments. Next, Section 3 will provide an in-depth review of the rise and fall of the European solar industry. This unconventional approach has two distinct functions: First, it serves as a case study into the EU's difficulty in finding a comprehensive response to challenges in its industrial and trade policy. Second, it marks a starting point for my review of advances in wider EU industrial policy.

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<sup>1</sup> The field of competition policy in the EU encompasses many additional areas such as merger control or antitrust enforcement, however, due to the focus on industrial policy, only the state aid regime will be considered in this thesis.

With the temporal framework and historical context established, Section 4 will introduce the methodology, synthesising the insights gained from the previous sections. Section 5 will provide an extensive temporal analysis of policy changes in trade, competition and industrial policy since the solar case. Section 5.4 uses process tracing to reconstruct the development of one of the most recent and arguably most novel changes to EU industrial policy: the Net-Zero Industry Act. This case study again serves two purposes: First, it provides a comparative case to the aforementioned solar crisis, as its initial objective was to prevent a similar outcome for other industries. Second, it sheds light on the pitfalls that still exist in the formulation of industrial policy at a European level. Lastly, the discussion section will be divided into three parts. Section 6.1 will compare the developments between the two case studies. Section 6.2 will discuss the changes in trade, competition and industrial policy in detail, through the lens of the theory of gradual change, as well as changes in the dynamic within the Commission. Section 6.3 will summarise potential future challenges for EU industrial policymaking. Section 7 will outline the limitations of this research, before I attempt to draw a conclusion in Section 8.

## 2. Theoretical Framework

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### Open Strategic Autonomy & Industrial Policy

#### Literature Review: A new approach to economic activism

Several authors have noted and discussed the existence of a shift towards a strategic approach on the continuum between openness and protectionism, as well as a change in both industrial policy and trade measures. In this literature, the shift is often divided into inward- and outward-facing measures.

*Inward-facing* changes comprise a shift in approach to governing industries and markets within the EU. Seidl and Schmitz (2024) identify a 'geo-dirigiste' turn in the EU's approach to directing economic activity, moving from a traditional focus on market-creation towards one of market-directing. While advances in European integration were previously driven by the formation of markets through changes in framework conditions, recent years have seen a shift towards using supranational policy instruments to steer markets towards strategic objectives. This is driven by an attempt to strengthen the European economy in critical sectors, as changes in the technological and geopolitical context have resurrected decade-old fears of 'falling behind'.

Similarly, McNamara (2024) describes a profound shift from market liberalisation and horizontal measures that benefit all industries and sectors, to a system that shapes markets using vertical tools, picking winners, and prioritising certain industries to serve its goals. While these measures are inward-facing and support domestic industry, the reasons are mostly external, such as the EU's desire to project itself as a sovereign geopolitical actor that can compete in global markets with independent technological

and digital innovation, making it less vulnerable to targeted economic pressure and fragilities in global supply chains.

For Di Carlo and Schmitz (2023), the EU is increasingly functioning as a 'development network state', actively adjusting, influencing and safeguarding the single market to achieve public policy objectives. Apart from changes in the international system, this can be explained by changes in the behaviour and interests of the European Commission and an alignment of visions for economic activism among the member states, particularly between Germany and France. These different approaches are categorised by Amable (2017) as French neoliberalism, which combines neoliberal market principles with ideas of de Gaulle-type dirigisme and uses market imperfections as tools for directing rather than solely attempting to fix them, and German ordoliberalism, which is more concerned with creating the conditions for perfect competition. The development described by Di Carlo and Schmitz (2023) for the EU appears to represent a gradual shift away from the German and towards the French approach.

Another body of research is centred on the concept of 'Green Industrial Policy'. As Allan et al. (2021) explain, policies and provisions designed to stimulate and facilitate the development of clean technologies are driven by the broader attempt to transform the economy into a green economy. This is additionally motivated by the desire to compete in future markets, to re-shore the production of strategic technology due to fears of geopolitical instability and to serve domestic economic priorities. Two justifications are at play here. One follows the neoliberal, functionalist idea of market failures, whereby investors fail to invest independently due to high and diffuse risks. However, if investments were made, the returns to society would exceed the private returns. The second sees these policies less as a tool to fix market failures and more as a strategic response through which states try to utilise markets to serve their own purposes.

This also echoes the arguments of Juhász and Lane (2015), who highlight the underdeveloped focus on the political forces that influence the implementation of industrial policies, even when they originate in purely economic thinking.

In practice, the EU's ability to conduct such industrial policy is limited due to its mandate and financial capacities; thus, the EU has strongly relied on its state aid regime for these market-directing industrial policies (Schmitz, Seidl, and Wuttke 2025). While the financial means in these cases stem from the member states, the European Commission can use them to govern by granting exemptions to a restrictive regime rather than designing and implementing comprehensive industrial programmes itself.

*Outward-facing* changes are about shaping the interaction between EU industries and markets with external actors. Lavery (2024) identifies 'selective fortification' as a strategy employed by the EU to shield certain strategic industries from novel forms of international competition. In doing so, the EU is not fully returning to the post-war vision of isolation from the liberal international order, but rather seeking to strengthen its position through new, selective trade instruments. This is portrayed as a reaction to Chinese state capitalism, which has enabled the country to move upwards in the value chain; the breakdown of the multilateral trade framework through an ineffective WTO;

and the threat of economic coercion. This can partly be seen as a response to what Farrell and Newman (2019) refer to as the 'weaponisation' of markets and economic institutions. These institutions were formerly seen as harbingers of efficiency gains and cost reductions, but have now become tools of coercion that long-term allies such as the US are less afraid to use against the EU.

Similarly, Schmitz and Seidl (2023) describe the geopolitical nature of European trade policy, in which the concept of Open Strategic Autonomy has created openings for actors that deviate from the long-held neoliberal paradigm of EU trade policy. Introduced by the Commission in 2021 as its new strategic guideline, this concept is central to explaining this change in economic activism at a European level. It encompasses the idea of balancing openness in global trade with sufficient autonomy to protect interests and values. The term appears to be deliberately ambiguous, as this allows for the formation of a broad coalition in its support (Reinhold 2024).

## **Conceptualising the changes and identifying the research gap**

Following the review of this literature, the following general changes can be summarised as follows:

Internally, the EU is transitioning from a horizontal industrial policy approach to more vertical, targeted interventions. This includes replacing the traditional neoliberal approach of creating favourable market conditions with dirigiste policies that intervene and steer markets in strategic directions. Due to institutional limitations on implementing comprehensive industrial programmes directly, the European Commission has leveraged the state aid regime as a key instrument for achieving these objectives, while working to strengthen its competences in using other tools.

Similarly, the EU's approach to international economic relations has evolved from pure openness to a stance aimed at protecting strategic industries from international competition deemed unfair.

These shifts have been formalised through strategic frameworks, such as the Commission's Strategy on China and the Open Strategic Autonomy guidelines, and have led to a change in internal dynamics, with key actors forming a consensus on economic activism, and member states willing to grant the Commission additional powers to pursue these objectives. Often driven by crises, the following external drivers have been identified:

- Supply chain vulnerabilities exposed during the Covid-19 pandemic and international conflicts (Di Carlo and Schmitz 2023; McNamara 2024; Seidl and Schmitz 2024; Lavery 2024).
- Concerns about economic coercion, exemplified by Russia's use of gas as leverage (McNamara 2024; Seidl and Schmitz 2024).
- Fears regarding technological competitiveness and the desire to strengthen future technologies (B. Allan, Lewis, and Oatley 2021; Di Carlo and Schmitz 2023; Lavery 2024; McNamara 2024; Seidl and Schmitz 2024).

- Strategic acquisitions of EU companies by foreign entities (Seidl and Schmitz 2024; Lavery 2024; Di Carlo and Schmitz 2023).
- Perceived unfair practices by other countries, particularly China's subsidies and dumping (Di Carlo and Schmitz 2023; Lavery 2024).
- Declining faith in multilateral trade governance institutions such as the WTO (Lavery 2024).

## Policy areas

As demonstrated above, there is an increasingly large body of research on the growing importance of industrial policy and trade protectionism at a European level. Interestingly, the term 'industrial policy' is often used here to refer to measures that traditionally fall within different European policy domains, primarily those of state aid and competition. Other times, issues such as trade policy are treated as separate from industrial policy.

This is perfectly legitimate, as these measures can be viewed as either independent or as redirected towards other objectives: if state aid is the Commission's primary tool for market steering, the original functional division in industrial and competition policy may become less significant. However, I would argue that it is beneficial to view trade, competition policy and industrial policy together as complements to achieve a certain goal, but still as distinct policy sectors. This is important because these areas are predominantly worked on in different Directorates-General (DGs) of the Commission, which have different levels of autonomy and different administrative and ideological cultures (Cini 1997).

This approach — and the limitation in time and scope of this thesis — thus entails a focus on a macro level where not every development within each sector can be traced in high detail. Consequently, the primary focus will be on industrial policy, given that it does not represent a traditional area of competence for the Commission. However, including the other two closely linked areas enables me to draw information from comparisons between the different sectors.

Under the premise of the aforementioned changes — namely, that (1) the European Commission is increasingly trying to steer markets, and (2) attempting to build economic resilience under the paradigm of strategic autonomy — it can be postulated that these changes will be reflected in industrial policy, state aid regimes, and trade policy. These fields, and more so, the changes that the Commission is pursuing with them, can best be summarised under the term 'economic activism', which I will hereinafter use to refer to this triad.

While such a comprehensive approach has to my knowledge not yet been taken, it is rooted in industrial policy literature. Aigner and Rodrik (2020), for example, describe the need for a 'systemic' industrial policy that aligns with and maximises synergies with

other policy areas, such as competition and trade policy<sup>2</sup>. Dullien and Hackenbroich (2022) argue that European industrial policy constitutes a necessary condition for achieving OSA, but only if it is combined with 'selective protectionism'.

### **Temporal and sectoral scope**

The change in industrial and trade policy in European countries, and, to a lesser extend, in the EU, could be analysed over different periods of time. As other authors have pointed out, several shifts occurred: between the 1960s and 1980s, a number of European countries, led by France and the UK, implemented highly vertical industrial policies to establish national champions and narrow the technological development gap with the US. From the 1980s onwards, industrial policy became more horizontal, focusing more on framework conditions and competition than on supporting specific companies or sectors. This changed with the financial crisis of 2008/2009, which marked the beginning of a more interventionist industrial policy, albeit mostly at a national rather than EU-wide level (Ambroziak 2017; Owen 2012). As Seidl and Schmitz (2024) point out, many attempts to support industries, and ultimately also European integration, have been driven by a fear of 'falling behind' competitors in the US, Japan or, more recently, China.

A particularly dramatic wake-up call for European decision-makers, specifically in the green industrial and energy sectors, appears to be the fate of the European solar industry. The demise of this industry and the resulting dependency on Chinese imports has been referenced repeatedly by European Commission officials in the context of the Net-Zero Industry Act (Virginijus Sinkevičius in European Parliament 2023b; Vestager 2024; von der Leyen 2023b), by scholars and associations when arguing for greater protection in trade and industrial policy (Lagercrantz and Cytera 2024; Mettler 2023; Sambell et al. 2024; Transport & Environment 2024), or as an argument against new trade defence measures (SolarPower Europe 2023).

This has sparked fears that other green industries, such as wind turbines and electrolyzers, would suffer a similar fate and that Europe would, once again, fall behind in key technologies. Ultimately, this led to several measures, of which the Net-Zero Industry Act (NZIA) is one of the most notable (Lagercrantz and Cytera 2024; Mettler 2023; Sambell et al. 2024).

Therefore, the discussion about the European solar industries in the first half of the 2010s, which ultimately led to fairly toothless trade measures taken by the European Union vis-à-vis China, will mark the starting point of this thesis's period under consideration. The Net-Zero Industry Act, as a response to a similar challenge in different industries almost ten years later, marks the endpoint and second case I will focus on. Apart from the comparison of different forms of economic activism (industrial

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<sup>2</sup> However, it should be noted that, although Aigner and Rodrik advocate better alignment of these policy areas, they emphasise that modern industrial policy should not be targeted, vertical or ex ante, but rather adopt an open and cooperative approach.

policy, trade policy and state aid provision), this enables a second comparison of the EU's reaction before and after its 'geo-dirigiste' turn.

Additionally, as the above case selection shows, the focus will be on energy-related industries, particularly so-called net-zero industries such as renewables and hydrogen. This sector is of particular strategic importance because it represents a potential future high-growth sector, for which international competitiveness is paramount, and because it is fundamental to ensuring energy security and resilience — thus combining two of the EU's primary objectives in its new approach to economic activism.

## **Policy tools & legal foundations**

To understand the policy tools used by the EU in its geo-dirigiste turn towards economic activism, it is important to consider the various legal frameworks and the leeway they give the Commission in different policy areas. I will therefore briefly review the legal basis for the three sectors below.

### **State Aid**

The State aid control of the European Commission is based on Articles 107-109 of the Treaty on the Functioning of the European Union (TFEU).

Article 107(1) establishes a general prohibition on state aid that distorts competition in order to safeguard the single market. This is based on the realisation that the absence of such rules would result in companies in other Member States being exploited, potentially leading to a destructive cycle of retaliatory subsidies (Biondi and Tarrant 2017).

However, the Treaty does provide for situations in which the market does not deliver the desired outcome, thus, it foresees a range of exemptions for aid. Some of these exemptions are applicable in line with EU objectives (Art. 107(2)), such as crisis response aid or social aid to individual consumers. Other exemptions are discretionary, such as supporting regional cohesion, environmental protection, and the promotion of important projects of common European interest. Through the Directorate-General for Competition (DG COMP), the Commission has exclusive powers to enforce these rules and requires Member States to notify all aid measures for prior approval, except for certain pre-defined categories ('block exemptions') for which notification is not necessary (Rusche 2019).

The Commission's discretion is most evident in its ability to interpret the exemptions under Article 107(3)(b) for 'important projects of common European interest' (IPCEIs). Recent frameworks, such as the Temporary Crisis and Transition Framework (TCTF), demonstrate the flexibility with which the Commission can relax state aid rules in order to address geopolitical shocks such as the pandemic and energy crises. For instance, the Commission authorised Member States to match subsidies offered by third countries (e.g. the US Inflation Reduction Act) in order to prevent the relocation of

industry, thereby signalling a strategic shift towards ensuring the competitiveness of the EU (Common Market Law Review 2024, 2024).

However, the Commission's discretion to interpret the rules is limited by judicial review. The Court of Justice of the EU (CJEU) has confirmed that state aid assessments must strike a balance between economic efficiency and Treaty objectives, and has ruled against the Commission for both blocking and allowing state aid. The Court has also curtailed expansive interpretations of state aid rules. For instance, in cases concerning selectivity, the Court has clarified that the Commission must demonstrate specific deviations from national reference frameworks, rather than making broad assumptions about market behaviour (Cuyvers et al. 2023).

## Trade policy

The legal basis for the European Union's trade policy is established in Article 207 TFEU, which designates the so-called Common Commercial Policy (CCP) as an exclusive competence of the EU. The Commission has the exclusive right to initiate trade policy proposals and acts as the EU's sole negotiator in international trade talks, where it represents the collective interests of all member states rather than individual national priorities.

Despite this prominent role, the CCP process relies heavily on the other EU institutions. The Commission must receive authorisation from the Council to begin the negotiations. Throughout the negotiations, the Commission regularly needs to consult with the Council's Trade Policy Committee, established under Article 207(3) TFEU, which provides guidance and ensures that Member States' concerns are taken into account. This ongoing dialogue allows national governments to influence the direction of trade, where their positions of the direction of trade policy — for or against free trade — has long seen as relatively fixed (van Loon 2018).

Since the Lisbon treaty enhanced the European Parliament's power related to trade, it too needs to approve or reject final trade agreements under 218 TFEU. While this de facto veto power has given the Parliament leverage in negotiations to incorporate stronger environmental and social standards into the agreements, it is generally considered to be less influential than the Council and Commission in trade matters (ibid.).

Member States, however, retain a number of veto powers. While most Council decisions on trade only require a qualified majority, unanimity is still required for agreements in sensitive areas with shared competences, such as the commercial aspects of intellectual property, social services, and health (Erlbacher and Rusche 2019).

Beyond this veto power in the Council, Member States have another locus of power in most comprehensive trade agreements. Mixed agreements, which cover policy areas shared between the EU and member states (e.g. transport or investment protection), require ratification by all national parliaments (Erlbacher and Rusche 2019). This process introduces a de facto veto mechanism, since a single Member State's refusal to ratify can block the entire agreement, as was seen with the temporary blocking of

the EU-Canada Comprehensive Economic and Trade Agreement (CETA) by the regional Walloon parliament in Belgium (Von der Burchard and Oliver 2016). Following the ECJ's clarification of competences in an opinion on an EU-Singapore agreement, such mixed agreements are now typically divided into two parts to expedite the process (Titievskaja 2019).

Based on principal-agent theories, the Commission is generally considered the primary agenda setter, partly because, as the primary negotiator, it has an advantage in terms of information asymmetries (Heinelt and Münch 2018). At the same time, as trade negotiations are often heavily politicised and moralised, the Commission's powers, particularly in trade restricting measures, are very limited (Ergen 2021; Nibe, and Roederer-Rynning 2024).

## Industrial Policy

The legal basis for the European Union's industrial policy is substantially weaker than that for competition and trade policy. Article 6(b) and 173 TFEU only grant the EU supportive competence to coordinate member states' actions to foster industrial competitiveness. Article 173(3) specifically excludes the creation of legislation for the harmonisation of member states' laws and regulations, as well as any action that could jeopardise competition in the single market. The provisions in Article 173 emphasise the need for structural adjustments and the creation of "favourable environment[s]".

