June 2026

The Four Pillars of Green State Capacity

By Daniel Driscoll

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Key Takeaways

- **Markets alone cannot deliver decarbonization.** Historic economic transitions have required active state intervention, large-scale financing, and coordinated governance; the green transition is no different.
- **Bureaucratic-institutional capacity matters.** Open democracies, empowered environmental ministries, and skilled public servants help governments adopt, coordinate, and implement climate policy.
- **Macrofinancial capacity is essential.** States need fiscal, monetary, and credit tools—including taxes, subsidies, central bank interventions, public banks, and state-backed lending—to mobilize capital at the necessary speed and scale.

- **Productive-innovative capacity helps green technologies scale.** Entrepreneurial governments can invest, derisk early-stage technologies, coordinate experimentation with firms, and build competitive green industries.
- **Social-protective capacity prevents backlash and harm.** Decarbonization creates losses through higher energy costs, job displacement, and stranded assets; governments need worker transition policies, energy-cost support, and strategies to manage carbon-intensive decline.
- **The four pillars are mutually reinforcing.** Institutions, finance, innovation, and social protection work best together; focusing on only one pillar is a recipe for a slower and more fragile transition.

Executive Summary

Markets alone cannot deliver decarbonization. Historic economic transitions generally required active state intervention, large-scale financing, and coordinated governance. Decarbonization is no different.

Four pillars of green state capacity matter most to decarbonization:

1. *Bureaucratic—institutional capacity*: Open, representative democracies with empowered environmental ministries and competent public servants are more effective at adopting, coordinating, and implementing climate policy.
2. *Macrofinancial capacity*: States must mobilize capital to decarbonize through fiscal tools (i.e., taxes, subsidies, grants), monetary interventions (i.e., green quantitative easing), and public credit institutions that provide long-term, risk-tolerant finance.
3. *Productive—innovative capacity*: Entrepreneurial governments that invest in the green transition, derisk early-stage technologies, and coordinate experimentation with firms are best positioned to nurture competitive green technology sectors.
4. *Social—protective capacity*: Decarbonization generates losses through higher energy costs, job displacement, and stranded assets. Governments must protect consumer energy prices, research and implement worker transition policies, and employ strategies to manage the decline of carbon-intensive industries.

The green transition succeeds only when states deploy all four pillars together.

Introduction

Markets alone have failed to decarbonize the planet. If one considers the history of states and markets, this is not very surprising. While there are periods in which markets have sublimated state action, every historic economic transition has involved states taking an active role in economic affairs. Time and time again, to catch up to the economic advancements of other countries, governments have spent capital and intervened. And the further behind they are, the more capital and intervention they need to catch up. This was universally true, for instance, in the previous century as the United States, Soviet Union, and East Asian states developed

and industrialized (Schwartz 2018). Decarbonization is no different; it represents a global economic transition requiring both capital and intervention for countries to transition and stay globally competitive. The green transition, in short, requires capable states.

And yet, policy debates and popular discourse often obscure this basic insight from social science scholarship. For many years, economists' default advice was that climate policy should be as light-touch and market-friendly as possible. From the 1980s onward, the policy takeaway for too many policymakers has been carbon pricing, a market-fixing instrument (Driscoll 2026): setting a price on emissions and allowing market forces to adapt. More recently, as industrial policy has gained greater acceptance, some remain in denial about just how much bureaucracy is needed to execute decarbonization well. The most famous example is Elon Musk, whose Tesla was a creature of the Department of Energy's Loan Programs Office, and yet he became the face of the so-called Department of Government Efficiency, which cut countless key government programs and, by doing so, ironically increased federal spending (Badger et al. 2025).

Combining the most critical aspects of state capacity is necessary for a holistic and effective decarbonization.

A related shortcoming in other analyses, in both the academic and policy spaces, is the privileging of one attribute of state capacity over another.[1] The Green New Deal framing from US progressive policymakers, for instance, tends to highlight jobs, housing, and expansion of general social policies (Sen. Bernie Sanders 2024). While these are important issues, such messaging often ignores necessary financial and industrial tools. On the flip side, many industrial policy advocates forget the social protections necessary for the green transition, particularly for locales such as coal-dependent West Virginia: What will replace coal jobs, which are some of the best in the region (Tooze 2021)? The truth is, combining the most critical aspects of state capacity is necessary for a holistic and effective decarbonization. But sadly, most perspectives remain fragmented.

