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US-China Relations and the Competitive Turn of Green Industrial Policymaking

JONAS NAHM

The past two decades have witnessed a resurgence of industrial policy – government interventions in the economy to produce outcomes in service of policy goals that markets would not yield on their own (Nahm 2022b). This resurgence has been evident in sectors related to decarbonization, where I refer to such policy interventions as "green industrial policy." Governments across developing and advanced industrialized economies have used such government interventions to combine climate and economic goals by trying to attract clean technology supply chains, including the manufacturing of wind turbines, solar panels, electric vehicles, and energy storage technologies.

Green industrial policies have long been deployed in the European Union and China, economies with statist policymaking traditions that were more amenable to government interventions in the economy to advance policy goals. But green industrial policies have also and increasingly been used in liberal market economies that long advocated laissez-faire approaches to governing the domestic economy. In the United States, one recent example is the Inflation Reduction Act (IRA) of 2022, which introduced a range of green industrial policy measures to accelerate the domestic development of clean energy industries, including using local content requirements. And the IRA is not the first US foray into green industrial policymaking. It was preceded by decades of tax breaks and regulatory incentives to help domestic clean energy sectors compete with fossil fuels (Nahm 2022b).

In this chapter, I examine the resurgence of green industrial policymaking, focusing in particular on the US response to China's dominance in clean energy sectors. I make three central points. First, I argue that the political logic of the energy transition makes industries related to decarbonization particularly prone to industrial policy interventions. Governments attempt to build political coalitions behind climate policy by promising new sources of growth and employment because the transition to the net zero economy requires vast public investments and subsidies (Nahm 2021). Second, I show that although governments in the United States and

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Europe have long promised the development of domestic green industries due to such intervention, they have rarely been able to attract desired segments of global supply chains into domestic economies. Instead, clean energy sectors have generally relied on China for critical aspects of their manufacturing and raw materials production. Third, I make the case that this discrepancy between political promises and empirical results has fueled a politicization of industrial policy interventions. This has created more substantial incentives for firms to reshore production in critical industries, including in the United States. Such calls for reshoring likely understate the extent to which the world must continue to rely on Chinese manufacturing capacity for clean energy technology until alternative supply chains are established elsewhere. Perhaps more importantly, the increasingly protectionist justifications of industrial policy put such government measures in explicit tension with the need for global political collaboration to meet transnational decarbonization goals. Politicizing low-carbon industrial policies may create new economic coalitions behind climate policy if they indeed yield growing domestic supply chains and the associated jobs. The protectionist focus of such policies could also undermine the global supply chain arrangements required to decarbonize and threaten the basis for international political cooperation on climate goals. In contrast to existing literatures on climate politics that have correctly pointed to the importance of politicization to overcome entrenched corporate interests in fossil fuel industries, I suggest that politicization of green industrial policies can also have unintended consequences for the cross-national political and economic ties needed for long-term decarbonization (Paterson, Tobin, and VanDeveer 2022).

The chapter proceeds by highlighting the growing economic ambition behind climate policy, which is rooted in the political logic of promising growth in return for investments in decarbonization. Using the example of the United States I then show that such green industrial policies have in the past not prevented a growing reliance on China for the production of clean energy technologies. The final section of the chapter examines the dilemma resulting from this divergence of political promises and economic results. I suggest that governments have responded by inserting protectionist elements into green industrial policymaking, and conclude by reviewing the prospects of decarbonization under such a fragmented green industrial policy regime.

15.1 The Political Logic of Industrial Policy

Since the early 1990s, markets for low-carbon energy technologies have grown dramatically. According to the International Energy Agency, global investment in clean energy exceeded USD 1.4 trillion in 2022. Growing global spending on renewable energy technologies made up a significant fraction of such expenditures,

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but investments in grids, storage, and energy efficiency, and, more recently, rapidly accelerating sales of electric vehicles, also contributed to growing global markets for low-carbon technologies (IEA 2022).

Before rapidly falling costs for some clean energy technologies made them competitive with fossil fuels, growing markets for such technologies relied on government support, primarily through subsidies and regulatory incentives. Such measures included premiums paid to wind and solar energy generators, tax credits for purchasing electric vehicles and investments in energy efficiency, and a range of regulatory mechanisms to encourage utilities and car manufacturers to use and sell a growing share of low-carbon technologies. Due to the increasing expansion of clean energy markets and the significant fiscal investments and regulatory measures needed to maintain them, many governments were unsatisfied with being mere consumers of clean energy technologies. Instead, governments hoped that green industrial policies would allow them to build domestic industries that could invent, produce, and ideally export clean energy technologies in addition to deploying them domestically (Nahm 2021). In many economies, green industrial policies – including direct subsidies, tax breaks for manufacturers, local content requirements, and research and development (R&D) funding – were deployed to attract domestic clean energy supply chains.