However, despite these limitations, the single market has historically served as a platform for adopting measures that influence industrial policy, both directly and indirectly (Dermine and Patrin 2024). Article 114 TFEU provides the legal basis for this, as it allows harmonisation as a measure to improve the functioning of the internal market. In the wake of external geopolitical and trade challenges, the Commission has used this provision to advance its concept of "open strategic autonomy" and increase the resilience of the internal market by reducing trade dependencies (ibid.). Several legislative acts under the European Green Deal have therefore been legitimised under Article 114 TFEU, including the Critical Raw Materials Act, the Chips Act and the Net-Zero Industry Act, as they are deemed to be part of sensitive ecosystems requiring the development of particular internal capacities. The Net-Zero Industry Act, for example, explicitly uses Article 114 as its legal basis to standardise green technology production, arguing that disparate national rules hinder cross-border investment (Explanatory Memorandum, *Proposal 2023/161 for a Regulation of the European Parliament and of the Council on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Products Manufacturing Ecosystem (Net Zero Industry Act)* 2023).

A longer discussion about the use of Article 114 as the legal basis for the Net-Zero Industry Act specifically can be found in Section 5.4.

This strategic use of Article 114 enables the Commission to bypass some of the constraints of Article 173, effectively centralising industrial policy under the guise of market harmonisation. The article also only requires majority voting, and thus misses the "safety pin" of unanimity in the Council that is required for other far-reaching policy acts (Barnard 2010). However, it also has its political and legal limits, as shown by the

Tobacco Advertising case, where the European Court of Justice (ECJ) ruled that “preventative” harmonisation is only covered under Article 114 if the emergence of such market fragmentation is likely (Weatherill 2011). Furthermore, scholars have legitimately questioned whether the EU could effectively undertake a task that has traditionally been the responsibility of member states and requires fiscal capacity and a certain degree of political unity, given that decisions regarding new manufacturing sites, the selection of industries and priorities invariably lead to political tensions between member states (Dermine and Patrin 2024; McNamara 2024).

In conclusion, industrial policy at the European level has a rather weak basis in the European Treaties. This, in addition to the EU's limited fiscal space, explains why the Commission uses neighbouring policy areas (such as state aid) for this purpose. However, the little codification that exists so far in this area may also have opened a window for the Commission to gradually extend its competences, as I will try to show in this thesis.

## Policy Change in the EU

### Definitions

Policy change has been studied using a variety of theoretical frameworks. According to Capano and Howlett (2009), in many cases the focus of different conceptualisations can be categorised as follows: (1) structure vs. agency to explain the outcomes, (2) endogenous vs. exogenous variables as the drivers of change, (3) revolution vs. evolution as patterns in change processes, and (4) output vs. process.

The choice of framework comes on top of other theoretical considerations, such as decisions on the level of abstraction, the time period, and the type of changes chosen to discern the actual policy dynamics (ibid.).

Following Capano's advice (2009), policy and policy change must first be defined. For this analysis, I employ a narrow definition of policy as a 'regulatory approach', and of policy change as the introduction of a new regulatory approach<sup>3</sup>. One important point to note here is that in this thesis, 'policy change' is used exclusively to describe changes in secondary law in the EU. This includes legislative acts such as regulations, directives, decisions, recommendations, and opinions; non-legislative acts, such as delegated and implementing acts; and administrative and procedural practices. It is not used to describe changes in primary law (i.e. the EU treaties), as such profound

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<sup>3</sup> A more comprehensive approach could place greater emphasis on the 'soft' aspects of regulation, such as the different ways in which rules, programmes, or even codified communication are enacted. Such changes to the fundamental 'logics of action' would very well be in line with the theory of gradual change as they will likely lead to different changes later, but tracking these aspects would require a level of micro-level detailing that the macro-focus of this thesis cannot provide

changes are considered almost impossible in the short term (Ondarza 2015; Triantafyllou 2023).

Furthermore, as I will apply a theory of 'institutional' change to policies, it is important to clarify the relationship between institutions and policies. Within the context of historical-institutionalist theories, Streeck and Thelen define institutions as formalized rules that may be enforced by calling upon a third party. (2005, 10). Policies and regulations can be viewed as a form of these institutions that are codified in law and enforceable by individuals or governments through the courts. However, the term will not be used interchangeably here, since institutions in this context also include elements of soft law, or 'ways of doing things', which are particularly important in areas with many soft law applications, such as the EU state aid regime.

## Theory of Change

In many ways, the period and field under review fit the notion of a critical juncture: a period during which normal constraints are lifted and change becomes possible (Capoccia and Kelemen 2007). This is evident through the multitude of crises and stronger calls for a coordinated 'European' response. Following the historical-institutionalist framework, we would expect these exogenous effects to puncture the relative continuity of institutional stability and lead to radical institutional change (Capoccia 2015). This is particularly true given that EU integration has repeatedly been seen to advance through crisis (Biermann et al. 2019; Genschel and Jachtenfuchs 2018).

Section 5 will provide an overview of the changes that have occurred during this period. While each crisis undoubtedly led to a multitude of policy changes, the extent of these changes can be questioned.

In trade policy, changes largely consist of additional instruments which, in most cases, have not yet been employed, and which have attempted to catch up with the international 'playing field' rather than change it (Meyers 2022).

In competition policy, state aid procedures have changed, but mostly through temporary frameworks and the fast-laning of measures that align with the Commission's priorities. However, the fundamental rules of what is permissible have not changed<sup>4</sup>.

In industrial policy, the changes are arguably more interesting, as there are fewer precedents for such measures at a European level due to the much weaker mandate. However, none of the advances could truly be classified as radical. Even the most decisive change — NextGenerationEU and the Recovery and Resilience Facility, which allowed joint EU borrowing on capital markets for the first time (and is outside the scope of this work as it concerns economic and monetary policy) — was presented

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<sup>4</sup> An official from DG Comp aptly described this with an 'à la carte' analogy: Member States can receive their 'food' faster if they choose from a pre-approved 'menu', but they do not lose the possibility of getting something different cooked just for them (Interview 3, 3:15).

as gradual rather than radical once the initial rhetoric of a paradigm shift had subsided (Bocquillon, Brooks, and Maltby 2024).

In part, this may be due to the challenges associated with amending treaties through both the formal and simplified revision procedures (Kotanidis 2022). While this would support the notion of stable equilibrium in historical institutionalism, I will argue that the type and manner of realised changes can only be explained by a combination of exogenous and endogenous variables. This follows the reasoning of Streeck and Thelen (2005) and Mahoney and Thelen (2010), who, in their theory of gradual change, suggest not looking at the dichotomy of stability versus change, but also considering the change that happens in periods of stability.

The theory identifies four primary types of incremental institutional change. *Displacement* occurs when existing rules replaced by new ones. This is the perhaps the most visible form of institutional change, with which old institutions are actively dismantled and replaced by new arrangements. This can happen through disruptive, revolutionary changes or gradually, with new rules being introduced that slowly replace old ones as they coexist and slowly erode alongside them. *Layering* involves the introduction of new rules besides or on top of existing ones, such as revision, amendments, or additions. This often takes place when the challengers of the current institutional regime lack the capacities to change the underlying rules. While the original institutions remain formally intact, their logic of functioning or stable continuity is substantially altered, as the defenders of the original regime cannot prevent the recurring small changes.

*Drift* occurs when rules remain formally unchanged but their impact changes due to changes in the external environment. This happens when institutions are not actively maintained or updated in response to changes in the external environment, often through deliberate inaction as challengers block adaptation to new circumstances. Finally, *Conversion* is probably the most subtle form of change, where existing rules formally remain the same, but are reinterpreted or reenacted to serve new purposes or goals. Unlike Drift, Conversion involves the active repurposing of an institution by exploiting ambiguities rather than simply neglecting them. This crafting of solutions to new problems with existing materials requires a degree of discretion in the interpretation of these rules and a weak (or deliberately unused) veto power by others (Mahoney and Thelen 2010).

Central to their explanatory framework are the interactions between two key variables: the political context and the characteristics of the targeted institution. The *political context* is conceptualised primarily in terms of the strength or weakness of veto power, i.e. whether actors have access to institutional or political means to block change. In the case of policy change initiated by the European Commission, this can be understood as the leeway it has to suggest changes against other actors such as the European Parliament, the Council, and the Member States. This leeway arises not only from its mandate under the treaties, but also from the different sensitivities of the topics in question. Typical 'political landmines', for example, are questions of competence vis-à-vis the Member States, common financing, and discussions of protectionism (Nibe, and Roederer-Rynning 2024).

*Institutional characteristics* focus on the degree of discretion in interpreting and enforcing rules and norms. If challengers of institutions have high discretion, they have the freedom to interpret the rules in different ways. In contrast, under low discretion, strict rules or strong oversight leave little room for reinterpretation. This typology makes certain types of changes more likely and also links them to a particular type of change agent (Mahoney and Thelen 2010). However, as my focus lies on the Commission, this connection to different actors is less relevant for this thesis.

### 3. Case Study: A wake-up call - The Rise and Fall of the European Solar Industry

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The purpose of this section is to reconstruct the political and economic dynamics that led to the emergence and subsequent collapse of the European solar industry. Apart from being a comparative case for the European Commission's recent economic activism efforts, it is also indicative of the discursive and strategic shift about openness and industrial policy that has taken place in the EU since then. The following reconstruction of the history of the solar industry will focus on Germany and Spain, which emerged as the countries with the largest shares of solar module production and the value chain in Europe. In fact, Germany had the highest production capacity in the world for a brief period in 2007 (Wirth 2025).

#### **The Rise: Early Policy Support and Market Emergence**

The European solar industry emerged against the backdrop of growing environmental awareness and strategic industrial policy considerations in the 1980s. Initial support for photovoltaic (PV) technology in Europe came through government programmes designed to stimulate research and market development. Germany played a pioneering role in this development, implementing several ambitious initiatives. As Jacobsson and Lauber explain, after modest beginnings in the United States in the 1970s, 'the Federal Republic of Germany enacted a so-called 1,000-roof programme in 1990, followed by a Japanese 70,000-roof programme in 1996 and a German 100,000-roof programme in 1999' (2006, 260). These programmes aimed to create initial market spaces for solar technology, driven by a mix of environmental and industrial policy considerations, and supported by substantial public R&D spending (Lauber and Jacobsson 2016). While this increase in political support partly came from strong public pressure demanding alternative power sources after the Chernobyl accident reduced the popularity of nuclear power (Sandtner, Geipel, and Lawitzka 1997), it also had clear industrial policy goals. For example, a contemporary draft bill to support the photovoltaic (PV) sector called for 'start-up funding' of one billion German marks to ensure long-term competitiveness, which was dubbed 'one of the most important semiconductor markets of the future' (Bundestag 1996).

This blend of environmental and economic reasoning is also evident in the creation of probably the most influential renewable energy policy in Europe: the German Renewable Energy Law (EEG) and its predecessor, the 1991 Feed-In Act. The first of its kind, it served as a model for dozens of other laws in different countries, and is considered both the driving force behind the country's energy transition and the catalyst for the surge in demand for solar panels in the early 2000s (Morris and Jungjohann 2016; Staiß and Räuber 2003). The Feed-In-Act was introduced by a very unlikely condition between a Bavarian conservative who wanted to support small hydropower-producers in his constituency, and the - at this time diametrically opposed - Green party, which, while co-drafting the law, removed its name from the legislation

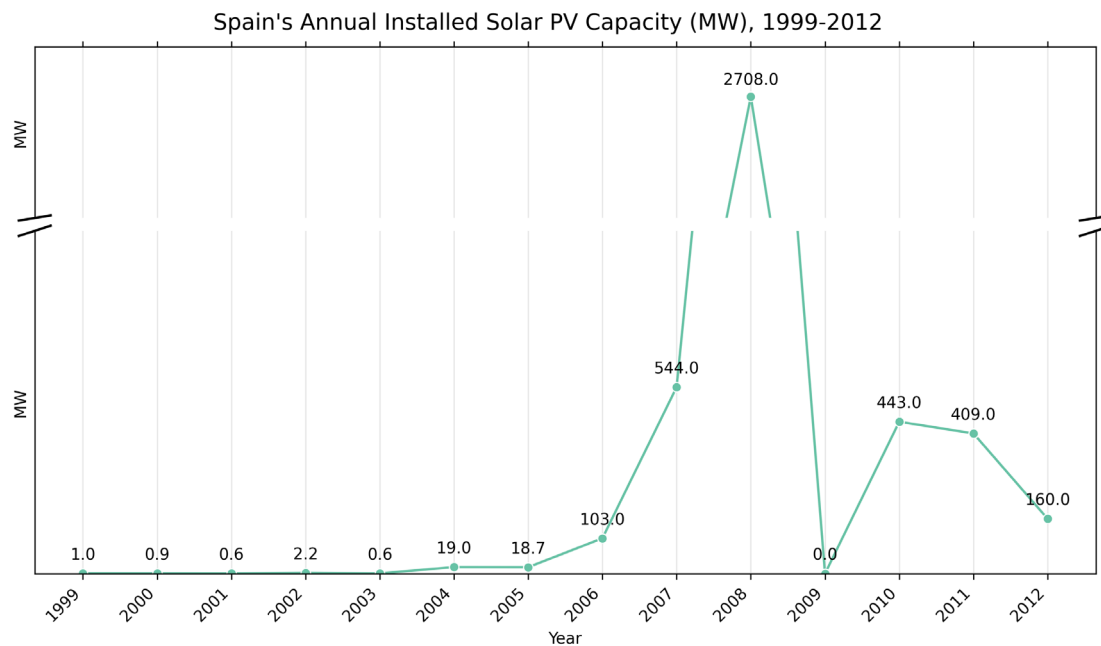
to make it more likely to pass, as it saw the law as a significant step in environmental policy (Morris and Jungjohann 2016; Ergen 2021).

This legislation established a comprehensive framework of support mechanisms, most notably the introduction of generous feed-in tariffs that guaranteed above-market prices for renewable electricity. As such, it created a protective space for renewable electricity and a growing coalition supporting a change in the selection environment (Jacobsson and Lauber 2006, 266). The impact of this and the following EEG was transformative, leading to rapid growth in renewable energy generation and the establishment of a robust manufacturing base, particularly in structurally weak German regions, creating employment and economic growth. The renewable energy sector gained support from a broad coalition of interests, including farmers, environmentalists, regional political leaders and investors (Ergen 2021; Staiß and Räuber 2003).

Spain became the second largest centre for solar manufacturing in Europe through a comprehensive policy framework that initially fostered its growth. Spain's solar industry evolved from legislation introduced in the late 1990s, which distinguished between conventional power plants and renewable energy sources, providing the latter with economic incentives. Spain implemented a feed-in tariff scheme, which proved highly effective for developing solar technology. A specifically designed economic policy to build up industrial capacity significantly boosted the sector in the early 2000s (Coronas et al. 2022; Del Rio and Mir-Artigues 2014).

During 2007–2008, as the economic crisis emerged, the photovoltaic sector suddenly became a favourable financial asset, with investors and banks shifting their investments from the collapsing real estate sector towards 'safe' solar installations. This, coupled with the fact that feed-in rates were not adapted to the substantial decrease in costs, led to the Spanish solar PV boom of 2008, as depicted in Figure 1. During this period, the installed capacity far exceeded national targets and accounted for 40% of the world's total installed capacity and more than 70% of European PV installations (Del Rio and Mir-Artigues 2014). This also led to a significant build-up of PV panel manufacturing capacity, both from foreign investors such as BP Solar and Sharp and from homegrown producers such as Siliken and Isofotón. The latter soon became one of the world's largest PV manufacturers (Prieto and Hall 2013; Woolthuis and de Jong 2017).

Spearheaded by Germany and Spain, Europe had become a global leader in solar energy by the mid-2000s in terms of both installed capacity and technological expertise (Ergen 2021).



*Spain's Annual Installed Solar PV Capacity in MW, 1999-2012, Data: Del Rio & Mir-Artigues (2014)*

## The Bust: Trade Disputes and Weak Responses

The further developments in Spain can be seen as a harbinger of subsequent trends throughout Europe. First, sudden over-investment and over-capacity in combination with generous feed-in tariffs led to cost overruns incompatible with Spain's post-crisis fiscal consolidation efforts. This resulted in the Spanish government dramatically cutting feed-in tariffs (and in part even retrospectively), reducing the subsidisation period and, in 2012, imposing a moratorium on new PV projects (Del Rio and Mir-Artigues 2014).

In Germany, the 2012 amendment to the EEG also reduced tariffs and severely limited the number of installations (Remmers 2023). Additionally, the entry of Chinese manufacturers into the global solar market has fundamentally altered competitive dynamics. Chinese firms, benefiting from economies of scale, lower labour costs, and strong government support, were able to offer solar panels at prices around 20% lower than those of their European counterparts (Plasschaert 2016). This price advantage put immense pressure on European manufacturers.

This situation was aggravated by the gold-rush atmosphere of the preceding years, which led to the emergence of many companies with weak economic backing (ibid.). This resulted in what is known as the solar crisis: almost monthly announcements of insolvencies among PV manufacturers in the Western world, particularly in Germany and Spain. Among those affected were leading companies such as Q-Cells, Solarworld

and Isofotón<sup>5</sup> (Ergen 2021). This not only endangered the industry itself, but also the industrial policy promises made when the subvention regimes were introduced, increasing calls for protectionist measures (Kohoutek 2013).

In Germany, however, calls for protective tariffs by hastily formed interest groups such as EU ProSun were met with strong and widespread resistance. The German government was concerned about potential retaliation from China if robust measures were taken to reduce the influx of Chinese PV modules. Given its export-oriented economy and significant business interests in China, Germany was particularly sensitive to the risk of wider trade conflict. Furthermore, much of the upstream supply chain for Chinese PV modules, including wafers and manufacturing equipment, was still based in Germany at the time, and would also have been impacted by such measures (Kohoutek 2013). Apart from fears of a trade war, there was a strong discourse questioning the moral justification for supporting the industry. Critics, including the German Ministry of Economics, argued that European manufacturers had become too dependent on subsidies and had not innovated enough (BMW 2012; Ergen 2021). Consequently, the discourse shifted from technical details about dumping to broader questions about moral obligations, economic risks, and strategic priorities.