So what are the core characteristics of states that are decarbonizing effectively? This brief reviews the core components of green state capacity, using theoretical and comparative evidence from around the globe. There are, I argue, four main "capacity pillars" to a relatively successful green state: (1) bureaucratic—institutional, (2) macrofinancial, (3) productive—innovative, and (4) social—protective. While most views privilege one aspect of state capacity over another, I argue that these pillars are heavily synergistic and lightly iterative. They are heavily synergistic because the pillars very much reinforce one another; for example, capable institutions foster innovation. They are lightly iterative and sequential, because proficient institutions and accessible financing are often (but not always) preconditions to social protections. In the following sections, I present each pillar's importance, review and translate key insights from the academic literature on what composes the pillar, and summarize some critical areas for future policy.

Capacity Pillar 1: Bureaucratic–Institutional

Large and complex societies need a neutral public service, and large and complex problems need especially large public services. The example of harmful pollutants

and chemicals illustrates this point nicely. Imagine if every time you purchased a product, you had to conduct exhaustive research on every potential chemical in it (while hoping the company was accurately disclosing its production practices). For conscientious people, this would be a full-time job. For the rest of us, unable or unwilling, it would mean living with constant health risks. To save everyone the trouble, governments employ teams of full-time experts to review the research and implement regulations to protect the public from harm. That's a micro rationale for government. The twin problems of climate change and decarbonization are a macro rationale, requiring us to replace entire energy systems to adapt to increasing natural disasters. Here, social science research on effective climate governance offers key lessons: What are the characteristics of government institutions that decarbonize effectively? While by definition no government has done this perfectly (we still have a climate crisis), we can learn from the relative high performers.

Research finds that the structure of a government can help or hurt national decarbonization efforts. One line of scholarship has flirted with the supposed superiority of climate authoritarianism (Mittiga 2022). The logic here is straightforward: Governments without checks or balances can move quickly and implement decarbonization because they are not beholden to civil society, which, to some academics, slows down decarbonization. The famous political theorist Michael Mann terms this as a kind of "infrastructural power" by which the state can truly and effectively implement its goals (Mann 1984). Indeed, authoritarian China has achieved unheard-of levels of green technological advancement and production.

But many scholars link China's performance to bureaucratic competence rather than state type and argue that lessons from China are generalizable for democracies (Ban 2025). Indeed, empirical research such as the Climate Change Performance Index (CCPI) finds that democracies outperform other regime types on decarbonization and climate mitigation across measures of emissions, energy, and policy. Denmark is ranked 1st, while China is ranked 54th. China excels at producing green technologies, but its economy as a whole remains highly polluting (Larsen 2025). Many people conflate the production of green goods with actual decarbonization.

Democracies outperform other regime types on decarbonization and climate mitigation across measures of emissions, energy, and policy.

But democratic regimes are not all equally effective at enacting decarbonization measures. Comparative research across many countries by Kathryn Harrison and others offers some insight. They argue that more open electoral systems, such as parliamentary systems and electoral systems with proportional representation, actually aid decarbonization. This is because open electoral systems can better represent the views of citizens concerned about climate change (Harrison and Sundstrom 2007; Finnegan 2022). For example, in a two-party system, pro-climate views are skewed in favor of reaching the "median voter," and green parties do not exist. When green parties are represented in offices, however, they are often key players for forging coalitions with other parties. In such coalition agreements, they often gain wins for decarbonization. Imagine, in the United States, that the

Democratic Party needed votes from the Democratic Socialists of America (DSA) to enact legislation and subsequently, in that mutualism, had to support the DSA's policy aim to subsidize public transit costs for the public.

Further, as I have shown,political systems plagued by more vetoes tend to be less likely to adopt climate policies (Driscoll 2021). In the US, for instance, the American Clean Energy and Security Act of 2009 passed the House and would have remained without Senate or presidential vetoes. Adopting any policy is more difficult when there are more opportunities to block its enactment, whether through a bicameral legislature or presidential veto. Thus democratic openness and representation—as seen in parliamentary and proportional systems—aids rather than hinders decarbonization efforts. The democratic governments that tend to work toward finding consensus among interest groups, rather than sidelining them, tend to adopt stronger climate policies (Matthews 2001).

Regardless of specific democratic regime, environmental ministries, such as the US Environmental Protection Agency, that oversee environmental regulations and related issues are key in a few ways. As recent research shows, these ministries affirm the scientific reality of climate change and disseminate climate-related scientific expertise across government branches and ministries (Guy et al. 2023). In practice, this means that climate science is institutionalized and not left to the electorate, allowing the goal of decarbonization to inform the writing of laws and regulations. In governments where environmental ministries have autonomy and authority to achieve their stated targets, rather than being siloed or fragmented, their scientific orientation can be especially impactful (Polyák 2026). They can also work horizontally to embed the goal of decarbonization into other policy goals and societal changes around geopolitics, development, economic growth, or jobs (Dubash 2021).