A broader political strategy drove the connection between the adoption of clean energy technologies and the potential economic advantages in the form of industrial growth and local manufacturing activities. As part of government efforts to reduce greenhouse gas emissions, green industrial policies that offered the prospect of boosting employment and economic development were appealing to policymakers. These policies could grow political alliances supporting decarbonization beyond the core group of environmental advocates (Aklin and Mildenberger 2020). Such political support was significant for policies that entailed large public expenditures and threatened the business models of existing fossil fuel-based industries. But the promise of growth and employment also helped justify the additional financial burdens for private citizens from the energy transition, including for consumers of electricity asked to pay surcharges to offset the cost differential between traditional energy sources and higher-priced wind and solar technologies. Policies that pursued the dual objective of achieving emissions reductions while creating new sources of economic activity were easier to implement politically, not least because they expanded the political coalition in favor of decarbonization (Breetz, Mildenberger, and Stokes 2018; Meckling and Nahm 2021; Meckling et al. 2015). The growing use of green economic goals was a political tool to achieve policy stability in a climate policy arena historically shaped by conflict between powerful vested interests in the fossil fuel sector and a growing environmental movement.

The increasing use of green industrial policy led to a rise in state interventions in the economy, aimed at bolstering domestic clean energy supply chains. Governments combined established R&D support policies with subsidies to establish renewable energy markets, often specifically tied to local content regulations and other incentives to attract local industrial activity and manufacturing jobs. In the United States, policymakers believed that critical market failures for new technologies were primarily in basic R&D, where firms, if left to their own devices, would likely underinvest in these innovations. Thus, federal and state governments provided regulatory support and subsidies to create markets for these applications in sectors like clean energy, where new technologies were not yet competitive with the ones they intended to replace. The assumption was that public spending on technology development, combined with market support, would yield the emergence of new industrial sectors.

The desire to establish internal green energy supply chains became notably apparent in the United States following the worldwide economic crisis of 2009. The US government responded by implementing stimulus packages to provide unparalleled support to the local renewable energy industry. The 2009 American Recovery and Reinvestment Act (ARRA) was a critical piece of legislation in this effort, offering a variety of measures to facilitate this shift. This included a unique tax credit specifically aimed at clean energy production, along with loan assurances for wind and solar equipment producers. Furthermore, it funded training programs to prepare workers for the burgeoning clean energy sectors (Mundaca and Richter 2015). Government assets were purposefully utilized to boost development and promote economic restructuring by backing certain industrial fields. The green industrial policies launched during President Barack Obama's tenure were built upon widespread backing for the wind and solar industries at the state level. This support was prevalent as most states had enforced various renewable energy requirements. Such investment was frequently defended on the grounds that it would lead to job creation and economic expansion (Stokes and Warshaw 2017).

Other governments similarly intervened in energy markets to create new industrial sectors. The German government, for instance, explicitly justified continued support for wind and solar sectors with the ability of the domestic economy to capitalize on the "tremendous export market that will permanently secure growth and employment" (Bundesregierung 2005: 19). The Federal Ministry for the Environment projected in 2008 that, by 2020, green industries, encompassing renewable energy, recycling, and energy efficiency technologies, would outperform the German auto sector in terms of their impact on the country's gross domestic product (Bundesministerium für Umwelt 2008: 6).

China's public support for wind and solar energy was primarily driven by its industrial development objectives. The country viewed renewable energy sectors

as potential export industries, aligning with its broader economic development strategy. This emphasis was evident in 2010 when renewable energy sectors were specifically listed as "strategic emerging industries" (SEIs). The SEIs sought to grow industrial sectors central to enhancing national competitiveness by providing preferential policy treatments, including low-interest loans, tax breaks, and R&D support. Under the direction of the central government in Beijing, companies were encouraged to reduce their reliance on international technology transfers. Instead, they were urged to focus on filling the remaining gaps in domestic supply chains, including the production of advanced manufacturing equipment essential for renewable energy technologies (US-China Business Council 2013). The 12th Five-Year Plan for the solar photovoltaic (PV) industry, part of China's policy of setting broad economic goals in five-year increments, called for 80 percent of production equipment to be manufactured domestically by 2015 (National Energy Administration 2011). The central government in Beijing aimed to capitalize on the emergence of new clean energy technologies as a strategic opportunity to secure a foothold in upcoming industries.