At the EU level, which is responsible for the bloc's common trade policy, the response to Chinese competition resulted in a wider trade dispute. In September 2012, the European Commission launched the largest anti-dumping investigation to date in terms of value (covering imports worth 21 billion), focusing on Chinese solar panel imports (*Notice of Initiation of an Anti-Dumping Proceeding Concerning Imports of Crystalline Silicon Photovoltaic Modules and Key Components (i.e. Cells and Wafers) Originating in the People's Republic of China* 2012). This was followed by an anti-subsidy investigation in November 2012 (*Notice of Initiation of an Anti-Subsidy Proceeding Concerning Imports of Crystalline Silicon Photovoltaic Modules and Key Components (i.e. Cells and Wafers) Originating in the People's Republic of China* 2012).

The process revealed deep divisions within the European solar industry and between EU member states. Within the industry, the two opposing coalitions mostly followed the expected lines: EU ProSun, led by the German manufacturer SolarWorld, lobbied for anti-dumping measures, while the Alliance for Affordable Solar Energy (AFASE), representing importers and installers, opposed them (Ergen, 2021). In June 2013, the Commission concluded its investigation and found evidence of significant dumping. Despite the opposition of several member states, it imposed provisional duties of 11.8%, threatening to increase them to 67.9% if no agreement was reached by 6 August 2013 (*Regulation (EU) 513/2013 Imposing a Provisional Anti-Dumping Duty on Imports of Crystalline Silicon Photovoltaic Modules and Key Components (i.e. Cells and Wafers) Originating in or Consigned from the People's Republic of China* 2013). This move was said to be intended to provide leverage (and buy the industry time) for negotiations on voluntary price commitments (Kohoutek 2013).

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<sup>5</sup> The already weakened US manufacturers met a similar fate, leading to similar dynamics in terms of trade protectionism, as described by Ergen (2021). I will however keep the focus on the European industry.

The outcome of these negotiations was a settlement on 2 August 2013 that permitted Chinese companies to export up to seven gigawatts of solar products per year to the EU without paying duties, provided the price was no less than 56 cents per watt (European Commission 2013). With this minimum price, around 70% of Chinese solar exporters avoided the 47% import tariff applicable above the thresholds. Such voluntary self-commitments are permitted under WTO regulations and can benefit both the exporter, who receives the full price increase compared to administrative tariffs, and the protected industry, which can rely on a guaranteed price for a set period.

In this case, however, the settlement's benefits were widely seen as heavily favouring Beijing, which, prior to the introduction of provisional tariffs, had itself suggested a voluntary minimum price commitment. Furthermore, the minimum price was less than half of what the industry had requested and largely aligned with the actual prices of Chinese imports (Kohoutek 2013; Chaffin 2013a). The deal may even have helped the Chinese government achieve its industrial policy goals, as the annual cap on shipments enabled it to select winners in the sector by allocating quotas to favoured producers. Surprised by the number of small companies requesting subsidies, Beijing was able to consolidate players in the solar industry, ultimately helping them to solidify their position in the international market (Plasschaert 2016).

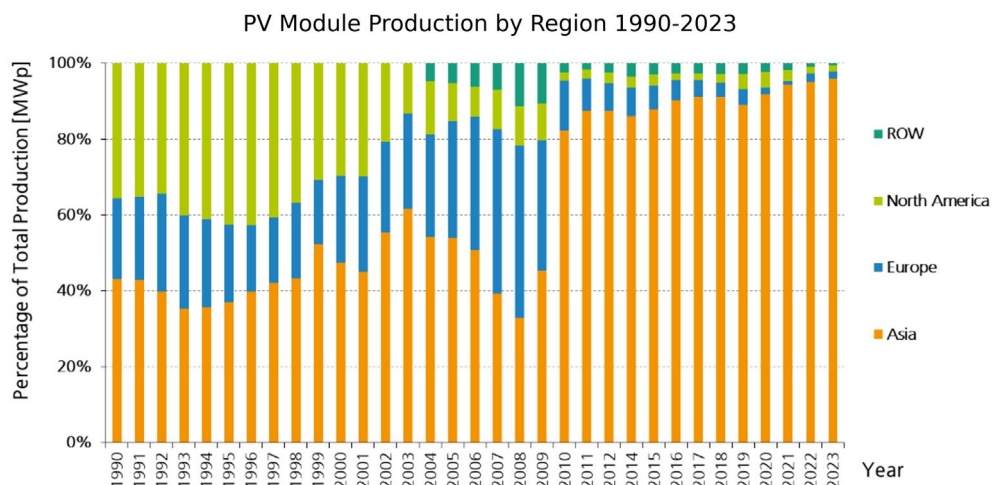
A likely explanation for this outcome — which EU ProSun's president described as capitulation rather than a solution (Chaffin 2013b)— was that a majority of member states turned against EU Trade Commissioner Karel De Gucht, who had initially pushed for a more robust solution (Moens and Gijs 2023). Apart from the aforementioned moral arguments used against the industry, China successfully employed a divide-and-rule strategy by targeting sensitive sectors in specific member states.

On the one hand, there were clear 'sticks': the Chinese Ministry of Commerce announced its own investigation into European polysilicon, an important ingredient in solar panels, in which German company Wacker Chemie was the world leader in production (Hook 2012). The Chinese Ministry of Commerce also threatened to target luxury cars in a similar way. These actions led both the German Economic Minister and Chancellor Angela Merkel to seek bilateral agreements with China and avoid any trade disputes with the country (Pepermans 2017). China also specifically targeted countries with little solar industry and thus few stakes of their own, launching investigations into French wine and agricultural goods (Moens and Gijs 2023).

On the other hand, it used 'carrots' to pit individual countries against the Commission by significantly increasing foreign direct investment and launching specific investment partnerships with European member states, which started competing with each other for the lucrative deals (Pepermans 2017). These sticks and carrots resulted in 18 out of 27 member states advising De Gucht against the tariffs (Moens and Gijs 2023). In this context, the Commission viewed a weak deal as a better outcome than no deal at all (Kohoutek 2013).

For the European solar industry, however, these measures were too little, too late. Total employment in the sector fell from 179,000 jobs in 2008 to just 109,000 in 2014 (Pepermans 2017). In Spain alone, jobs in the solar manufacturing sector fell by over

75%, from 41,000 in 2008 to 10,000 in 2012 (Del Rio and Mir-Artigues 2014). In Germany, the number of jobs in PV panel production and installation fell from 133,000 in 2011 to 28,000 in 2018 (Wehrmann 2021). Apart from losing jobs, Europe also became reliant on China to fulfil its renewables deployment goals, as it now accounts for 86% of total PV module production and 95% of the upstream supply chain, as pictured in Figure 2 (Wehrmann 2021).



*PV Module Production by Region, 1990-2023 (Philipps & Warmuth, 2024)*

## 4. Methodology and Hypotheses

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Due to the central role ascribed to it in the pertinent literature about the general change in EU inwards and outwards-directed economic activism (Lavery 2024; McNamara 2024; Seidl and Schmitz 2024), this research will primarily focus on the Commission as an actor which (1) attempts to steer the repositioning and turn of EU policy and (2) does so to extend its remit beyond that which has been formally given to it. The Commission is thus viewed as a 'competence-maximising rational actor' (Pollack 1997).

Under this stipulation and the one that the change in industrial policy, while significant, is an evolution rather than a revolution and thus best described by a theory of gradual change, this thesis attempts to answer the following primary research question:

(1) Based on a comprehensive understanding of industrial policy, why did the geo-dirigiste turn materialise in the way that it did, and how can this change be described in different sectors?

Based on the theoretical framework set out in Section 2.3 and the considerations of the Commission's competences in 2.2, and under the proviso that the European Commission intends to perform a dirigiste turn within a broader view of industrial policy, the following hypotheses can be formulated:

*H1*: Since the Commission enjoys considerable autonomy in state aid policy with limited veto points, but only a limited level of discretion in the interpretation of legal rules, we would expect to see *Conversion* or *Displacement* as a means of changing the institutions.

*H2*: Since the Commission has limited discretion in trade policy in practice due to the strong role of Member States and faces strong veto rights from other institutions, we would expect to see *Layering* as a means of changing the institutions.

*H3*: Since the Commission has limited discretion in the field of industrial policy due to its weak legal mandate and faces strong veto rights from other institutions that would lose power if the Commission's mandate were extended, we would expect to see *Layering* as a means of changing the institutions.

|                                          |                           | Characteristics of the Targeted Institution            |                                                         |
|------------------------------------------|---------------------------|--------------------------------------------------------|---------------------------------------------------------|
|                                          |                           | Low Level of Discretion in Interpretation/ Enforcement | High Level of Discretion in Interpretation/ Enforcement |
| Characteristics of the Political Context | Strong Veto Possibilities | Layering<br>Trade P.<br>Industrial P.                  | Drift                                                   |
|                                          | Weak Veto Possibilities   | Displacement<br>State Aid P.                           | Conversion                                              |

*Hypothesised sources of institutional change in the policy sectors, based on Mahoney and Thelen (2010, p.19)*

The hypothesised classification of the sources of institutional change in the three policy sectors within Mahoney and Thelen's framework is depicted in Figure 3.

It is unlikely that this very coarse classification along two axes will be sufficiently accurate to account for the complex mesh of dynamics governing the European Institutions, but the hypotheses nevertheless provide an important guideline throughout the thesis. In addition, due to the scarce research in this relatively new field, the second research question in this thesis is exploratory and thus follows the advice of Seidl and Schmitz (Seidl and Schmitz 2024, 2168) to examine the implications of this new form of industrial policy 'on the ground':

(2) In the case of the Net-Zero Industry Act, how is the Commission implementing vertical industrial policy, ensuring its objectives in negotiations with member states and what potential pitfalls of this approach can be identified?

I substantiate my argument through a review of developments in comprehensive energy-related industrial policy legislation since the solar crisis and an in-depth case study of the Net-Zero Industry Act. To achieve this, I analyse documentary sources including legal texts and proceedings, official communications from both the EU and national ministries, speeches and contributions to discussions by senior officials, the quantitative analysis of stakeholder contributions to EU consultations and commentary from reputable print and online media sources. This plethora of data is supplemented by interviews with four senior officials from DG GROW and DG COMP, conducted to further explore issues and verify previously derived hypotheses. To trace the genealogy of the Net-Zero Industry Act in particular, the European Commission is not treated as a single actor, but is regarded at a more granular level to explore the dynamics within and between different directorates-general.

Next, I will review the most substantive policy developments in the broad approach to industrial policy, which comprises trade and state aid policies.

## 5. Policy Developments

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Following the conceptualisation in Section 2.1, any changes to the state aid regime, trade policy or industrial policy that impact the energy industry are considered. Due to the large number of legislative changes since the solar dispute peaked in 2013, two further distinctions can be made.

First, I will differentiate between energy generation equipment and infrastructure, and energy (such as electricity), with the focus of this thesis being on the former. Many industrial policies, such as the EU Energy Platform or AggregateEU (set up as part of RePowerEU to coordinate negotiations with external gas suppliers and facilitate joint natural gas procurement), the revised Renewable Energy Directive and EU Green Bonds (designed to encourage investment in renewables in the context of NextGenEU), focus on energy as an input. These policies primarily aim to make energy more affordable for households and businesses, or to advance energy transition goals. While such policies may be motivated by similar climate, geopolitical and economic reasons, they are unique in that they are indifferent to the location of the industry they support, enabling and expanding private and public investment. The aforementioned German EEG feed-in tariffs are a pertinent example of this: originally designed to support local manufacturers, they later played a crucial role in the influx of Chinese solar panels into the European market.

However, additional policies or regulations that restrict sourcing (e.g. local content requirements) or alter price competitiveness (e.g. tariffs) can amplify the impact on domestic manufacturing. Therefore, I will focus on these explicit steering policies rather than those that have ambiguous effects.

Second, a distinction can be made between targeted and open-ended industrial policies. While targeted policies will have clearly defined deployment or performance objectives, open-ended policies incentivise sectoral innovation or development. As this paper assumes that the Commission will play a more market-steering role, the focus will be on targeted (vertical) policies.

Following Allan and Nahm (2025), this differentiation is made by the specificity of the prescribed targets (i.e. by defining the specific parts or technologies that can be used). While this makes this a continuous rather than a binary variable, it seems more appropriate to operationalise the shift from a neoclassical industrial policy focused on correcting market failures to one with a stronger market-steering role (Weiss 2020). The US IRA, for example, contains many policies that can be classified as open-ended<sup>6</sup> because it does not set specific deployment or emission reduction targets for individual sectors or technologies. Instead, it primarily provides incentives to switch to

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<sup>6</sup> Whereas other elements of the IRA, such as the electric vehicle tax credits, which are dependent on local content requirements, are clearly targeted.

low-emission production processes. These incentives are mainly provided through tax credits for investment in and production with predominantly low-emission technologies, thus creating spaces for technological exploration (Grimm et al. 2023). In the context of EU policy, IPCEIs could be considered an open-ended policy that supports innovative projects largely independently of preconditions (Zavarská et al. 2023). In practice, however, they remain subject to conditions that prevent such open-ended outcomes (Schmitz, Seidl, and Wuttke 2025).

## State Aid

As state aid policy represents a rather particular case, a few underlying considerations should be noted before describing the latest developments.

Although state aid rules have been a vital part of European integration since the establishment of the EEC in 1957, evolving alongside the growth of the internal market, their primary objective has always been to prevent market interventions that could lead to 'beggar-thy-neighbour' effects, thereby rendering common markets unfeasible (Ganoulis and Martin 2001). Ultimately, adverse spillovers for competitor firms often counterbalance or even outweigh the positive effects on recipients in the medium term at a macroeconomic level. This calls for state aid to be provided at a European level rather than at a level of individual member states (Brandão-Marques and Toprak 2024), hence reaffirming the need for effective control of national aid provisions.

Beyond these concerns relating to market integration, state aid can often distort the allocation of resources. Evidence suggests that, particularly when used to support low-productivity industries, state aid can lead to slower productivity growth in recipient firms compared to non-subsidised enterprises. In the long term, the lack of productivity gains outweighs any short-term benefits to employment and investment. Despite governmental support, many subsidised companies withdraw from the market, indicating ineffective resource allocation (Bernini and Pellegrini 2011; Schweiger 2011). As previously demonstrated, this argument has frequently been used to criticise feed-in tariffs and other measures from which the solar industry has benefited, suggesting that these forms of state aid led to the industry becoming less cost-effective than Chinese companies, resulting in the demise of the European solar industry. Ironically, various revisions to the German feed-in tariffs and the law specifying these, the Renewable Energy Act (EEG), have been deemed non-compliant with EU state aid guidelines by the Commission (Leiren and Reimer 2018).

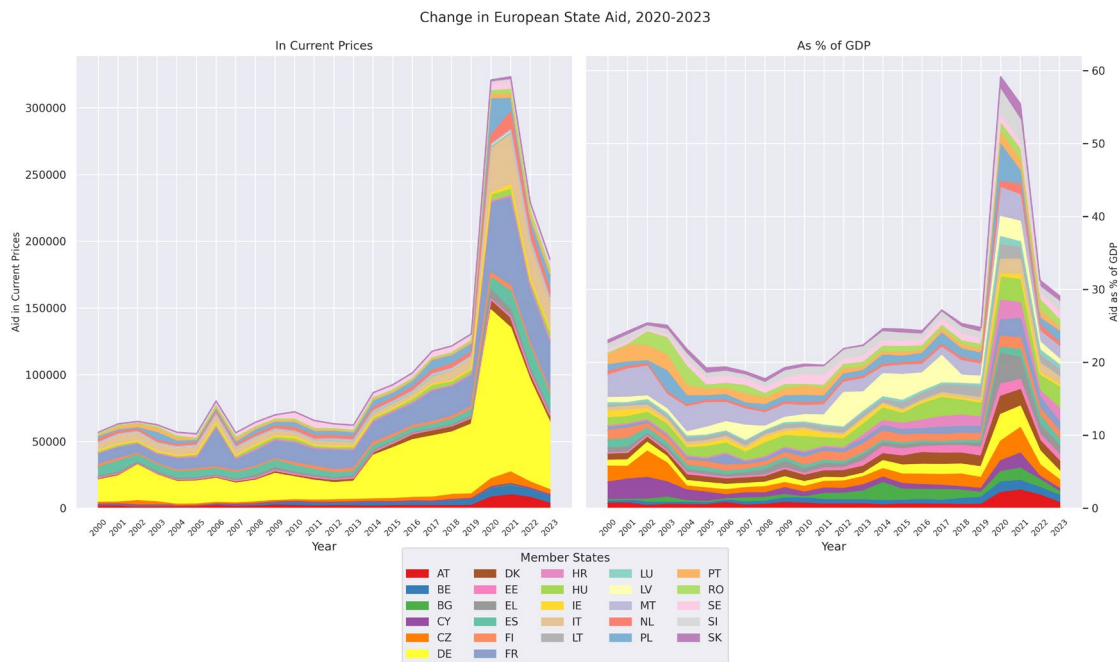
The theoretical framework for justifying state aid exemptions is largely rooted in (neo-)classical thinking focused on countering market failure, i.e. correcting the market's insufficient or inefficient allocation of resources (Werner 2025). Based on this argument, the Commission — in the form of the Directorate-General for Competition (DG COMP) — has been described as a market-enhancing actor because it has fostered negative integration of the internal market by removing trade barriers (Höpner and Schäfer 2012). However, such market failures are notoriously difficult to identify objectively, which makes state aid vulnerable to political pressure and considerations rather than economic necessity (Neven 1994).

In the presence of strict regulation, exemptions from such rules can be used to steer markets. The legal framework that permitted the Commission to exempt certain categories of horizontal state aid from national governments' obligation to notify the Commission was introduced in 1998 through enabling legislation (López 2015). While under this reform, certain types of state aid were subject to stricter scrutiny and the rules applied to additional sectors (*ibid.*), this possible exemption for specific fields can be seen as a necessary prerequisite for the dirigiste parts of an otherwise market-based economy, as they allow for directing it into a 'direction compatible with the respect of certain social and economic objectives as well as the promotion of moral values' (Amable 2017, 18). One could argue that this was the first step in the transformation from an interventionist approach based solely on market failures to a mission-driven approach, as suggested by Mazzucato et al. (Mazzucato, Kattel, and Ryan-Collins 2020). Selective deregulation for certain projects is also a concept found in the Net-Zero Industry Act, in the form of strategic projects.