Effective environmental ministry authority is critical because it is a policy lever that governments can pull to implement measures without, say, changing the constitutional, structural frameworks of a country (which could trigger vetoes). As recent reorganizations of the US public service have shown, bureaucracies are more mutable than constitutions and can be transformed more quickly, for better or worse.

The individual and organizational quality of those environmental bureaucrats and ministers is also highly important. More and more, government ministries and branches hire private consultancies to solve national problems, though the track record of such consultancies is mixed at best. Mazzucato and Collington (2023) show that outsourcing to firms such as McKinsey costs governments billions a year and leaves them with less expertise and independence, harming both long-term governance effectiveness and financial sustainability. Countless studies find that *insourced* rather than outsourced expertise and competency is most effective for governance outcomes. This is especially true because full-time national bureaucrats tend to have more knowledge of and ability to move, organize, and communicate between public-sector institutions (Borrás 2019; Kattel 2022). When aligned with the mission of their ministry and capable, they can be dynamic and powerful. For decarbonization, a "wicked problem" that requires coordination at a grand scale among government agencies, the scientific community, and the private sector, such a dynamic competency is key.

Beyond bureaucrats, elected leaders in political institutions are critical for decarbonization outcomes. A leader who makes decarbonization a priority despite pressures from moneyed interests can serve as a policy entrepreneur for the

climate (Harrison and Sundstrom 2007). Like bureaucracies, competent leaders can be strategic and move decarbonization forward despite real structural constraints. Research tracing effective *strategic state capacity* finds that policymakers can use a variety of tactics to shift the relative mobilization and preferences of interests through building coalitions, negotiating, delegating "political" decisions to bureaucracy, sending long-term signals with, say, policy targets, offering incentives, and more (Meckling and Nahm 2022). Leaders are key sources of agency for decarbonization, shaping narrative and strategy.

To summarize, the first pillar of green state capacity, bureaucratic—institutional, has these features:

- Democratic openness aids the representation and influence of pro-climate views.
- Powerful and independent environmental ministries can use climate science more effectively to shape the writing and implementation of laws and regulations.
- Competent and knowledgeable public servants, more so than outside consultants, can communicate science, coordinate among government branches, and strategize to implement decarbonization.

Capacity Pillar 2: Macrofinancial

All historic economic transitions have required financing. Key estimates model global decarbonization as requiring $4 trillion per year (Songwe et al. 2022). Decarbonization thus will be the "greatest reallocation of capital in human history" (Lonergan and Sawers 2022, 2). States must creatively use a variety of economic tools to finance such a massive endeavor. Those tools must generate both public and private investment and then steer that capital at both speed and scale. Current research shows there are several powers at policymakers' disposal, often underused. They can be categorized as fiscal power (taxing and spending), monetary power (central banks), and credit power (public banks). I argue that states must deploy all these capacities in unison to finance decarbonization.

Fiscal Power

Wealthy countries have a number of ways to raise funds from national balance sheets. The first and most commonly cited method is through fiscal policies, or taxing and spending. Economists commonly cite carbon taxes as one use of fiscal tools for decarbonization. In their analyses, carbon taxes are a solution to a market failure. They are a disincentive, raising the cost of emissions to try to shift behavior toward consuming and producing carbon-free goods. But these taxes also have the potential to raise lots of money. Denmark, one of the early adopters of carbon taxes in the early 1990s, uses its carbon tax revenue to finance decarbonization efforts. Monica Prasad (2008) argues that this strategy has contributed to Denmark's comparatively rapid decarbonization: It has used these tax revenues to, in part, massively expand wind energy technologies, which have not only functioned as exported goods but also replaced domestic fossil fuel consumption.

Even without using revenue from taxing emissions, governments can spend. Such spending might take the form of tax credits for electric vehicles, grants for green technology research and development (R&D), and subsidies to decrease the costs of generating clean electricity. Scholars argue that the more *extreme* these positive incentives are, the more likely it is that behaviors will shift (Lonergan and Sawers

2022). Thus, government capacity to tax and spend capital to incentivize decarbonization, negatively and positively, is one key component of their macrofinancial capacity.