The growing promise of decarbonization technologies allowed governments to promise economic returns for investments in decarbonization, making it easier to use the vast public resources required to implement meaningful climate policy and potentially growing the political coalition of climate supporters.

15.2 Domestic Policy and the Emergence of Global Supply Chains

Despite government attempts to strategically position domestic economies in clean energy sectors, few countries were able to build wholly domestic supply chains for such technologies. Governments were able to help domestic firms enter some segments of global clean energy industries. Still, most countries remained locked in a division of labor in which major products and components had to be imported from abroad. China, in particular, came to dominate clean energy supply chains (Nahm 2021).

The contrast between government investments and the relatively constrained progress in developing domestic supply chains was especially notable in the United States, although similar patterns were observed in other regions worldwide. The United States held the position of being the largest investor in clean energy R&D and maintained a technological advantage in numerous critical areas. US companies continued to spearhead the advancement of cutting-edge technologies aimed at achieving more cost-effective and efficient decarbonization. These technologies included next-generation solar technologies, advanced battery chemistries, novel building materials, smart grid technologies, and sophisticated software for managing complex energy systems (Sivaram et al. 2020). Yet such new technologies needed to be commercialized and manufactured at scale, and little of that occurred domestically.

US policies focused on clean energy sectors under the assumption that market failures were present in upstream R&D, as well as downstream market demand creation. However, these policies did not place an equal emphasis on segments of the clean energy supply chains that lacked sufficient domestic support, particularly in manufacturing. The challenges in scaling up domestic production of clean energy technologies were indicative of long-term structural changes in the US economy. The decline of the manufacturing sector over time had raised concerns about the country's economic competitiveness and the ability of American firms to maintain their global leadership in developing new technologies without strong capabilities in commercialization and production on home soil. During the 1980s, the United States faced the fear of losing its competitive edge to Japan. Although Japan's subsequent economic crisis and the US IT boom in the 1990s diverted attention from domestic manufacturing issues, the underlying structural causes contributing to a diminishing share of high-wage manufacturing employment were never fully addressed (Berger 2013). China's entry into the World Trade Organization (WTO) in 2001 amplified import competition, yet the decline in the domestic manufacturing economy was not solely a result of this development. There were also other internal factors that contributed to this decline, and these factors preceded China's emergence as a major player in the global economy (Bonvillian 2017).

Despite significant investments, both public and private, in R&D that allowed the United States to maintain its leadership in pioneering innovative clean energy technologies, changes in the economy weakened the once strong connection between innovation and production. This link was crucial in translating technological breakthroughs into tangible industrial outputs. The structure of the domestic economy changed significantly over time, resulting in a considerable reduction in the number of manufacturing firms equipped with the capabilities to effectively scale up and produce new products and technologies. Over the years, multinational corporations in the United States increasingly turned to outsourcing and offshoring noncore production activities, as financial markets rewarded larger firms for focusing on their core competencies since the 1970s. The domestic manufacturing sector also encountered challenges in obtaining financing to move technologies from the research phase to full-scale production, particularly in emerging sectors like clean energy (Bonvillian 2017).

In clean energy markets, the United States had difficulty translating its position into tangible industrial outcomes, even though the widespread adoption of wind and solar technologies resulted in substantial service-sector industries for installation and maintenance. The United States achieved this position through effective policy interventions aimed at promoting the domestic deployment of clean energy technologies, leading to its emergence as one of the largest global markets for solar PV, wind power, and eventually electric vehicles. In cumulative solar installations, the United

States closely followed China and the European Union. Moreover, in 2021, it attained the third-largest market share for new solar PV installations. Similarly, in the wind industry, the United States positioned itself as the third-largest global market, ranking behind China and the European Union (IRENA 2021). At the same time, the United States became the third-largest market for electric vehicles (IEA 2021).