Additionally, the Commission has used state aid guidelines to inform the design of national support policies. In the case of the aforementioned German EEG, which is particularly important for the solar sector, new state aid guidelines introduced in 2014 directly influenced the transition from a simple feed-in system to an auction-based one (Leiren and Reimer 2018). Conversely, this can also be seen as a continuation of the Commission's liberalising approach.

Some argue that relaxing EU state aid rules would disproportionately benefit larger, fiscally stronger member states with greater financial capacity to support their domestic industries. This could potentially widen economic divergences within the single market (Landesmann 2020; Packroff 2024).

These dynamics could undermine the EU's objective of cohesion, as smaller member states with limited fiscal capacity cannot compete with the generous support packages offered by their wealthier counterparts, thereby exacerbating rather than alleviating existing economic imbalances. Figure 4 shows the provision of state aid by member state. While the huge disparities are visible in absolute terms, they are less apparent when expressed as a percentage of the Member State's GDP. However, this ignores the fact that absolute numbers can be important in facilitating the establishment of cost-intensive industries (e.g. €900 million for Northvolt or €9.9 billion for Intel, both in Germany), which smaller member states might not be able to provide (Packroff 2024). This may therefore also be a point of contention in negotiations between the Commission and the Member States, which is important for the dynamics of policy change discussed below.



### *Change in European State Aid, 2020-2023, Data: European Commission (2024)*

Several key regulatory changes since 2015 have underpinned this gradual shift. A significant step was the adoption of the Guidelines on State aid for climate, environmental protection and energy (CEEAG) in early 2022, which replaced the previous framework and explicitly aligned the assessment criteria for notified aid measures with the objectives of the Green Deal (*Communication 2022/481 – Guidelines on State Aid for Climate, Environmental Protection and Energy 2022*). Under these new guidelines, governments are permitted to incorporate up to 30% non-price criteria into the selection criteria for public tenders and auctions, a scope which will be shown to have been further expanded and strengthened in the Net-Zero Industry Act.

Alongside this, targeted revisions to the General Block Exemption Regulation (GBER) have been made, culminating in the 'Green Deal GBER Amendment', which will take effect in mid-2023. This amendment aims to streamline and accelerate the deployment of support for environmental protection and energy projects by expanding the categories of aid exempt from prior notification and raising relevant financial thresholds (*Communication 2023/62 to the European Parliament, The European Council, The Council, The European Economic And Social Committee And The Committee Of The Regions A Green Deal Industrial Plan for the Net-Zero Age 2023*). This also includes the overhaul and clarification of the IPCEI framework, which, despite having been in place since the Treaty of Rome, saw little use until the mid-2010s due to a lack of clear criteria (Di Carlo and Schmitz 2023).

As with much of the EU's legislative development, changes in state aid rules have often occurred in response to crises. Following Russia's invasion of Ukraine, the Temporary Crisis Framework (TCF) was introduced in 2022 to give Member States exceptional flexibility in supporting their economies (*Communication 2022/131 - Temporary Crisis*

*Framework for State Aid Measures to Support the Economy Following the Aggression Against Ukraine by Russia 2022/C 131 I/01 2022*). This was subsequently adapted and extended in the form of the Temporary Crisis and Transition Framework (TCTF) in March 2023. The TCTF explicitly expanded the scope of permissible aid until the end of 2025 to include measures to accelerate the deployment of renewable energy, facilitate industrial decarbonisation, and crucially, support the expansion of production capacity for net-zero technologies (*Communication from the Commission Temporary Crisis and Transition Framework for State Aid Measures to Support the Economy Following the Aggression Against Ukraine by Russia 2023*). Designed partly in response to international subsidy programmes, such as the US Inflation Reduction Act, the TCTF specifically permits investment aid for production facilities that would previously have been deemed incompatible, indicating a significant policy shift towards safeguarding strategic industrial value chains within the EU (Makris 2023; Scheinert 2023).

Looking ahead, the Commission has indicated its intention to consolidate some of these temporary flexibilities into a more permanent 'Clean Industrial Deal State Aid Framework' (CISAF), which is currently under consultation (*Draft Communication from the Commission: Framework for State Aid Measures to Support the Clean Industrial Deal 2025*).

## Trade Measures

As demonstrated by the 2015 solar case, trade is closely linked to industrial policy. For governments, restricting foreign imports and supporting local industries are often two sides of the same coin. I will therefore also briefly discuss the development of trade policy instruments designed to protect domestic industries in the period between the two cases. It would exceed the scope of this thesis to list all trade instruments and applied tariffs in the energy sector; therefore, I will concentrate on the most notable changes.

One such regulation is the Foreign Subsidy Regulation (FSR), whose origins can be clearly traced to a change in the understanding of protection for domestic industries. It entered into force in July 2023, primarily to tackle competition distortions in the EU internal market caused by subsidies from third countries to undertakings operating in this market (*Regulation (EU) 2022/2560 of the European Parliament and of the Council of 14 December 2022 on Foreign Subsidies Distorting the Internal Market 2023*). This became necessary because, unlike aid provided by Member States, which is regulated by State aid control, foreign subsidies were largely unmonitored until then (Krenek and De Smijter 2022).

The regulation empowers the Commission to investigate such subsidies and impose corrective measures if they are found to distort the EU internal market. The FSR requires companies to notify the Commission of financial contributions from non-EU governments in the event of large mergers, acquisitions or public procurement procedures. The Commission has the authority to investigate potential distortions, impose remedies or prohibit transactions altogether (Furculita and Weiß 2024). It also

grants the Commission permission to launch ex officio investigations independently of thresholds or notification obligations, thus giving DG COMP some leeway for political decision-making (Weiß 2024). The first ex-officio investigation was made public on 9 April 2024 by Executive Vice-President Vestager and targeted Chinese wind turbines, reiterating the importance of this instrument for the energy industry focus of this thesis (Vestager 2024).

However, critics have noted that the different concepts used in the FSR compared to the stricter state aid law put foreign subsidised companies at an advantage over those supported by member states, calling into question the effectiveness of the FSR (Hornkohl 2023).

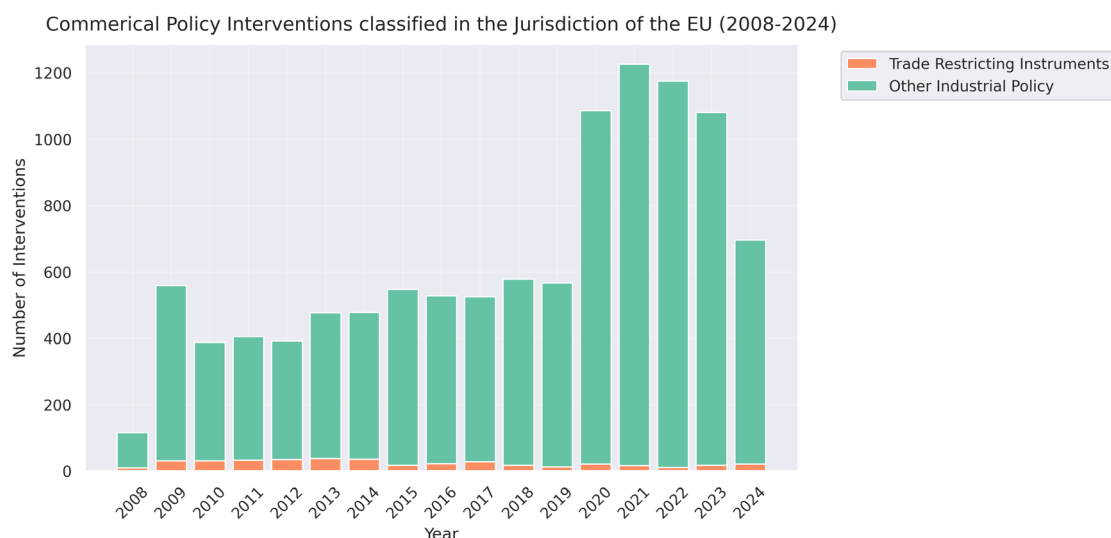
Another concern for European manufacturers arises from the use of local content requirements (LCRs) in many countries. Between the mid-1990s and 2009, China required at least 70% of wind farm equipment to be manufactured domestically. While these official requirements have been lifted, alleged discriminatory treatment of Western manufacturers remains in place (Bickenbach et al. 2024). In order to give the EU greater leverage in market access negotiations, the International Procurement Instrument (IPI) was officially enacted on 29 August 2022 (*Regulation (EU) 2022/1031 of the European Parliament and of the Council of 23 June 2022 on the Access of Third-Country Economic Operators, Goods and Services to the Union's Public Procurement and Concession Markets and Procedures Supporting Negotiations on Access of Union Economic Operators, Goods and Services to the Public Procurement and Concession Markets of Third Countries (International Procurement Instrument – IPI) 2022*).

This allows the EU to restrict access to its public procurement markets for companies from countries that do not offer similar access to EU companies. The European Parliament (2022) described this intent to 'secure fairness' in international procurement practices in its press release. The adoption process itself is indicative of the recent shift in the EU's framework conditions and approaches to trade, as the IPI proposal struggled to gain traction for nearly a decade amid concerns that such a policy would isolate Europe. Brexit, the deadlock at the WTO and an increasing trade dispute with the United States during Donald Trump's first presidency are cited as external shocks that facilitated the adoption of the policy (Storey 2022). However, it is ultimately China's informal approach to restricting the foreign tendering process that is seen as the decisive factor in persuading Member States to agree to the new instrument, but only after China's ability to retaliate was undermined by its perceived support for Russia's invasion of Ukraine (ibid.).

Similar external pressure was necessary to resuscitate the adoption process of the Anti-Coercion Instrument (ACI), a tool that was sometimes dubbed the EU's bazooka in response to the burgeoning militaristic trade war rhetoric (Bounds 2025). This became apparent in December 2021 when it was recognised that the EU internal market was facing not only indirect challenges from the trade and industrial policies of other countries, but also direct attacks. After Lithuania allowed Taiwan to open a representative office named 'Taiwan' instead of 'Taipei', China introduced a number of retaliatory measures targeting Lithuanian exports to China, initially deleting the country from the customs declaration system (Blockmans and Righetti 2021).

Having initially claimed this to be a technical error, China then intensified the measures to include imports from third countries containing Lithuanian components (Small 2022; Zhang and Rabe 2024). Under pressure from the Slovenian Presidency of the Council of the EU, the EU moved forward with its plan to introduce an instrument enabling the Union to respond to economic coercion applied to one member state or the entire EU. This instrument provides a centralised and structured framework for responding to such coercion (Szép 2024). To this end, the ACI provides a range of potential countermeasures relating to trade, investment and funding. It also claims to act as a deterrent to facilitate negotiations regarding trade disputes (*Regulation (EU) 2023/2675 of the European Parliament and of the Council of 22 November 2023 on the Protection of the Union and Its Member States from Economic Coercion by Third Countries* 2023).

These instruments extend the existing Trade Defence Instruments (TDIs). Softer approaches to incorporate industrial policy and climate aspirations into trade could include regulatory attempts such as the Carbon Border Adjustment Mechanism (CBAM) or the integration of sustainability objectives in bilateral trade agreements (Kalimo et al. 2024). However, as shown in Figure 5, trade-restricting instruments are likely to be restricted for the reasons discussed in Section 6.2.2. — seem to have lost importance in the EU compared to different industrial policies, which will be reviewed next<sup>7</sup>.



*Commercial Policy Interventions in the Jurisdiction of the EU, 2008-2024, Data: Evenett and Fritz (2025), Classified as trade restricting: tariff measures, Contingent trade-protective measures. Classified as other industrial policy: Subsidies, Export-related measures, Government procurement restrictions*

<sup>7</sup> Due to the difficulty of measuring such data, only the total count of interventions is depicted in the graph. While this is sufficient to show a general trend, no statements can be made about the value of the products concerned.

## Industrial Policy

Already in 2015, under the impression of the Russian annexation of Crimea the previous year, the Commission launched its Energy Union Strategy with the explicit goal of reducing dependency on Russian gas by diversifying suppliers (Siddi and Prandin 2023). However, as evidenced by the ineffective response to the solar crisis in the same year — which exacerbated import dependency on low-carbon technology — and the increase in the proportion of natural gas imports into the EU from Russia — rising from around 20% in 2015 to almost 40% in 2021 (Karaian and Russell 2022) — this plan resulted in few consequential policies.

The European Green Deal, first announced in December 2019, has been described as a discursive 'paradigm shift' (Schunz 2022), a 'moonshot moment' (Gengnagel and Zimmermann 2022) and a 'roadmap' for the future EU climate and industrial policy agenda (Siddi 2020). Along with subsequent crises such as the Covid-19 pandemic and Russia's invasion of Ukraine, it has indeed marked a notable change in European industrial policymaking, leading to a plethora of strategies and policies concerning the energy sector enacted in subsequent years.

The Commission's 2020 Hydrogen Strategy was one of the first major outcomes of this shift in energy and industrial policy. It set explicit, albeit only strategic, targets for installing at least 6 GW of renewable hydrogen electrolyzers by 2024 and 40 GW by 2030<sup>8</sup> (*Communication 2020/301 - A Hydrogen Strategy for a Climate-Neutral Europe* 2020). It also allocated funding through the NextGenerationEU recovery instrument for infrastructure and focused on creating a European Clean Hydrogen Alliance to facilitate trade with third countries. Another clear strategy to ensure technological leadership was the intention to establish 'technical standards, regulations and definitions on hydrogen' and 'facilitate the development of a structured international hydrogen market in euros' (ibid., pp. 21 and 23). Overall, aside from the climate objectives, the document had a clear market-creating character, yet it relied more on targets and strategies than on robust measures.

In terms of sustainable finance, the EU Taxonomy was established in July 2020. As a classification system defining criteria for environmentally sustainable economic activities, its aim is to direct investment towards projects that align with the objectives of the European Green Deal, facilitating the transition to a net-zero economy by 2050 (*Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088* 2020). However, the Taxonomy has been the subject of significant controversy since the European Commission's decision in 2022 to include natural gas and nuclear energy as 'transitional' sustainable activities. This sparked legal challenges from environmental groups and divided EU member states, who argued that it undermines the taxonomy's credibility and enables greenwashing (Hancock 2022).

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<sup>8</sup> According to the industry association, only 385 MW of electrolyser capacity have been reached by September 2024 (Espitalier-Noël et al. 2024)

Among the most notable outward-directed geopolitical policy instruments is Global Gateway, which was launched in December 2021 shortly before Russia's attack on Ukraine. Primarily developed in response to China's Belt and Road Initiative, it aims to develop infrastructure in strategic sectors, including digital technology, climate and energy, transport, health, education and research — sectors that experienced significant disruption during the pandemic (*Communication 2021/30 to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank - The Global Gateway* 2021). Although the document itself does not explicitly mention China, EU officials have framed the strategy as an attempt to reduce dependency on global, Chinese-controlled supply chains (Lau and Moens 2022). Although the sectoral focus and financing through loans, guarantees, and grants via the EIB were not entirely novel, they were sometimes regarded as mere repackaging of existing instruments (Tagliapietra 2024, 1327). Nevertheless, there has been some recognition of the attempt to align the EU's external investment strategy more closely with domestic industrial objectives (Tagliapietra 2024; Wolf and Poli 2024).

In May 2022, the REPowerEU plan was unveiled in direct response to the geopolitical disruptions caused by Russia's invasion of Ukraine and the subsequent energy crisis, which exposed Europe's energy dependency vulnerabilities. Consequently, the plan and the various policy initiatives within this framework were clearly geopolitical (Siddi and Prandin 2023). The plan cited changing geopolitical challenges as the main reason for accelerating the energy transition and securing a reliable supply of the necessary technologies.

A central component of the plan was revising the Renewable Energy Directive (RED III), raising the EU's renewable energy target to 45% by 2030 — an increase on the previous target of 40%, proposed in 2021 (*Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 Amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as Regards the Promotion of Energy from Renewable Sources, and Repealing Council Directive (EU) 2015/652* 2023). In its third revision, a significant addition to the directive was the establishment of dedicated targets for specific industrial applications, such as renewable hydrogen in industry, introducing an approach that can be described as more market-directing. However, the final negotiations surrounding the legislative process revealed a possible limitation to this approach: France secured concessions for countries with significant nuclear capacity (primarily itself) regarding renewable hydrogen (Jack 2023). As vertical industrial policies increasingly involve selecting favoured technologies or sectors, and Member States have the power to block legislative proposals, individual countries (or coalitions of them) could exploit this to advance their own interests through policy. This dilemma will be examined further in relation to the Net-Zero Industry Act.

As an outward-facing part of this, the External Energy Strategy established the diversification of energy supply and energy security as key priorities. To this end, the EU Energy Platform was established to facilitate joint gas purchases — a strategy similar to that employed for the procurement of Covid-19 vaccines, based on the 2014 European Joint Procurement Agreement (*Joint Communication 2022/221 to the*

*European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU External Energy Engagement in a Changing World 2022*). While the strategy's direct impact on industrial policy can be questioned, elements such as the initiative for renewable hydrogen imports through the Global European Hydrogen Facility still demonstrate an increasing intertwining of external energy policy with industrial development goals.

More directly targeting the domestic industry, the EU Solar Energy Strategy referenced the risks posed by Chinese control of the solar PV industry, albeit without naming the country directly.

*'The marginal EU contribution in the manufacturing and assembly stages of the supply chain, combined with the quasi-monopolistic role of one country in the components stage at a global level, diminishes the EU's resilience in the event of extensive external supply disruptions. This creates risks for accelerated solar energy deployment.'* (Communication 2022/221 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - EU Solar Energy Strategy 2022, 18).

To counter this, the strategy advocated stronger international cooperation with partner countries and applied measures to facilitate the re-emergence of a domestic solar industry. The European Solar Rooftops Initiative will make the installation and retrofitting of rooftop solar panels compulsory for a range of public, commercial and residential buildings, with the aim of accelerating the energy transition and extending the market for the solar industry. Furthermore, to improve market access, the Commission announced a 'permitting package' to limit permitting procedures in member states by law and provide guidance on a more harmonised procedure (Commission 2022/3219 - Recommendation on Speeding up Permit-Granting Procedures for Renewable Energy Projects and Facilitating Power Purchase Agreements 2022).

Lastly, the Solar Energy Strategy included the European Solar Industry Alliance, one among several already existing Industry Alliances, that can be seen as a new instrument for the EU to steer industrial policy (Bosticco and Herranz-Surrallés 2024). The European Commission has launched 17 of such Industry Alliances since 2017<sup>9</sup> in different strategic sectors. Their function has been conceptualised as brokering, which involves creating closer networks between universities, state research institutes, and companies in order to stimulate innovation and increase cooperation (Di Carlo and Schmitz 2023). This approach seems to imitate the clustering method of fostering innovation, as described by Michael E. Porter (1998), which attempts to explain the

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<sup>9</sup> European Battery Alliance (2017), Circular Plastics Alliance (2019), European Raw Materials Alliance (2020), European Alliance for Industrial Data, Edge and Cloud (2020), European Clean Hydrogen Alliance (2020), Industrial Alliance on Processors and Semiconductor Technologies (2021), Renewable and Low-Carbon Fuels Value Chain Industrial Alliance (2022), European Solar Photovoltaic Industry Alliance (2022), Alliance for Zero-Emission Aviation (2022), Critical Medicines Alliance (2023), European Industrial Alliance on SMRs (2024)

success of regional clusters such as Silicon Valley and Hollywood. As such, they aim to build a large, inclusive and diverse membership base that spans the entire value chain. This includes not only EU firms, but also non-EU actors who contribute to European industrial ecosystems. Apart from facilitating bidirectional information flows between industry and the Commission, they also strive to foster policy coordination by jointly setting targets, producing strategic action plans and aligning investments to match projects with funding, e.g. from the EIB (Bosticco and Herranz-Surrallés 2024). Thus, while industry alliances are a relatively new form of public–private partnership, they mostly focus on fostering communication and cooperation, and have limited market-steering powers.

Lastly, apart from the IPCEIs, which have already been covered in the section on state aid, arguably the most novel policies with market-steering capacities are those published under the Green Industrial Deal. This was announced in early 2023 in response to the US IRA and China's industrial policies (Interviews 1, 2 and 3).

The first legislative proposal under the Green Industrial Deal is the Critical Raw Materials Act (CRMA), which addresses the EU's dependency on imported materials essential for the green and digital transitions. The CRMA establishes benchmarks for domestic extraction, processing and recycling capacities. These include meeting at least 10% of the EU's annual consumption of strategic raw materials through domestic extraction, 40% through domestic processing and 15% through recycling by 2030 (*Proposal for a Regulation of the European Parliament and the of the Council: Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials and Amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020* 2023).

The legislation introduces the concept of 'strategic projects', which are subject to streamlined permitting processes, such as limiting the duration of public consultations on impact assessments to 90 days and assigning 'overriding public interest'. Financing options and off-take agreements are also provided for projects that meaningfully contribute to the EU's supply of strategic raw materials (ibid. Arts. 7, 11, 12, 15–17). Notably, it is the Commission, not the member state, that is responsible for designating projects as strategic projects (ibid. Art. 6). Although the permitting process remains with the member state, this allows the Commission to pre-select potential 'winners'. This clear advancement in its competences<sup>10</sup> is justified by Article 114, which allows measures to ensure the proper functioning of the single market. The Commission's argument follows the paradigm of economic efficiency. According to this paradigm, the Member States alone would not have the necessary economies of scale. They would also be subject to inefficiencies resulting from the creation of duplicate structures within the single market. Furthermore, they would be unable to respond to supply changes across the member states (ibid., Explanatory Memorandum, Recital 2).

However, the centrepiece of the Green Deal Industrial Plan is the Net-Zero Industry Act (NZIA). The Act sets clear domestic production targets for clean technologies,

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<sup>10</sup> The approval of State Aid or the designation of IPCEI follow a similar pattern but are, as shown before, more centrally rooted in the Commission's competences.

stipulating that at least 40% must be manufactured in the EU by 2030. It also selects specific technologies to benefit from streamlined regulation and introduces non-price criteria for public auctions. The Act therefore pushes for an import substitution strategy to some extent, marking a significant shift in thinking within the EU (McWilliams, Tagliapietra, and Trasi 2024). In addition to venturing into uncharted territory, the Act's political emergence also exhibits the common pitfalls of vertical industrial policies. The NZIA's origins are therefore reconstructed and discussed below, based on a systematic analysis of policy documents, official discourse, secondary literature, analysis of several hundred responses to public consultations, and expert interviews.

## **Case Study: A new type of European Industrial Policy? The Net-Zero Industry Act**

### **The emergence of NZIA - External drivers and internal quarrels**

Clearly, a multitude of changes to the framework conditions have contributed to the emergence of a different EU industrial policy regime in general and the NZIA in particular. These include the increasing competition and severe loss of market share to China in 'strategic' sectors, the ever-present 'fear of falling behind', the display of supply chain vulnerabilities during the pandemic, and the Russian invasion of Ukraine and the subsequent energy crisis.

However, the one external change repeatedly cited as the main reason for the Net-Zero Industry Act (NZIA) in particular was the US Inflation Reduction Act (IRA) (see Interviews 1, 2 and 3; Public Interview 1; von der Leyen 2023a).

Signed into law by President Biden on 16 August 2022, the IRA represented a significant shift in American climate and industrial policy. Emerging from negotiations over the proposed Build Back Better Act, the legislation officially aimed to reduce the federal deficit, lower prescription drug prices, and invest substantially in domestic energy production while promoting clean energy initiatives. It was likely a response to Chinese industrial policies in the clean technology sector (Boehm and Scalamandrè 2023).

To this end, the IRA primarily provides tax subsidies to support climate action, with many provisions featuring explicit 'Buy American' requirements that have raised concerns within the European Union, leading to their partial adjustment. However, the IRA has jeopardised existing efforts in the EU, such as the goals set under the industrial alliances, and it threatens to do so quite effectively, given that some framework conditions, such as energy costs and the cost of capital, are already lower in the US. This created the fear that EU firms might be enticed to relocate to the US by tax credits on operational costs, which neither the EU nor the individual member states could offer due to legal and financial constraints (Interview 1; Scheinert 2023)

In response, the EU tried to strengthen its own financial capacities, announcing a European Sovereignty Fund<sup>11</sup> (von der Leyen 2023b), facilitated the provision of state aid on a member state level through the Recovery and Resilience Facility, and proposed the Green Deal Industrial Plan, and with this, the Net-Zero Industry Act.

As it was introduced alongside other US protectionist measures, such as additional import tariffs on Chinese electric vehicles and solar panels, the law threatened to lead to an increase in Chinese imports to Europe at low prices, as China sought alternative markets for its industrial overcapacity (Jungbluth and Petersen 2024; Soong and Gunter 2024).

It also sparked conflicts within the Commission regarding how to react to such significant changes in the European Union's environment: Thierry Breton, France's Internal Market Commissioner, emerged as a vocal advocate for a more protectionist 'Europe First' approach, pushing for greater state intervention to shield EU industries from American subsidies. Backed by French President Emmanuel Macron, Breton argued that temporary measures were insufficient and pushed for permanent changes to state aid rules (Kayali, Stolton, and Posaner 2023; Breton 2023). In stark contrast, Margrethe Vestager, the Danish Commissioner for Competition, warned against mimicking America's subsidy-heavy approach. She argued that the EU should stick to open markets and that turning away from established state aid rules could fracture the single market (Leali 2022; Matthijs and Meunier 2023).

This tension is also reflected at the level of individual member states. The literature and remarks of interviewed Commission officials provide a nuanced picture, particularly regarding the roles of Germany and France. These countries have long led two competing factions in European industrial policy. Costa and Afonso (2024) highlight the significance of the French Presidency of the Council in the first half of 2022. Supported by thorough preparation and robust administrative backing, France seized the opportunities presented by the Ukraine crisis to advocate for a more prominent geopolitical role for the EU. While the goal may have been to put France, rather than the Commission, in the lead — as evidenced by the French authorities' use of the misleading acronym 'PFUE' (Présidence française de l'Union européenne, or French Presidency of the European Union) during the French Council presidency — the French government strongly promoted the idea of moving these issues from a national to a European level (Costa & Afonso, 2024; Interview 1).

Di Carlo and Schmitz (2023) highlight the alignment of Germany with the interventionist French industrial policy agenda as a decisive factor that emerged from a series of acquisitions of strategic German companies by Chinese investors. This convergence of views is reflected in a joint declaration by the French and German economic ministers calling for a 'renewed impetus in European industrial policy' and highlighting the IRA as a 'challenge' to Europe (Habeck and Le Maire 2022).

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<sup>11</sup> In March 2023, however, Internal Market Commissioner Thierry Breton announced that joint debt for green transition was no longer a priority (Bourgerie-Gonse 2023). The European Sovereignty Fund has not officially been proposed at the time of writing.

Germany's economic minister, Robert Habeck, was mentioned several times in the interviews (Interviews 1 and 3) as being influential in facilitating the change. However, another EC official remarked that both France and Germany had been relatively weak during this transitional period: France faced domestic conflicts that ultimately led to a cycle of several governments, while Germany was led by a weak coalition government (Interview 2). Together with the fact that, in the 'Versailles Declaration', adopted by EU heads of state and government following Russia's invasion of Ukraine, all member states acknowledged the need for stronger EU investment in common defence, energy policy and the European manufacturing base (Håkansson 2024), this would support the explanation that the absence of French or German opposition — whether due to alignment or weakness — offered the European Commission an opportunity to propose the measure.

The Net-Zero Industry Act was then first announced in a speech of Commission President von der Leyen on January 17th, 2023 at the World Economic Forum (von der Leyen 2023b), both citing the Chinese control of supply chains and the IRA as reasons. She also placed it within the context of European industrial alliances, which focus investment and simplify permitting for strategic projects. This was followed with a communication on the Green Deal Industrial Deal on February 1st which laid out - as discussed before - the reasoning and announced NZIA, CRMA, and a revision of the Renewable Energy Directive (*Communication 2023/62 to the European Parliament, The European Council, The Council, The European Economic And Social Committee And The Committee Of The Regions A Green Deal Industrial Plan for the Net-Zero Age* 2023). On March 13th, the first legislative proposal was published (*Proposal 2023/161 for a Regulation of the European Parliament and of the Council on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Products Manufacturing Ecosystem (Net Zero Industry Act)* 2023). The relatively short drafting time was explained by one official of the responsible DG Grow with the fact that plans that were originally created to cover the permitting of manufacturing facilities in a revised Renewable Energy Directive<sup>12</sup> served as a blueprint for parts of NZIA and enabled the Commission to create a draft in only a few weeks.

## **A pitfall of multilateral vertical policies - The selection of the relevant sectors and technologies.**

In a vertical industrial policy approach, policymakers must decide which technologies or sectors to prioritise in order to allocate limited resources effectively. As discussed above, the NZIA was a direct response to a perceived threat to certain industries deemed to be important in the future. This makes it particularly relevant to this policy, and it has already played a crucial role in previous projects such as the Battery Alliance, the European Chips Act, and the European Critical Raw Materials Act.

The Commission's original proposal for the NZIA employed a data-driven methodology to select strategic technologies, as outlined in Annex 1.10 (*Proposal 2023/161 for a*

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<sup>12</sup> While Directive 2023/2413 (2023), covers accelerated permitting for renewable energy projects, the plans to extend this to manufacturing facilities have not made it into the final text.

*Regulation of the European Parliament and of the Council on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Products Manufacturing Ecosystem (Net Zero Industry Act) 2023*). This selection process is based on three criteria: First, the Commission assesses technologies according to their Technology Readiness Level (TRL), using the International Energy Agency's methodology. This methodology requires technologies to reach at least TRL 8, which indicates the first stage of commercial deployment involving a full-scale system demonstration.

Second, the Commission assesses the potential contribution of each technology to decarbonisation and European competitiveness. The focus is on technologies expected to significantly contribute to the 2030 Fit-for-55 emissions reduction target of at least 55% compared to 1990 levels — a criterion which arguably raises questions about the inclusion of new nuclear technologies, given their development timelines relative to the 2030 target.

The third criterion addresses security of supply considerations, focusing on technologies where European production could reduce import dependencies, particularly from specific third countries. This methodology covers not only the technologies themselves, but also their upstream value chains. This recognises the importance of securing key components and materials in order to achieve Europe's strategic positioning in clean technology sectors.

Given the divergent regional distribution and importance of different net-zero technologies, political contestation over the supported sectors was likely, so the involvement of a neutral actor to make these choices was to be expected. However, in this regard, the NZIA differs from the list of critical and strategically important raw materials in the CRMA, which is based on a list from the Joint Research Centre (JRC) that has been published since 2011 and updated every three years (European Commission et al. 2017). Although the JRC remains under the responsibility of the Commission, specifically the European Commissioner for Innovation, Research, Culture, Education and Youth, the list has already been used to assess risks and identify priorities at the European and Member State levels, lending it credibility. Conversely, the NZIA's list of technologies is curated by a four-person team from DG Grow and DG Energy (Interview 1), which may have made it more susceptible to Member States trying to add their own priority areas.

Under the above-described methodology, the original proposal only named eight final net-zero technologies under fairly broad terms, such as 'Solar photovoltaic and solar thermal technologies' or 'Grid technologies' (Annex I). While it hints at specific components, it refrains from listing those of every technology subject to the legislation. In doing so, the Commission arguably follows the middle path suggested by neo-classical contributions to the industrial policy literature, which states that 'the amount of complexity that such a [hierarchical] structure can handle is necessarily limited' (Rodrik and Hausmann 2006, 34). Criticism of detailed selection is based on the fear of political capture if technology is not solely chosen on the basis of its competitiveness potential (Weiss 2020).

While, as played out before, the goals of the NZIA went above pure market creation (i.e. stimulating the emergence of competitive industries) and more towards a market directing approach, the risk of political capture can undoubtedly be seen in the legislative process following the initial proposal.

In the first position of the European Parliament (2023a), the list increased from 8 to 16 technologies, adding items such as nuclear fission and fusion and Sustainable Aviation Fuels (Article 3a). As these technologies would be difficult to align with the initial data-based methodology described above<sup>13</sup>, it was replaced by a yearly review of the list by the Commission on the bases of the technologies listed in the Member State's national energy and climate plans (Article 3a(2)). The following discussion in the plenary session of the European Parliament (2023b) also reveals that the selection of included technologies sparked debate between parties and countries. Dutch MEPs pushed for the integration of semiconductors; French, Slovakian and Czech MEPs pushed for the inclusion of nuclear power and carbon capture and storage (CCS) technologies for coal power plants; and MEPs from the European Greens pushed for the extension to railways (European Parliament 2023b). Before the European Parliament's position was agreed upon, several committees suggested additional technologies, prompting the REGI rapporteur, Niklas Nienass, to apologise on behalf of his committee for venturing into the ITRE committee's area of expertise (European Parliament 2023a).

The Council of the EU's position went even further, extending the list of final products from eight to 12, and adding a list of primary components, such as mountings for tidal energy and fans for heat pumps (Council of the European Union 2023). The final act reveals further discussion, as the list of final technologies was increased to 19 with an even broader scope, including nuclear technologies not covered under previous categories (Annex I) and additional subcategories. It also stipulates that the Commission will specify the components used in the technologies in a delegated act (Article 42(7)). Thus, the political proceedings significantly widened the focus while increasing the detail and 'verticality' of the policy by specifying the exact components it regards.

The politicisation of the process and the subsequent loss of focus demonstrate a common issue faced by top-down approaches to industrial policy, particularly in contested areas such as the EU's multilateral framework. Aside from the member states themselves, there has also been significant influence from different industrial associations, as evidenced by their extensive participation in the public consultations. Some companies and industries initially pushed for their technologies to be included as this promised potential benefits through less regulation. However, some of them later wanted to reverse this inclusion as the pre-qualification criteria introduced later also threatened to complicate the rollout of certain technologies with a high concentration of foreign components (Interview 3, 12:57).

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<sup>13</sup> The IEA assigns nuclear fusion a technological readiness level of -3: Initial idea, Concept needs validation (IEA 2025)

An interesting case showcasing the potential pitfalls of this vertical approach is the inclusion of permanent magnets as a part of the main specific component list suggested in the draft delegated act<sup>14</sup>.

Permanent magnets play a critical role in various wind turbine technologies, particularly direct drive turbines, where they eliminate the need for a gearbox. This results in fewer moving parts and potentially lower maintenance requirements. By contrast, gearbox-driven turbines employ a distinct mechanical approach to convert the slow rotation of the blades into the faster rotation required for electricity generation (Donnelly, Anderson, and Carroll 2024).

However, the supply chain for permanent magnets is highly dependent on rare earth elements such as neodymium, and mining is almost exclusively concentrated in China (Andrews-Speed and Hove 2023). Although gearboxes are also included in the list of components, they are less subject to natural resource constraints than magnets. If Member States were to implement the resilience criteria as a pre-selection criterion and these technologies remained on the list, the Commission would indirectly favour gear-driven wind turbines over direct-drive ones. Many manufacturers specialise in one type of generator: Danish Vestas in gearbox-driven; German-Spanish Siemens-Gamesa and German Enercon in direct drive<sup>15</sup> (de Vries 2017), this could also give countries the opportunity to prefer their own companies over other EU companies in tenders.

An official from DG GROW explained that including permanent magnets was necessary to make the non-price criteria mandatory for the wind sector, as they are the only wind turbine component for which there is clear dependency on China (Interview 1, 49:23). This shows that even under strict technology selection rules, the selection process will to some extent follow the initial political goal. An example of this is the inclusion of 'transformative industrial technologies for decarbonisation', which first appeared in the common position of Parliament and the Council (*Proposal for a Regulation of the European Parliament and of the Council: Establishing a Framework for Ensuring a Secure and Sustainable Supply of Critical Raw Materials and Amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020* 2023), but has received much less attention in parliamentary speeches and consultation responses. However, including such technologies means that retrofitting traditional manufacturing industries — for instance, replacing a steel plant's heating technology — can be considered a strategic project. According to estimates by an EC official, this could account for around 30% of applications (Interview 1). As he remarked, 'That's the biggest signal of how the whole regulation shifted from clean tech to industrial legislation' (Interview 1, 43:39). (Interview 1, 43:39).