Nevertheless, the expansion of domestic markets for these technologies did not yield a parallel increase in domestic production capacity. Despite significant investments from the public sector in R&D and a commitment to supporting clean energy markets, sectors like wind, solar, and batteries in the United States continued to be reliant on imports for critical components. Among these sectors, the wind industry demonstrated the strongest domestic position, with the United States being one of five major global economies capable of producing all the essential components needed for modern wind turbines – nacelles, blades, towers, generators, and bearings. International and domestic turbine manufacturers set up production facilities within the United States, capitalizing on the advantage of proximity to end-user markets. Producing heavy components, such as nacelles, domestically resulted in substantial cost savings due to the expenses associated with transportation. However, even in the wind industry, the United States struggled to match the local content rates achieved by its European and Asian competitors. In 2019, wind turbine equipment imports into the United States accounted for a substantial USD 2.6 billion, with the largest portion comprising wind turbine blades and hubs from Brazil, China, and India. Turbine towers, which have long been a subject of trade conflicts with China, were primarily imported from India, Indonesia, and Vietnam. Estimates indicated that only about half of the manufacturing value of a wind turbine was generated domestically, which paled in comparison to Europe and China's local content rates of more than 90 percent for similar turbines (Bloomberg New Energy Finance 2021).

Until recently, the solar PV industry in the United States lacked the production capacity for key components such as ingots, wafers, or cells used in crystalline silicon solar PV modules. These modules represent the prevailing technology in the industry and are anticipated to remain crucial until 2035. As the cost of crystalline solar PV technologies significantly declined by 85 percent over the past decade, US companies that had focused on developing newer thin-film solar technologies faced challenges in penetrating the market (Hart 2020). Here, the United States possessed some domestic manufacturing capacity for producing thin-film modules, which comprised 16 percent of domestic solar demand but only accounted for 4 percent of global solar PV markets. One-third of thin-film modules installed in the United States were also manufactured there (US Department of Energy 2022b). The US solar industry supported a workforce of more than 230,000 individuals, with the majority employed in service-sector roles focusing on installation and maintenance. Despite nearly a decade of trade remedies concerning Chinese modules,

these jobs relied heavily on imported technologies. Until recently, approximately 97 percent of the silicon wafers, the primary input for manufacturing solar PV cells, were produced in China. Moreover, Chinese firms operating in Vietnam, Malaysia, and Thailand manufactured silicon solar cells to produce solar PV modules intended for the US market. For the limited share of modules produced domestically, nearly two-thirds of the value was attributed to China due to the necessity of importing raw materials and essential components (US Department of Energy 2022b).

Similar to the solar industry, the battery sector also relied on technologies that were initially developed, at least in part, in the United States but have now shifted primarily to other regions. Aided by their own set of green industrial policies, Chinese battery manufacturers steadily improved their technological capabilities and expanded their dominance in production capacity, particularly for lithium-ion batteries extensively used in electric vehicles. China secured significant control over the production and refining of raw materials, essential for core material inputs. Furthermore, it bolstered its position as the major producer of subcomponents crucial for battery manufacturing. In comparison, the United States accounted for less than 1 percent of the global production capacity for cathode and anode materials, merely 3 percent for separators, and 7 percent for electrolyte production. China emerged as the dominant player with 63 percent of cathode manufacturing, 84 percent of anode materials production, 66 percent of separator production, and 69 percent of electrolyte production. Despite hosting 13 percent of the world's lithium-ion cell manufacturing capacity, largely attributed to Tesla's domestic investments, the United States remained highly reliant on imported subcomponents. In a remarkable feat, China's battery industry controlled approximately 80 percent of global lithium-ion cell production (US Department of Energy 2022a).

Although governments in the United States and Europe long promised the development of domestic green industries as a result of state interventions in the economy, they were not always able to attract the desired segments of global supply chains into domestic economies. Instead, clean energy sectors frequently relied on China for critical aspects of their manufacturing and raw materials production (Davidson et al. 2022; Nahm 2022a). The difficulty of building domestic clean energy industries threatened to undermine the key policy goal of achieving policy stability by expanding the political coalitions in support of decarbonization. High import quotas played into the hands of climate critics, who had long argued that climate policy is bad for the domestic economy.

15.3 The Politicization of Green Industrial Policy

China's rapid rise in clean energy sectors – and the large gaps in supply chains in Europe and North America – fueled a politicization of policies intended to

promote the energy transition. Politicization in this context refers to the explicit use of policy tools that upend existing supply chain arrangements to favor domestic production. Industrial policies that long intended to forge the development of domestic clean energy sectors were now increasingly accompanied by trade conflict and other disputes with nations that were also trying to spur the development of domestic clean energy industries.