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<sup>14</sup> Draft Annexes to the Draft Commission Delegated Regulation Amending Regulation (EU) 2024/1735 of the European Parliament and of the Council as Regards the Identification of Sub-Categories within Net-Zero Technologies and the List of Specific Components Used for Those Technologies, 2025.

<sup>15</sup> Enercon also uses electromagnetic magnets instead of permanent magnets in some of its models (Alves Dias et al. 2020).

Based on the initial statements discussed above, the NZIA was established to protect certain industries and create stronger resilience by increasing manufacturing capacity in priority areas. This broadening may therefore contradict the primary goals of the Act. When asked about this, a DG GROW official acknowledged that the focus on the most important technologies had indeed been diluted throughout the process. However, they pointed out that the Commission was happy to accommodate the broader focus, as it still has methods to maintain some form of prioritisation through the concept of strategic projects, which will be discussed below (Interview 1, 41:05).

## **Strategic Projects - A license to strategic deregulation?**

Similar to its use in the CRMA, the Net-Zero Industry Act (NZIA) defines 'net-zero strategic projects' as manufacturing initiatives that are crucial for achieving the Act's objectives of climate neutrality, industrial competitiveness, strategic autonomy, and supply chain resilience. Member States may grant this designation to projects that significantly contribute to EU manufacturing capacity, particularly in sectors with high import reliance, or that positively impact the net-zero supply chain, e.g. through advanced technology or job creation (*Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on Establishing a Framework of Measures for Strengthening Europe's Net-Zero Technology Manufacturing Ecosystem and Amending Regulation (EU) 2018/1724* 2024). Such recognition confers the status of 'highest national significance possible', leading to benefits such as accelerated administrative processing and streamlined permitting.

However, the fairly vague definition of the criteria has been criticised as it allows for centralised decision-making (Kampourakis 2025), which an EC official described as a helpful prioritisation feature for the Commission as it counteracts the diluted focus of the policy (Interview 1, 41:11).

Nevertheless, this concept is not entirely new; the designation of 'Projects of Common Interest' (PCIs) under the EU's Trans-European Networks for Energy (TEN-E) Regulation (*Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013 on Guidelines for Trans-European Energy Infrastructure* 2013) provided a similar framework for accelerating important energy infrastructure projects when it was established in 2013. PCI status promises to expedite permitting and administrative procedures. However, an important difference from the Strategic Projects of NZIA and CRMA is that these are explicitly cross-border infrastructure projects. With the PCIs, the Commission has assumed the role of harmonising the timeframe for cross-border projects between Member States, thereby facilitating the coordination of such projects. Following Di Carlo & Schmitz (2023), this could be termed the role of a 'broker'. In the case of the Strategic Projects, recognising such country-specific projects under a fairly flexible regime has a much more selective, vertical component that could be classified as 'facilitating' (ibid.).

The NZIA and CRMA's provision of 'extraordinary legal status' for strategic projects — including expedited approval processes, simplified administrative procedures, and preferential treatment — represents a significant shift from the neoliberal paradigm's emphasis on formal equality before the law towards a more interventionist approach

that actively shapes markets to achieve politically determined goals (Kampourakis 2025).

Nevertheless, this raises significant concerns regarding equality before the law, as the establishment of these special legal categories could undermine the principle of equal treatment for all market participants. By granting privileged status to certain projects, the EU is effectively creating a two-tier regulatory system that favours certain industries and technologies in line with its climate objectives. This could potentially distort competition and raise questions about the democratic legitimacy of determining which projects deserve special treatment (ibid.).

## **Non-price criteria and production quotas - A case of layering and pushing boundaries?**

One of the central and much-contested points of the NZIA is the introduction of non-price criteria (some of which are mandatory) in public procurement procedures and renewable energy auctions. However, the option to select winning bids based on criteria other than price is not a new concept; the 2014 Directive on Public Procurement states that 'Member States may stipulate that contracting authorities cannot use price or cost as the sole award criterion' (*Directive (EU) 2014/24 of the European Parliament and of the Council on Public Procurement and Repealing Directive 2004/18/EC* 2014, Article 67(2)). This was further clarified in the State Aid Guidelines on climate, environmental protection and energy, which came into force in January 2022. According to these guidelines, governments may use non-price criteria for up to 30% of the weighting of all selection criteria (*Communication 2022/481 – Guidelines on State Aid for Climate, Environmental Protection and Energy* 2022). However, these provisions were not mandatory and have barely been used, likely because they increase the cost and length of the rollout of clean technology (Sapir, Schraepen, and Tagliapietra 2022).

Building on these provisions, the NZIA stipulates that authorities must apply minimum environmental sustainability requirements and at least one additional criterion from the areas of social sustainability, cybersecurity or timely delivery obligations for public procurement (Articles 25(1) and 25(3)). For renewable energy auctions, which must cover at least 30% of the annual auction volume per Member State or 6 GW per year, authorities must include pre-qualification criteria relating to responsible business conduct, cybersecurity and project delivery capability, as well as criteria assessing sustainability and resilience contributions (Article 26(1)). The resilience criterion specifically addresses supply chain dependencies by requiring diversification where a single third country accounts for more than 50% of EU supply (Article 26(2)). When used as award criteria in auctions, these criteria must have a minimum individual weighting of 5% and a combined weighting of 15–30% (Article 26(4)). Member States may waive the application of these criteria if doing so would result in 'disproportionate costs', defined as price differences of more than 15% per auction or 20% for procurement procedures (Articles 26(5) and 25(10)).

The pre-qualification criteria were not part of the initial Commission proposal, but were introduced by Parliament after several Members of the European Parliament (MEPs),

including Christophe Grudler of the Renew group, proposed them as a means of establishing a European preference in public procurement. This would be similar to certain provisions in the Infrastructure Investment and Jobs Act (IIJA) in the United States, and would counter the influx of Chinese products onto the European market (European Parliament 2023b). The EP adopted this idea by proposing technology-dependent pre-qualification criteria based on local content (European Parliament 2023a). However, this faced strong opposition from a group of over 400 companies, led by the European industry association SolarPower Europe, who claimed that such provisions would effectively ban certain high-content technologies from outside Europe from public auctions (SolarPower Europe 2023). Interestingly, the low anti-dumping duties imposed on Chinese solar panels in 2017, as discussed in Section 3, were cited as an example of slowed deployment and job losses resulting from trade defence measures. Subsequently, these provisions were weakened again in the Council's position, giving Member States more leeway to decide whether to use them as pre-qualification or award criteria. This was reflected in the final policy act (Council of the European Union 2023).

The possible fragmentation arising from the different implementations of these acts was also frequently criticised in the Feedback regarding the corresponding Implementing Act<sup>16</sup> and also acknowledged by a official from DG GROW familiar with the case (Interview 1, 28:17). As the NZIA was justified with Article 114 TFEU, harmonisation of the single market, a decreed fragmentation of national rules does not necessarily seem to follow that logic. Recital 2 of the Implementing Act (*Draft Implementing Decision Adopting Guidelines for the Implementation of Certain Selection Criteria for Net-Zero Strategic Projects Laid down in Article 13 of Regulation (EU) 2024/1735 of the European Parliament and of the Council 2025*) directly references the goal of this empowering article again:

Harmonised implementation of the criteria should reduce transaction costs for economic operators and Member States and avoid fragmentation of the internal market in accordance with the principle of Union added value.

However, it seems that opening such an important regulation to the scrutiny of the respective member state gives them the power to adjust their auctions in a way that strongly favours specific suppliers, as shown above in the example of permanent magnets for wind turbines. It also enables incoherence in national regulation due to 'gold-plating' on top of EU regulation, which the EU Commission has repeatedly sought to combat in order to reduce bureaucracy (most recently in *Communication 2025/47 to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions: A Simpler and Faster Europe: Communication on Implementation and Simplification 2025*).

These criteria were defined in a draft resolution published by the Commission on 24 January 2025, which will be clarified in a later implementing resolution. In this draft (*Draft Implementing Regulation on Non-Price Criteria in Renewable Energy Auctions*

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<sup>16</sup> Explicit concerns about this issue were expressed in 22 different responses to the public consultation on the implementing act, with the mast majority of them being private businesses.

2025), the Commission introduced a calculation method to simplify the application of the additional resilience criteria, while responsible business conduct, cybersecurity, and data security remained compulsory pre-qualification criteria. With this, however, it also introduced the limitation that - irrespective of whether member states choose to implement the resilience criteria as pre-qualification or award-criteria - certain elements of a system, such as the solar panel, module, and the inverter, shall never come from a single source of supply. In this case, such offers will have to be scored lower<sup>17</sup>. With these provisions, the Commission effectively adapted an instrument, which had been introduced by the member states to extend their leeway, at least partly into its own instrument, which follows its own goals.

Furthermore, the Commission significantly expanded the scope in this Implementing Act. Firstly, Article 7.3 specifically mentions China, whereas the NZIA does not mention or target any third countries. Secondly, it introduces additional import restrictions of 75% for electrolyzers and wind technologies, regardless of whether high dependency has been identified, which is a necessary trigger for the obligatory application of non-price criteria in other cases. Interestingly, this 'ambitious' approach (Interview 1, 19:25) has not received much public attention.

While a number of participants in the public consultation criticise the article for its lack of clarity, only two of them — Green Energy Denmark and EDF Group — specifically highlight the potential legal issue of introducing significant additions in an implementing act. No public objections by member states or the Parliament followed, even though there have been precedents, such as the Biocides Case, in which the European Court of Justice provided general guidance on the contrasting legal nature of Implementing and Delegated Acts, arguing that only the latter can be used to supplement or amend certain non-essential elements, while the former is limited to provide[ing] further detail [...] to ensure that it is implemented under uniform conditions in all Member States (European Commission v European Parliament and Council of the European Union 18~March 2014, paras. 39–40).

While the Implementing Act had not yet been published at the time this article was written, it had reportedly been approved without any dissenting votes on 11 April 2025 (contexte 2025), despite a Commission official describing the preceding discussions as very harsh (Interview 3, 12:36). One could argue that the lack of public discussion surrounding this apparent overstepping of the Commission's competences indicates a general consensus among the member states and could be viewed as a sign of the open policy window that the Commission exploited.

Thus, despite the NZIA's provisions for stricter resilience criteria, member states retain considerable discretion in their implementation. The 'safeguard clauses' (Article 26(5), (10)) allowing exemptions for disproportionate costs (more than 15% per auction) or undersubscribed bids mean that the effectiveness of these measures will ultimately

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<sup>17</sup> They are, however, still subject to the principle of disproportionate cost, and can thus be still considered if the more diversified solution would lead to a cost increase of more than 10%

depend on each country's approach to implementation and its political commitment to prioritising resilience over cost considerations (Interview 1, 20:29).

Lastly, an interesting instrument is the benchmark of manufacturing capacity of 40% of the European Union's annual net-zero technology deployment needs by 2040 (Article 5), which is more notable for the change it indicates than its effectiveness.

A similar benchmark was introduced for the EU's share of global advanced microchip production by 2030. This was not as often claimed in the Chips Act, which is a binding regulation in itself, but rather in a separate communication titled '2030 Digital Compass' (*Communication 2021/118 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2030 Digital Compass* 2021) and as part of several industry alliances. While the newly introduced benchmark is non-binding, it is used by the Commission to assess the need for further action and has been criticised for being too blunt, as it neglects the differences between technologies and their potential adverse impact on the speed of decarbonisation (Tagliapietra, Veugelers, and Zettelmeyer 2023).

However, it could be argued that this is an initial step towards the introduction of Local Content Requirements (LCRs). Historically, LCRs were frequently employed in developing countries, but were rarely used in Europe, with Spain's requirements for the wind sector benefiting Gamesa (now Siemens Gamesa) being one notable exception (UNCTAD 2014). The European Commission has previously criticised such measures as protectionist (Deringer et al. 2018) and has challenged the application of LCRs in other countries before the WTO. A pertinent example of this is the Ontario case, in which the EU, together with Japan, successfully disputed local content regulations for renewable energy equipment in the Canadian province of Ontario (Stephenson 2013). The Commission also introduced the International Procurement Instrument (IPI) to counter such foreign LCRs.

Although the Commission continues to avoid explicit 'local content' terminology, the introduction of local production 'quotas' and pre-qualification criteria, such as those relating to cybersecurity, could be seen as a step in this direction. This is also demonstrated by the mission letter issued to Executive Vice-President Stéphane Séjourné in the von der Leyen II Commission, which advocates a preference for European products in public procurement for specific strategic sectors and technologies (Von der Leyen 2024, 6).

## **Criticism of the NZIA - A text-book example of industrial policy?**

The Net-Zero Industry Act, then, is reflective of the broader discussion in industrial policy.

On the one hand, it has been criticised for its top-down approach to selecting technologies and 'picking winners', while failing to address the underlying horizontal issues, such as skill shortages and access to financing (Tagliapietra, Veugelers, and Zettelmeyer 2023). Another criticism is that it introduces fixed targets and openings for national support in industries where this might not be necessary, which could lead to rent-seeking by companies (Hermwille and Leipprand 2024).

On the other hand, it has also been criticised for not focusing on a small set of technologies and for not levelling the playing field enough in the face of US IRA and Chinese state subsidies (Redeker 2024).

Not all provisions of the NZIA are covered here, such as Net-Zero Valleys (a clustering approach) and targets such as those for CO<sub>2</sub> injection capacity and the share of EU Emissions Trading System revenues used for clean technology manufacturing. This is because they arguably offer few new forms of industrial policy tools besides those already in place. While certainly not revolutionary, the NZIA reflects a new kind of European industrial policy and highlights the challenges of negotiating vertical policies within a multilateral framework. In the following section, I will discuss why the EU's change in integrated industrial policy — encompassing the closely interlinked areas of trade, competition, and industrial policy — occurred as it did.

## 6. Discussion

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### Explaining Changes between Solar and NZIA

#### The necessity of change: A case of functional spillover

Despite all the differences between the two cases examined in this thesis, a close examination of the negotiations and measures surrounding them still allows one to compare how the EU's approach to economic activism has changed over the years.

One of the primary public arguments — the fear of falling behind in manufacturing and the competitiveness of future technologies — has remained unchanged (Seidl & Schmitz, 2024).

However, after the 'geo-dirigist' turn in the European Union, the primary arguments for economic activism are no longer purely rooted in traditional industrial policy thinking, but are supplemented with notions of economic security, broader strategic objectives, and fairness. The fear is not just of falling behind better producers; it is also of losing access to products altogether. From the European Commission's perspective, this change could be described as a case of functional spillover stemming from neofunctionalism. Based on Niemann and Ioannou's (2015) operationalisation of Haas's (1958) theory, a salient objective (the green transition and open strategic autonomy) is heavily functionally dependent on a different policy area (the existence of an industry that manufactures the necessary technologies). There is no viable alternative solution (importing from a single source would contradict open strategic autonomy), and the functional connection is recognised by key policymakers (see the discourse about the NZIA in Section 5.4). These often country-specific issues are elevated to the European level by the transnationalisation of national industries. The decline of German solar manufacturers, for example, has implications for the resilience of the energy transition in all Member States.

Yet, despite the necessity for interventions arising from different policy fields, the Commission faces what Olsson (2020, 43) aptly describes as a 'geoeconomic paradox': while the EU wishes to be perceived as, and act as, a power capable of pursuing geoeconomic strategic objectives, decades of market liberalisation — such as the privatisation of formerly state-owned energy companies — have made it much more difficult to influence companies and markets to this end. The paradigm of keeping government-firm relations to a minimum to avoid distortions of the single market - codified in the legal basis for competition, trade, and industrial policy in the EU treaties - stems from the EU's long-time nature as a regulatory state (Majone 1997), but creates a tension with the geopolitical and security considerations of a more political EU governance.

## Changing Strategies

When taking all policy sectors together, three general changes are visible when comparing the discussion about tariffs to protect the solar industry with the Net-Zero Industry Act, which aims to protect net-zero technologies.

### **Ex-ante instead of ex-post:**

While the EU's actions in the solar case were limited to reactive measures in response to the acute crisis caused by the large-scale import of Chinese solar panels at very low prices (protective tariffs), subsequent policies indicate a more pre-emptive approach. Generous exemptions from state aid rules, public–private industry alliances with concrete benchmarking targets, stricter expansion goals for Member States to stimulate demand and strategic deregulation approaches for certain sectors support industries, making them not only internationally competitive but also resilient enough so that reactive measures such as protective tariffs, which come at great political expense as discussed below, are no longer necessary. Clearly, such supportive policies are not a new invention, as evidenced by the aforementioned German EEG in the case of the solar industry. However, it is a new development that these industry-building measures originate not only from Member States, but also from the European Union.

### **Vertical instead of horizontal:**

As previously mentioned, the legal basis for the EU's industrial policies in Article 173 TFEU explicitly limits the scope to horizontal measures that create a favourable environment for all companies, rather than supporting specific industries. Apart from the legal basis, such 'pick-and-choose' policies also contradict the market liberalising paradigm that has historically characterised the Commission (Kampourakis 2025). Unsurprisingly, then, vertical industrial policies have been rarely used at a European level until the 2010s (Ambroziak 2017; Owen 2012), even though Stiglitz et al. (2013) point out that, in practice, governments that are publicly committed to 'neutral' policies tend to favour certain industries over others when allocating limited support resources. The overt selection of specific sectors, industries and technologies at a European level, as seen in the Net-Zero Industry Act, Industry Alliances or state aid frameworks such as the TCTF, is a new and distinct feature of the geo-dirigiste turn.

### **Technical instead of open:**

Lastly, the Commission failed to introduce robust measures for the solar industry due to strong public opposition and the moralisation of the tariffs. The then Trade Commissioner, De Gucht, described the EU's ability to unite behind the protective tariffs as a 'test' of its cohesion under pressure from external forces — a test that the member states failed (Pepermans 2017). Aside from the relatively fixed north–south divide between member states on trade policy positions (van Loon 2018), moralisation turns such disputes into broader public discussions. Using the solar dispute as an example, Ergen (2021) argues that, while seemingly technical and mostly discussed

in isolated institutions, trade policy still depends on public legitimacy and is thus influenced by non-rational, normative expectations.

The decision to protect a company (or an entire industry) or to allow it to fail, or to keep it alive with subsidies or trade measures, is presented as the outcome of a 'blame game' concerning guilt, responsibility and merit. This, in turn, builds on Stinchcombe's (1997) observation that the destruction of entire industries or organisations in modern capitalist societies (i.e. Schumpeter's 'creative destruction') is contrary to human nature and is therefore the result of an 'institutional creation' (ibid., p. 15). Schumpeter himself also acknowledged that such 'creative destruction' could lead to depressions that would call into question the legitimacy of political institutions if they permitted such destruction (Schumpeter 1939).

However, when the choice is presented as supporting an industry so that it survives or letting it fail, moral arguments can be decisive in public debate. In the case of the solar industry, for example, the discourse about supporting companies quickly shifted to a debate about the morality of saving them, given that they had been accused of making substantial profits from public subsidies while failing to invest in research and development (R&D) and cost-saving measures in production (Ergen, 2021). Similar voices can be heard in the recent discussion about the European anti-dumping tariffs on Chinese electric vehicles (EVs), which the Commission introduced in 2024. These voices consider the tariffs to be morally unjustified because European car manufacturers have failed to make progress in the development of EVs (Boewe and Schulten 2024). Once again, member states struggled to find a common position, with countries and carmakers dependent on exports to China opposing the tariffs (von der Burchard and Wacket 2024). Similar to the solar example, and thus consistent with the preference for ex-ante over ex-post rules, these tariffs were introduced when the sector was perceived by policymakers as facing an acute crisis, making other measures no longer viable (Martinez 2024).

Thus, the new approach to economic activism of the EU also has the advantage of being more technical and therefore less tangible for the general public than more politicised and moralised measures such as tariffs.

## Explaining differences in changes in different policy sectors:

Examining the changes in different policy areas individually will now enable the previously formulated hypotheses under research question (1) to be assessed.

### State Aid Policy, a case of Conversion and Layering

*We are just changing a bit, tweaking a bit the parameters on the policy objectives that we see fit* (Interview 3, 03:11)

*I think it's an evolution as we say, it's probably not a revolution.*  
(Interview 3, 27:51)

In H1, I stipulated that based on the theories of gradual change, state aid policy will likely have transformed through 'conversion' or 'displacement' of existing policies.

This is founded on the considerable autonomy that the Commission, particularly DG Grow, has in applying the State Aid rules without encountering many blocking powers, and on the limited discretion it has in interpreting or enforcing the set rules due to ECJ oversight. However, on closer examination of the developments, this assumption only partly holds up.

First, with regard to veto powers, it seems that the Member States indeed have limited power to block changes to the application of state aid. This is evident from the strong protests voiced by several smaller countries against the adoption of the TCTF, which ultimately went unheeded (Packroff 2024). Conversely, certain member states, notably France and Germany, appear to have pushed the Commission to extend the rules beyond what it initially intended, particularly to broaden the application of an aid-matching clause in the TCTF. This would allow Member States to match the subsidies that companies would have received in a non-EU country, in direct response to the US IRA (ibid.).

This dynamic shows that the underlying assumption that the Commission's geo-dirigiste agenda would see it use all its available tools (such as the state aid regime) to advance this agenda has also proven partly incorrect. While Commission strategic targets and actions have repeatedly involved loosening state aid control, there seems to be disagreement within the Commission on how far to go in practice. This is evident from the aforementioned dispute between Thierry Breton and Margrethe Vestager (Matthijs & Meunier, 2023) and was confirmed by officials from DG GROW (Interviews 1 and 2) and DG COMP (Interview 3). During the interview, the two senior officials described their work as being purely focused on fixing market failures, stating that state aid allowances are purely 'data-driven issues' (Interview 3, 28:22). This aligns with other accounts describing DG Competition as a resilient institution whose practices have remained largely unchanged (Caffarra 2024; Sisco 2024).

Thus, DG Competition can be viewed as an internal veto actor against change, defending the status quo against internal challengers within the Commission and striving to uphold the liberalisation and competition paradigm in the single market.

Second, despite the Commission having relatively high legal discretion to reinterpret rules, as few cases are brought before the ECJ (Cini 2021), political realities often restrict its ability to do so, as the Commission ultimately depends on the Member States' cooperation in complying with its rulings (Doleys 2013). This more complex, less binary treatment of veto possibilities and levels of discretion when interpreting rules, as observed in political reality as opposed to the theory derived from the legal basis, is also evident in empirical observations of changes.

Many of the documented institutional changes can be well described by the concept of conversion. While some rules have changed, the state aid framework itself has remained largely intact, but several key legislative provisions have been reinterpreted and enacted anew to serve a new purpose. This is particularly striking in the case of the IPCEIs, where an existing legislative framework (largely forgotten by member states, according to Di Carlo & Schmitz, 2023) has been revived in the face of new challenges and objectives. Similarly, the General Block Exemption Regulation, criticised around the turn of the millennium for its procedural-administrative focus, was later repurposed to facilitate public policy (Brook 2022).

Political feasibility influences the Commission's generally high level of discretion in interpreting and enforcing legislation in this area, as evidenced by the extensive use of soft law instruments such as communications, guidelines and frameworks (Howell, 2014). The flexibility inherent in soft law also allows the Commission to adapt its regulatory stance more rapidly than through formal legislation, making it a preferred tool for reacting to external crises (Stefan 2013, Public Interview 2, 16:12).

Beyond what Ben Smulders, the Deputy Director-General of State Aid Policy at the Directorate-General for Competition, stated regarding the temporary nature of this use of flexibilities (Public Interview 2, 17:01), the TCTF example exhibits an additional element of layering. The TCTF itself is an amendment and extension of the initial TCF, which was adopted shortly after Russia's invasion of Ukraine in March 2022 and was initially only valid until the end of 2022. Following two TCF revisions, the TCTF extended support to the clean tech and renewable sectors (Makris 2023) and prolonged it until the end of 2025. In the context of the Clean Industrial Deal, the Commission is discussing adopting CISAF to replace, extend and amend the TCTF (*Draft Communication from the Commission: Framework for State Aid Measures to Support the Clean Industrial Deal* 2025). Here, DG COMP may be reacting to ongoing developments rather than shaping them: changes led by other DGs, such as the expanded list of technologies in the NZIA, force changes to the new state aid framework revision, which must now accommodate these changes (Interview 1, 38:51). Thus, in addition to conversion the use of layering — the placement of amendments, revisions or additions [next] to existing rules (Mahoney & Thelen, 2010, p. 16) — can be confirmed.

If, in the framework of Mahoney and Thelen (2010), conversion is described as likely to occur in the absence of strong veto powers to prevent change, how does this align with the finding of an *internal* veto actor within the Commission? Such resistance to change may be stronger when long-held rules are overturned than when only the meaning changes while the underlying principles remain intact. Reinterpretations of

rules may be easier for such veto actors to overlook than their outright change or negligence. In the case of the TCTF, the Competition officials interviewed insisted that it would remain true to the competition-enforcing, data-driven, market-liberal approach of the state aid regime. This is because it only makes it easier to grant aid in some pre-approved areas; it does not limit the possibility of applying it in different areas: 'Policy objectives for the measures are not for us to decide' (Interview 3, 01:15). However, it is difficult to argue that this change — a greatly reduced complexity and duration of the permitting process — would not direct investment towards the priority areas set by the Commission and, under strict EU fiscal rules, away from other areas. The dynamic of internal veto players and their relative strength depending on the source of institutional change could be researched and verified in greater detail in different contexts.

Hypothesis H1 can thus only be partly confirmed. While conversion can be identified as a source of institutional change with regard to state aid, displacement could not be observed. Instead, layering occurred, likely due to internal constraints on upholding the idea of liberal competition and the political rigidity of the rules in practice.

## Trade Policy, a case of Layering

*[...] trade by itself is not going to fix the problems that we have. It will be part of the solution but not the entire solution. (Interview 2, 27:05)*

*The Net-Zero Industry Act was a big change for DG Trade because suddenly we have a piece of regulation that says [...] authorities have to apply non-price criteria, that could discriminate against suppliers [...] where we have a strategic dependency, so clearly China. And this was a big change to the logic we have on free trade. (Interview 1, 16:01)*

In H2, I stipulated that trade policy would probably evolve through 'layering' on top of existing policies.

This assumption was based on the Commission's limited discretion in interpreting existing institutions, given the significant influence of member states in the process and their substantial veto powers, along with those of other EU institutions, against transformation.

These presumptions proved to be true in light of the actual developments, but have been exacerbated beyond the legal basis. As discussed in Section 6.1, the moralisation and politicisation of trade instruments, as well as disunity among member states regarding their use, further limit the Commission's discretion to reinterpret rules and strengthen the veto powers of other actors. Adding to this rigidity, the Commission remains keen to uphold the values of open trade in its actions and discourse. This caution is also evident in the interviews collected for this research: even though they were conducted under the premise of anonymity, officials were reluctant to use terms such as 'protectionism' or 'nationalism', relativising them when they did use them to make their point (Interviews 1–3).

This 'moral' striving to uphold the values of free trade, especially against a WTO regime that many regard as failed (Interview 2, 24:47), and which has long formed the basis

of the belief that 'change comes through trade' (Interview 2, 18:18), has limited the scope for policy development. However, in recent years, a small opening has emerged from the relative weakness and disenchantment of pro-trade nations, as seen in individual cases such as company acquisitions (e.g. the frequently cited Kuka case) or failures (e.g. Northvolt), which are perceived as strategic (Interview 2; Di Carlo & Schmitz, 2023; Lavery, 2024).

The Commission has used this opening to introduce technical policy tools, such as the Foreign Subsidy Regulation (FSR), as a solution to the politically difficult and highly moralised topic of tariffs. Notably, the FSR was adopted with 'astonishing unity and speed' (Frank 2023, 925), in contrast to the major disagreements that Member States had on various previous anti-subsidy measures, including the aforementioned solar case and the provisional tariffs on Chinese electric vehicles in 2024, following an investigation into Chinese subsidisation (Fraïoli 2024; Moens and Gijs 2023). This is despite the fact that the European Commission was granted the power to make decisions and impose or block conditions on investments within the internal market, a power that had previously been held by the Member States (Dackö, Brodin, and Arlebo 2022).

As Nibe et al. (2024) remark, the Commission has engaged in 'pre-emptive depoliticisation' to facilitate swift adoption by shortening the legislative process, limiting the number of actors involved, and framing the issue in strictly legal and technocratic terms rather than political ones. They also point out that tasking the pro-free trade DG TRADE with drafting the tool and the pro-competition DG COMP with enforcement was a deliberate choice, though one interviewee from DG COMP saw this simply as a logical consequence of translating existing competences and procedures into a new field, rather than a wider signal (Interview 3, 21:52).

These changes can thus be seen as a typical case of layering, whereby new rules are added to existing ones, slowly changing the underlying structure. This is also in line with a statement by a Commission official who noted that the FSR, IPI and TDI were created not only to provide leverage with other countries in trade negotiations, but also to demonstrate that the EU would be able to act despite the divergence of its member states<sup>18</sup> (Public Interview 1, 3:29:24). These new instruments solve an issue that existing tools such as anti-subsidy and anti-dumping regimes have, as they are subject to Member State approval and thus vulnerable to divide-and-rule tactics. However, they do so without replacing these traditional tools, but are just layered on top of them.

Hypothesis H2 can therefore be confirmed, as the observed change is best described as layering.

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<sup>18</sup> This issue is, however, very well understood by the other side: Zhang & Rabe (2024, 10) cite a Chinese official with the words the EU's legal framework is too rigid, national interests are too divided, and most importantly, everything comes too little too late".

## Industrial Policy, a case of Displacement

*There is no article in the treaty that says you can just create legislation for industrial policy, so it's been quite new, and a lot of lawyers scratched their heads for a long time (Interview 1, 12:21)*

In H3, it was assumed that the Commission's industrial policy would evolve through 'layering'.

This was based on the Commission's limited legal mandate in the industrial policy sector and the strong veto rights of other institutions, which are likely to be exercised if the Commission attempts to extend its power. The realm of industrial policy is a special case because the Commission's mandate is less codified in the treaties and administrative customs. Notably, the frequent invocation of Article 114 TFEU, which justifies harmonisation for the functioning of the single market, rather than the actual basis of the European Commission's limited industrial policy competence under Article 173 TFEU, arguably exceeds the Commission's mandate in this area. The lack of strong pushback by other institutions is indicative of the discretion currently held by the Commission in reinterpreting the rules. However, this may also be partly due to external factors and the perceived urgency of topics at a Member State level, making it more temporary than permanent.

As noted previously, such exogenous factors are crucial in historical institutionalism, as developed by Mahoney and Thelen, where periods of contingency that lift or ease the usual constraints are known as 'critical junctures' (Capoccia and Kelemen 2007). They are, however, not directly part of their conceptualisation of 'discretion', which seems to be rather related to the legal and assumed leeway that an institution offers to a challenger to reinterpret it than to having a temporal component. The exploitation of these temporary openings is particularly pertinent given that both articles only consider horizontal measures, whereas recent policy initiatives of the Commission have a strong vertical focus.

With this, the Commission has moved away from its previous role of coordination, or 'brokering' as Di Carlo and Schmitz (2023) would term it. Examples of this can be seen in the coordinated procurement of Covid-19 vaccines, the creation of networks between research institutions and industry as part of the industrial alliances, and the EU Energy Platform for joint gas purchases. Instead, it adopted a 'facilitating' role, enabling specific projects. This is demonstrated by the selection of technologies eligible for expedited legal procedures, the choice of strategic projects under the NZIA, and the creation and expansion of the IPCEI framework in the state aid sector. I argue that this change can be understood at two levels: between different actors (mostly DGs) within the Commission, and between the Commission and other actors in the EU. I will discuss this further in Section 6.2.4.

This venturing into new areas does, however, also grant strong veto rights to other actors, notably the Member States and Parliament. Regarding the application of Article 114 TFEU, the ECJ has issued case law that defines fairly narrow boundaries (e.g. the tobacco case; see Section 6.2.4). However, recent commentary suggests that the court is rather accommodating when it comes to stretching the application (Engel 2025;

Howell 2014). Nevertheless, the significant dilution of the NZIA's focus suggests that the Member States and the Parliament have considerable leverage in introducing such policies. In turn, the Commission has introduced new tools, such as strategic projects (see Section 5.4), and has stretched its mandate for implementing acts (see Section 6.3) in order to maintain a certain level of control.

In this complex web of competences and interests, an exact mapping of veto power and discretion, as envisaged by Mahoney and Thelen (2010), proves difficult. The actual policy changes observed rather suggest a case of displacement. With the NZIA and the CRMA, the Commission is arguably creating new regimes and rules that — at least with regard to competences — might slowly replace existing ones. With the extended usage of Article 114 TFEU to facilitate vertical industrial policies, and in the absence of resistance from other actors, it is gradually replacing, rather than supplementing, the current (and limiting) provisions in Article 173 TFEU. Over time, this could alter institutions by changing the implicit assumptions on which they are based. In this case, these acts are likely to set a precedent for the Commission's future involvement in industrial policy.

To stay in the terminology of historical institutionalism, it creates a path dependency where the application of one mode of transformation leads to a repeated opening of more and more policy windows that enable the change agent to advance their agenda. This is closely related to what Koreh et al. (2019) refer to as a 'dynamic framework of gradual institutional change'.

Displacement occurs when weak veto possibilities make such profound transformations impossible (Mahoney & Thelen, 2010). How does this relate to the previously proposed strong veto powers in the field of industrial policy? Veto powers are only relevant when the change agent fears their usage. In the case of industrial policy, however, the potential veto actors themselves — the member states — explicitly pushed the Commission to draft additional legislation (Habeck & Le Maire, 2022; Interview 2). It appears that, in the opening provided by these policy windows, there was little will by member states to veto the expansion of the Commission's competences as long as they profited from the provisions in the policy acts — which explains the considerable extension of the list of technologies in the NZIA to accommodate the demands of specific member states. Whether this creates a favourable policy outcome or might fuel future contention about the authority in industrial policymaking will be discussed further in Section 6.3.

Hypothesis 3 cannot therefore be confirmed, as the observed change is best described by the concept of displacement rather than layering.

|                                          |                           | Characteristics of the Targeted Institution            |                                                         |
|------------------------------------------|---------------------------|--------------------------------------------------------|---------------------------------------------------------|
|                                          |                           | Low Level of Discretion in Interpretation/ Enforcement | High Level of Discretion in Interpretation/ Enforcement |
| Characteristics of the Political Context | Strong Veto Possibilities | Layering<br>Trade P.<br>State Aid P.                   | Drift                                                   |
|                                          | Weak Veto Possibilities   | Displacement<br>Industrial P.                          | Conversion<br>State Aid P.                              |

*Observed sources of institutional change in the policy sectors, based on Mahoney and Thelen (2010, p.19)*

## Beyond Policy: Changing Dynamics in the Commission

*Now it's about signaling. It's about strong signals... The Commission changed a lot in that sense. It's a geopolitical and political commission. (Interview 1, 56:49)*

During the process of describing and clustering the policy changes in the three main areas of economic activism, some more general changes in the internal and external dynamics of the Commission became apparent, which I will describe below. The separate assessment of the different policy sectors revealed much greater stability and inertia in competition and trade policy — the two areas in which the Commission has enjoyed greater autonomy for some time.

As this thesis argues, the impossibility of making profound changes to the treaties has made it necessary to use means of gradual change to achieve changes in the strictly codified regulatory environment.

The domain of classic industrial policy *prima facie* appears to be outside the scope of this theory, as the Commission's relatively recent foray into this area means there is little institutional stability to build upon. The Commission's behaviour as a 'competence-maximising rational actor' (Pollack 1997) can be well described by the theory of policy entrepreneurship (Kingdon 1995), whereby it seizes opportunities presented by 'policy windows' to extend its competences and power into sectors only tangentially related to its traditional mandate.