Governments and industry associations accused China of illegal subsidies and other policy practices that violated trade rules. More generally, the use of industrial policies to forge the development of domestic clean energy sectors by governments worldwide created considerable tensions in a global trading system ostensibly built around principles of equal treatment and nondiscrimination. The perhaps most controversial measure was the introduction of local content requirements, which, dating back to the early 2000s, were used in economies ranging from Canada to China to make eligibility for domestic subsidies conditional on local production. Local content requirements led to several trade disputes involving a range of different economies. The United States filed complaints against China and Japan, the European Union filed complaints against Canada, and reciprocal complaints were filed between the United States and India (Lewis 2014). Other interventions, such as domestic subsidies for manufacturing businesses and different types of financial support for domestic firms deemed illegal under WTO rules, also caused widespread disputes and led to a series of antidumping and countervailing duty measures to level the playing field for domestic producers (Meckling and Hughes 2017).

Simultaneously, trade policy took center stage as a pivotal instrument in green industrial policymaking, especially in the United States. The implementation of trade policy arose as a reaction to China's increasing control over supply chains for clean energy technologies, including solar, wind, and battery storage. The US government initiated trade measures on several Chinese imports to offset China's prevailing dominance, commencing in the mid 2000s. The dynamics of trade within the clean energy industry highlighted conflicting interests between firms seeking domestic manufacturing and a service sector prioritizing installation and maintenance, which continued to heavily rely on Chinese imports (Meckling and Hughes 2017; Nahm 2022b).

A noteworthy case in 2011 involved a group of US wind turbine tower manufacturers filing a trade grievance against Chinese tower companies. The US International Trade Commission subsequently approved antidumping tariffs in 2013. While US-based tower manufacturers welcomed this move, those in the installation and maintenance sector expressed concerns that these trade remedies might lead to higher prices and hinder the deployment of clean energy technologies. Similarly, in 2010, a coalition of US solar manufacturers successfully pursued trade remedies against Chinese solar panels. However, the "Coalition for

Affordable Solar Energy" failed in its attempt to prevent the implementation of these remedies, which were eventually enforced in 2012. In response, Chinese manufacturers adjusted their supply chains to include Malaysia and Taiwan, prompting the US Department of Commerce to expand the scope and coverage of the tariffs. Consequently, the Solar Energy Industries Association publicly aligned with installers in opposition to manufacturers (Nahm 2021). Despite facing opposition, the imposition of trade remedies was deemed indispensable and persisted during the Trump administration. These measures were designed to address Chinese subsidies and the adverse effects on US solar cell manufacturers caused by artificially low-priced Chinese solar cells. However, domestic solar installation and maintenance companies expressed concerns that these remedies might lead to higher prices and subsequently reduce demand. Significantly, the impact of these trade remedies on downstream installation and maintenance sectors was not originally included within the investigative scope of the US Department of Commerce and the US International Trade Commission (Groom 2019).

In 2021, the Biden administration subsequently reviewed critical industrial sectors' domestic supply chains to scrutinize the dependence on Chinese inputs for essential technologies. The review aimed to evaluate the economic and security implications of such reliance (Igogo 2022). The tariffs imposed on Chinese clean energy goods due to prior trade investigations remained in effect during the Biden administration. They were intended to stimulate the relocation or broadening of supply sources beyond China. Nonetheless, other measures that would enhance domestic companies' competitiveness, such as public investments in vocational training and improved financing for demonstration, commercialization, and manufacturing, were not implemented.

In conjunction with trade policy, various other measures were taken to actively facilitate the reshoring of manufacturing from China. Under the Biden administration, the Defense Production Act (DPA) played a significant role in addressing domestic supply chain risks linked to national defense and security concerns. In particular, the DPA was instrumental in expediting the domestic production of five critical clean energy technologies, such as solar, where the United States had become overly reliant on global supply chains, especially China's dominant role. Through the DPA, the US government provided minimum order guarantees, extended loans to manufacturers, and established domestic content standards, all aimed at bolstering domestic manufacturing capacity (Sherlock et al. 2022).

In conjunction with policies aimed at addressing China's dominant position in clean energy supply chains, several initiatives were implemented that linked support for the energy transition to stringent local content standards. Notably, the IRA, passed in August 2022, played a key role in accelerating the adoption of electric vehicles (EVs) and clean energy within the US power grid. The IRA offered

generous incentives for local production, including a USD 7,500 tax credit for new EVs and a USD 4,000 tax credit for used ones. A significant departure from previous practices, eligibility for these tax credits was now linked to the location of technology manufacturing, with a clear objective of greatly expanding domestic clean energy manufacturing. To be eligible for the full EV tax credit, a minimum of 40 percent of the materials used in the battery had to be sourced and processed in the United States or a country that holds a free trade agreement with the United States (Sherlock et al. 2022).