The Commission then used the momentum arising from a multitude of external crises, diluted Franco-German leadership and active calls for greater European guidance on industrial policy (e.g. the Versailles Declaration) to assert its agenda-setting authority.

This is partly facilitated by the increasing politicisation and presidentialisation of the Commission. Politicisation, especially in contrast to the previous bureaucratic culture, can be described as involvement in topics of high salience and contestation (Dür, and

and De Bièvre 2024), particularly in an agenda-setting rather than reactive manner. At the level of the European Commission, this politicisation has been described as necessary to overcome the policy gridlock that hinders policy change in the EU and fosters policy innovation (Hix and Bartolini 2006). However, this change, particularly the evolving role of the Presidency vis-à-vis the other Commissioners, has been a longer-lasting process. Starting with the Maastricht Treaty, the European Parliament was given the role of confirming the appointment of the Commission (Egeberg, and and Trondal 2014), the 2014 election's informal *Spitzenkandidaten* procedure (Pansardi and Tortola 2022), and Jean-Claude Juncker's (2014) and Ursula von der Leyen's (2019) announcements of their presidencies as highly political and geopolitical, respectively.

Nevertheless, different EC officials have confirmed the profound change brought by the von der Leyen Commission's more centralised structure (Interviews 1, 2 and 3). One of these changes is the establishment (during von der Leyen I) and multiplication (from three to five EVPs during von der Leyen II) of the position of Executive Vice-President (EVP). Besides signalling the Commission's priorities more strongly (Bürgin, 2023), this has also led to a more hierarchical structure, that, with additional titles, can be used as a bargaining chip by offering them to factions whose support is needed without giving them too much additional power (Interview 2, 39:59). The official also pointed out that the appointment of relatively junior candidates and the competition between the EVPs and Vice-Presidents could be a way for those at the top to consolidate their power, as ultimately the President has to make the decisions (Interview 2, 42:50).

In terms of industrial policy, the presidential structure of the von der Leyen Commission has enabled greater signalling, extending the Commission's power over legally binding texts. An example is the aforementioned 40% benchmark in the NZIA for domestic production, which is not legally binding. However, as an EC official pointed out, after it was used prominently in publications, investors started referring to it as the 'Magic 40', and enabled them to mobilise additional financing (Interview 1, 57:02). The Commission's increased centralisation is also reflected in the growing use of 'acts' to refer to significant legislative proposals. While this informal terminology does not accelerate the legislative process itself, it does enable prompt political action in response to certain challenges (Interview 1, 58:55).

These changing dynamics within the Commission as a whole have likely led to different levels and speeds of change between Directorate-Generals. Due to the low number of interviews, it is not possible to make wider generalisations, but different degrees of politicisation are still visible between DG GROW and DG COMP: While officials from DG GROW talk substantively about strategic goals and policy formation and influence (Interviews 1 and 2), officials from DG COMP portray their Directorate-General as a purely bureaucratic institution focused on aid, stating that 'policy objectives for the measures they are not for us to decide' (Interview 2, 01:15) and that changes to the rules are only temporary exemptions for urgent emergencies (Public Interview 2, 17:01).

DG COMP is particularly often portrayed as conservative in its adherence to liberal values (Caffarra 2024), which is also reflected in its initially critical perspective on new initiatives such as the NZIA (Interviews 1–3). Similarly, DG TRADE was sceptical about the non-price criteria for renewable energy auctions and public tenders, as these could potentially discriminate against foreign suppliers. The manner in which they were implemented, particularly with regard to China, clearly diverged from previous trade policies (Interviews 1 and 2). Unlike these 'incumbents', DG GROW appears to have used the new policy frameworks and focus on industrial policy to increase its importance (Interview 2, 15:00). Officials from DG GROW do not attribute these new ideas to a change of personnel in the Commission (Interview 1, 52:41; Interview 2, 43:48), but rather to the changing context that enabled such shifts and to the fact that DG GROW adapted to them more quickly than others (Interview 2, 11:48).

## Exploring further challenges in EU Industrial Policy Making

Based on the previous reconstruction of the emergence of the Net-Zero Industry Act, it is possible to derive several challenges for future industrial policy-making at a European level.

### Issue: Legitimacy

First, as previously established, the legal basis for central industrial policymaking in the EU is limited. This has led to the use of Article 114 TFEU, which allows harmonising measures for the single market, as the basis for the Net-Zero Industry Act and the Critical Raw Materials Act. However, the implementation of the resilience criteria (Article 26) in the final version of the NZIA creates seemingly more fragmentation of the single market than harmonisation, as it enables national 'gold-plating' of European regulation. Member states are free to choose whether to implement the criteria as pre-qualification or award criteria, and for how many tenders above a certain threshold.

The Member States (through the Council) primarily pushed for this flexible implementation, demonstrating their significant influence in the policymaking process. Ironically, the EU Commission's limited authority in this field has therefore (through the introduction of a weakened implementation) resulted in an outcome (fragmentation) that calls the legal basis used to circumvent this limited authority into question (Article 114 TFEU instead of Article 173 TFEU).

This exemplifies one of the issues arising from such policy-making through the backdoor, even if it is somewhat foreseen in Article 173(3) TFEU, which allows industrial policy objectives to be pursued through different legal bases. For the EU's ambitious strategic objectives to be achieved through a central industrial policy, the codification of existing de facto competences would likely require a treaty change (Dermine and Patrin 2024).

## Issue: Focus

The inflation of the technology list in the NZIA, from eight data-driven items to 19 politically bargained ones, has already been laid out in detail. This process is indicative of the challenges involved in implementing market-steering, vertical industrial policy in a multilateral space where many stakeholders have a say and, through coalitions, also hold veto power.

However, the example of the NZIA also shows how the Commission is using various creative strategies to maintain some degree of control:

*First*, through the use of a delegated act to introduce new items, stretching the mandated task of clarification (see 5.4.).

*Second*, through the practical creation of a legal hierarchy with the use of an extraordinary status for selected, strategic projects, raising some concerns about the equality before the law (see 5.4.).

*Third*, through the advancement of unprecedented discourse such as the production quotas, which are not legally binding, and thus avoid the contagious terminology of local content requirements that could spark political conflicts, but create a reference with concrete implications (see 5.4. & 6.2.4.).

*Fourth*, through the strategic, pre-emptive depoliticisation of the process. Until the delegated act, there was no explicit mentioning of China, additional financing has only been introduced as a future intend, and a discussion about contagious issues such as the energy mix of countries (through the choice of supported technologies) had been avoided.

*Fifth*, and lastly, through the proactive creation of solutions for Member States with the intend of keeping a certain control. As one official reported, the Commission implemented a website that member states could use to gather applications for strategic projects in the NZIA. This provision was not required by the regulation, but was specifically created so that the Commission could monitor applications and projects that would otherwise have remained unknown to it. Although they were not obliged to do so, most Member States ended up using the website because it was easier than creating their own solution (Interview 1, 41:01).

These attempts to maintain focus in the face of the inherent difficulties of a multilateral system with limited competence raise important legal and political questions that could jeopardise the sustainability of such regulations. However, they appear to be the only options for the Commission to extend its reach under the current mandate.

## Issue: Approach

Lastly, there is a more fundamental point to be made about the approach to industrial policy following the geo-dirigist shift. The NZIA is both a classic market-creating instrument, striving to build a market for clean tech in Europe by (allegedly)

harmonising market conditions, and a market-directing instrument, being selective about the sectors it supports.

From a purely 'industry-building' perspective, this dirigiste, top-down approach can be questioned, as it contrasts with the prevailing views in economic literature. For example, Aigner and Rodrik call for a more bottom-up industrial policy that emerges from dialogue between the public and private sectors, one that 'eschews ex ante selection of activities to promote or policy instruments to utilize' (2020, p. 192). Allan and Nahm (2025) point to the European Technology and Innovation Platform on Batteries (ETIP Batteries) as an example of such an approach. Here, the political entity's role is one of 'brokering' (cf. Di Carlo and Schmitz, 2023) a European research agenda between industry and research organisation actors, facilitating connections with investors in R&D projects.

As public consultations and stakeholder engagement are fixed parts of EU policymaking, this interaction with industry was naturally part of the process. However, it also highlights the limitations of this theoretical collaborative approach. As one official from DG COMP noted, the same industries that initially requested the NZIA were later trying to block its application once some conditionality was introduced (Interview 3, 13:02). Arguably, these approaches are also designed to facilitate coordination and maintain openness in the face of technological uncertainty, thus pursuing different objectives to an invasive, directed industrial policy driven by concerns about security of supply and protection from unfair competition.

Surprisingly, a term barely found in research on changes to industrial policy regimes is economic nationalism. In many cases, new instruments are portrayed as 'market-fixing' approaches that reflect the 'nature of Europe's regulatory state' (Di Carlo & Schmitz, 2023, p. 2064). In light of the shift towards favouring local and reshored industries, self-sufficiency, subsidies and limitations on foreign investments — all of which are considered to be typical components of economic nationalism (Levi-Faur 1995) — further studies could examine whether the neoliberal paradigm has evolved into one of economic nationalism, at least within certain parts of the Commission. As evidenced by the interviews in this thesis, such a divide in fundamental economic theories could possibly exist most between the more market-based DG COMP and the more interventionist DG GROW.

However, the widespread idea that modern industrial policy is less top-down and more about 'the government working in partnerships with the private sector to solve key bottlenecks' (Juhász and Lane 2024, 7) appears to neglect an important risk inherent in some of the new EU industrial policy approaches described: corporate rent-seeking.

The Net-Zero Industry Act offers increased corporate welfare through derisking, both regulatory — via the extraordinary legal status of strategic projects — and financial, e.g. through risk-sharing mechanisms provided by the EIB. Such provisions risk 'socializing losses but privatizing profits' (Mertens and Thiemann 2023, 79), with losses of both a financial and non-financial nature (e.g. social externalities not accounted for through expedited procedures).

Additionally, state aid provisions in particular have previously been criticised for creating opportunities for 'jurisdiction shopping', whereby companies select the most favourable jurisdiction for their business, for example on the basis of tax benefits or subsidies (Georgallis, Albino-Pimentel, and Kondratenko 2021). An example of such behaviour is the case of the (now defunct) Swedish battery maker Northvolt, which in 2024 received a pledge of over 900 million euros to build a new factory in Germany rather than in the US. This followed the German government's decision to match and exceed the subsidies that the company would have received under the IRA in the US, a mechanism implemented through the TCTF (Packroff, 2024).

Kampourakis (2025) suggests that such inverse effects could be avoided through stronger democratisation of public investment decisions. In the case of the NZIA, a democratic investment board would make such decisions, rather than the initially suggested technocratic selection process of technologies, which is probably best conceptualised by the theory of regulatory capitalism, where decision-making is moved from political to technocratic decision-makers, or the industrial-political process that evolved in the end, which could be criticised as a form of political capitalism<sup>19</sup> (Majone, 1997).

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<sup>19</sup> Particular provisions such as those for nuclear technologies, where the French company Framatome is the only one in Europe that produces them.

## 7. Limitations

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There are several limitations to the assumptions, theories, observations and methodology applied in this thesis.

*First*, this research only provides a snapshot of the ongoing institutional changes to EU economic activism. Several reforms that have already been proposed, such as the Clean Industrial Deal, mergers regulation reforms, and outbound foreign direct investment (FDI) screening mechanisms, fall outside its temporal scope. While many changes are likely to have some systematic validity, the results of this thesis are limited to the sectoral and temporal frame employed.

Adding to the issues of temporality, attempts at market-steering industrial policy at a European level are a relatively novel approach. As such, drawing comparisons with historical cases is naturally difficult. In the case of the solar industry, therefore, the object of comparison is the absence of measures apart from protective tariffs. Similarly, as a 2024 regulation, the actual outcome of the NZIA remains untested. The analysis therefore focuses on legislative intent and institutional dynamics rather than policy outcomes.

*Second*, there are several theoretical constraints. Although Mahoney and Thelen's framework has previously been used to describe institutional change in the EU (e.g. Bocquillon, Brooks, and Maltby 2024; Cini and Czulno 2022), it is likely to be inadequate for observing changes in a multilateral environment due to its rather static nature. This is partly demonstrated by the difficulty in hypothesising the expected modes of change based on the legal foundations. Discretion and veto power dynamics are context-dependent and are often shaped by soft power negotiations and situational crises (e.g. the TCTF following the invasion of Ukraine) rather than by static institutional characteristics.

Furthermore, the macro focus of this comparative study means that the Commission is treated as a monolith in parts, as a single rational actor striving to advance its position in the European system. While there might be some truth to this under the aforementioned politicisation and centralisation of power in the Commission in recent years, it means that the dynamics of power within the Commission itself are not examined sufficiently. According to Skocpol and Pierson (2002), the combined effects of institutions and processes must be examined in parallel because an actor disadvantaged by one institution may still hold an advantaged status with respect to a different institution. Further research could focus on the relations and dynamics between the different DGs and other actors, such as the Council or individual Member States. For example, it could be hypothesised that, based on its relatively limited mandate and autonomy, DG GROW has traditionally had less influence in the Commission than DGs TRADE or COMP. However, in an attempt to improve its position, it has exploited its lack of rules to offer new solutions to Member States.

Additionally, I built on the assumption that changes in global conditions have led to a shift in EU geo-industrial politics, resulting in a rediscovery of industrial policy. This shift is complicated by the 'geoeconomic paradox', whereby decades of market liberalisation and privatisation have made it much harder for the EU to act. However, authors such as Thatcher (2014) have argued that even during the period from the 1990s to the 2008 financial crisis, national states never actually conceded all the tools for guiding private companies. Instead, they relied on partial ownership ('layering' old institutions with new rules), market structuring through mergers and acquisitions, and strategic privatisation to continue steering industrial policy. While such different basic premises could introduce additional nuances, the main period that this thesis focuses on falls after this period, concentrating on EU policies rather than national ones.

*Third*, there are different limitations relating to methodological issues. By focusing on crisis-driven cases such as the demise of the European solar industry and the NZIA, this thesis contributes to a wide body of literature that connects advances in European integration to external challenges. However, although I use a theoretical framework that acknowledges endogenous and exogenous drivers of change to explain a potential ideological shift within the Commission, this approach may still overemphasise disruptive shifts driven from outside. Further research into strategically important policy areas that were not subject to as many parallel crises, such as the pharmaceutical sector, could provide valuable comparisons.

Lastly, the time constraints of this thesis and unfortunate political occurrences<sup>20</sup> have led to reduced number of interviews to verify the hypotheses that emerged through process tracing and to generate additional data. Additionally, interviews with representatives of member states or the regulated industries could also have provided further insights.

## 8. Conclusion

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This thesis sought to explain how the turn in economic activism by the EU, as postulated by several authors, is enacted in practice.

A comparison of the rise and fall of the European solar industry and the creation of the Net-Zero Industry Act revealed significant changes in the European Commission's strategies for guiding industry towards its economic and geopolitical goals. This is evident in the stronger focus on ex-ante rather than ex-post instruments, the shift from broad, horizontal measures to vertical ones, and the expansion into less typical policies, which, due to their technical nature, are less politicised and moralised.

The second comparison described how these wider shifts have translated into concrete change dynamics within the various policy sectors under the Commission's remit. Due

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<sup>20</sup> The announcement of comprehensive tariffs by the US in April 2025 led to the cancellation of several already planned interviews with officials from DG TRADE.

to the rigid nature of EU treaties and the delicate balance of competences between institutions, it was assumed that such changes would occur through gradual change. While this theoretical framework proved suitable for describing developments in different EU policy areas, the initially hypothesised modes of change could only be partially confirmed through process tracing and interviews. In practice, the two determining dimensions — discretion within the institution and veto possibilities within the political context — have proven difficult to define, being subject to great situational contingency. Additionally, different modes of change have often been found to operate in parallel, with one opening the way for the next, emphasising the underlying assumption of path dependency in historical institutionalism. Existing research has not yet adequately explained the potential long-term consequences of these gradual changes, as the transformations they produce raise questions about their stability, sustainability and legitimacy.

Lastly, several challenges to further advances in the pursuit of the EU's geopolitical-industrial strategies can be identified. These include questions about legal legitimacy and the increasingly vertical approach that the EU has adopted, which does not necessarily align with recommendations in the pertinent economic literature. Given that, under its new approach, the EU is pursuing not only economic but also geopolitical objectives, this is however not necessarily surprising. The difficulty of enacting targeted change in a multilateral environment and the creative ways in which the Commission counteracts this dilution were also demonstrated.

The normative clashes provoked by layering new interventionist discourse and policy instruments onto existing frameworks based on neoliberal ideas are also likely to alter intra-institutional dynamics within the Commission, between different DGs and ranks. Yet, the political instrumentalisation of the market seems not to have challenged the primacy of private profitability, creating potential new openings for corporate welfare. As geo-dirigisme evolves further through policy changes, continued research is crucial to understanding its interplay with private rent-seeking.

With its wide focus on three policy sectors, this thesis builds on the systematic approach to industrial policy demanded by both politicians and academics (Aiginger and Rodrik 2020; Vestager 2024). The gradual development identified only becomes necessary because more substantive change to the conditions enabling joint European economic activism remains difficult. The Commission employs various methods to break this deadlock — albeit with added fragility and contestation that could hinder its success in the long run.

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# Appendix

## List of interviewees

|                           |                                                                                                                                                                                             |            |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Interview 1</b>        | EC Official, DG GROW                                                                                                                                                                        | 11.04.2025 |
| <b>Interview 2</b>        | EC Official, DG GROW                                                                                                                                                                        | 14.04.2025 |
| <b>Interview 3</b>        | Two EC Officials, DG COMP                                                                                                                                                                   | 16.04.2025 |
| <b>Public Interview 1</b> | David Rodríguez Colmenero, DG GROW and Nienke Buisman, DG RTD in <i>Bruegel Conference - China's Innovation and Industrial Policy: Achievements, challenges and consequences for Europe</i> | 13.06.2024 |
| <b>Public Interview 2</b> | Ben Smulders, DG COMP in <i>EC Webcast: Let's talk competition - State aid control and Industrial policy: irreconcilable or complementary?</i>                                              | 30.01.2024 |