Additionally, the battery and its components had to be manufactured in North America. Similarly, the IRA provided bonus credits for clean energy technologies manufactured in the United States for investments in and generation of zero-emissions electricity. Tax credits for wind and solar installations, which have long been a core element of US government support for domestic clean energy markets, were extended under the act and now also included local content requirements to encourage the reshoring of clean energy supply chains (Sherlock et al. 2022).

The shift in US policy toward using local content requirements and measures previously opposed by the United States at the WTO sparked competitive efforts to nationalize clean energy sectors in other countries. Canada and the European Union responded with their own industrial policy measures, injecting new capital into clean energy sectors while undermining existing supply chain arrangements that have led to declining wind, solar, and battery technologies costs (McNamara 2023). This marked a departure from past decades; governments now aggressively intervened in global supply chains, using China's dominance in global clean energy sectors to justify a departure from global trade arrangements and growing direct investments in domestic industries.

As governments renewed their efforts to attract clean energy supply chains through trade policy and government spending on domestic firms, they did not always address the institutional reasons that in the past stymied attempts to draw the manufacturing of technologies required for decarbonization. Domestic institutions central to building clean energy economies include supportive financial systems willing to lend to manufacturers, vocational training institutions capable of meeting the workforce needs of the industries governments are trying to build, and R&D organizations supporting (existing) firms entering clean energy sectors, among others. These institutions can complement industrial policies in meeting their objectives. Yet the current resurgence of green industrial policy was not matched with equally ambitious reforms of the institutions governing the domestic economy. The IRA in the United States prioritized the revival of domestic manufacturing. However, it fell short of addressing some of the fundamental structural challenges that in the past have hindered the transformation of public investments in R&D and domestic markets into a thriving and competitive clean energy manufacturing sector.

The competitive turn of green industrial policymaking highlights a central tension between the need to build broader political coalitions behind climate policy to achieve policy stability and the destabilizing effect of undermining existing trade and political relationships. Large investments in domestic clean energy sectors were now becoming increasingly conditional on production locations and supply chain requirements, yet risked alienating trade partners who would eventually have to cooperate on global decarbonization goals. At the same time, the growing use of trade policy and local content requirements threatened to potentially increase the cost and slow the pace of decarbonization, as it entailed replacing and supplementing existing supply chain arrangements while prioritizing resilience over efficiency.

15.4 Conclusion

The resurgence of green industrial policies could potentially upend existing politics of climate change by creating economic and industrial interests that are invested in and are benefiting from decarbonization. Instead of trying to buy off industries invested in fossil fuels, green industrial policies could grow the political coalition in favor of continued decarbonization, thereby shifting the balance of economic interests away from the status quo (Meckling and Nahm 2021). The focus on domestic supply chains in this new generation of green industrial policy follows a political logic: Creating jobs in clean energy sectors – through local content requirements and trade policy – can help build new coalitions behind climate policy, including in areas where climate change has not yet been a priority of voters. In the United States, the IRA is a new chapter not just for US climate policy but also for rethinking the role of the state in taking advantage of economic opportunities in rapidly growing global clean energy sectors. The bill is just the starting point of a much broader industrial transformation for the United States and other economies that have started to emulate the US initiative. Other Western economies have responded by investing in their own clean energy industries to ensure economic gains accrue domestically.

Economists have long warned that industrial policies are prone to capture, can lead to inefficiencies and the misallocation of capital, and trigger rent-seeking behavior on the part of the private sector (Hallegatte, Fay, and Vogt-Schilb 2013). Yet the challenges of green industrial policy may ultimately be less about governments picking the wrong winners than about getting right the domestic and international politics of industrial policymaking. As I have outlined in this chapter, the political logic of industrial policy leads governments to overpromise on industrial policy outcomes in sectors related to decarbonization. Such policies themselves now often directly conflict with the supply chains that have made clean energy technologies cheap and accessible. Trade policies can help the growth of domestic

industries but can also lead to retaliation from other countries such as China, which continue to control key inputs for clean energy supply chains.

Politicizing low-carbon industrial policies could be a political tool to achieve policy stability by creating new economic coalitions behind climate policy through growing domestic supply chains and the associated jobs. But the approach also risks undermining the global economic order required to rapidly decarbonize and threatens the basis for long-term international political cooperation on climate goals. The stakes of balancing politicization and stability have never been higher. Because climate and economic outcomes are now so closely linked in countries that have made support for decarbonization conditional on industrial development outcomes, failing to meet industrial policy goals will jeopardize climate targets as well.

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