Monetary Power

The monetary power of central banks is another component of public financial capacity that can add firepower to decarbonization. Because they are powerful and relatively free of democratic oversight compared to other state institutions and because climate change poses a systemic risk to the global financial system, many argue that the time has come for central banks to get involved. But decarbonization offers significant challenges to how central banks are currently oriented, with their narrow mandates focused on low inflation, economic growth, and crisis prevention (Bordo 2007). Jerome Powell famously said, "We are not, and will not be, a 'climate policymaker'" (Phillips 2023). Still, central banks make all kinds of exceptions for crises (Fink 2023; Polillo 2026). If climate change is ignored in the short term, climatic and decarbonization risks could lead to an economic crisis far bigger than the global financial crisis of 2008. Adam Tooze (2019), for instance, notes that while the mortgage bubble was worth roughly $1 trillion, the carbon bubble is worth approximately $28 trillion.

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At this point, central banks do little for decarbonization save researching and modeling the impacts of climate change on the financial system. One of the most powerful tools at their disposal is easing the lending standards of prudential banks to help finance future green technologies. Most significantly, central banks could also engage in "green quantitative easing," purchasing assets in the trillions that favor green technologies and investment (Campiglio et al. 2018). Favoring green assets with such massive investment would move the climate finance needle significantly. The European Central Bank (ECB) experimented with favoring climate considerations in asset purchases for a spell in 2022 and 2023 (ECB 2025). As the climate crisis progresses, there will be more to come in this space.[2]

Credit Power

Credit power is more commonly leveraged for decarbonization than monetary power is. And credit institutions (public institutions, for the purposes of this brief) are more varied. A common source of credit power for governments is public banks. Public banks, in essence, offer loans to projects that advance policy goals, public goods, and the collective interests of the public. Not all decarbonization projects are profitable at their inception, nor are they low risk, which both limits the entry of private finance and, thus, compromises achieving societal goals. Thus, public banks serve to derisk and actualize future societal visions with long-term, patient capital. Public banks such as the German KfW and Chinese Development Bank already do this with decarbonization, providing billions in financing. The KfW, for instance, has the "mission" of guiding the German *Energiewende* (clean energy transition) and lends billions of euros every year to domestic renewable energy projects (Mazzucato and Penna 2015, 2016).

Not all countries have public banks. While this is challenging, sometimes they use existing institutions as pseudo-alternatives. The United States, for instance, used the Department of Energy's Loan Programs Office (LPO; recently renamed the Office of Energy Dominance Financing) as an alternative to finance Inflation Reduction Act clean energy projects with billions of dollars. Without explicitly calling it a public bank, LPO leaders' discussion of its purpose suggests some functional equivalence. Past director Jigar Shah, for instance, says the office's main goal is offering early-stage financing to allow green technologies to scale (ANS News 2022).

A final critical point is that countries with low levels of fiscal, monetary, and credit power ultimately have to rely upon "external balance sheets" (rather than domestic assets) for decarbonization, given their development trajectories, debt, and climate exposures. The Bridgetown Initiative, advanced by Prime Minister of Barbados Mia Mottley and financier Avinash Persaud, is an attempt to establish such a balance sheet and platform for emerging-market economies. They demand, for instance, that the International Monetary Fund (IMF) repurpose special drawing rights (financial assets for IMF member states) to help climate-vulnerable countries finance climate mitigation and adaptation. They also ask that lenders add "hurricane clauses" to loan agreements that pause payments when disasters strike. Policy measures such as these offer a more just, sustainable option to countries with fewer domestic resources.

To summarize, the second pillar of green state capacity, macrofinancial, has these features:

- Fiscal power through taxes and spending, including carbon pricing, subsidies, tax credits, and grants, incentivizing decarbonization.
- Monetary power via central banks holds potential for large-scale interventions like green quantitative easing, though this power is currently underutilized.
- Credit power from public banks and state-backed lending offices provides long-term, patient capital to finance projects for the public good that private markets may avoid.

Capacity Pillar 3: Productive–Innovative

Historic economic transitions often involve new, disruptive innovations and technologies that reorganize global production and country hierarchies. It is widely considered that in a future of electrification and decarbonization, producing green technologies will be foundational to profits and competitiveness. Indeed, countries that export the technologies for the rest of the world to decarbonize and electrify should experience strong growth. Thus, many countries are now competing with one another to produce the newest, most innovative, and most cost-competitive green technologies. Research finds that these technologies are cheaper and more scalable than expected (Way et al. 2022).

This green technology competition drives more state intervention and investment. Scholars of state capitalism argue that contemporary states are now taking a stronger role in guiding markets "as promoter, supervisor, and owner" (Alami et al. 2021, 1295). Rather than implementing simple "market fixing" regulations and incentives, governments are actively intervening and taking partial or full ownership stakes in firms. Take the French government: Recently, it leveraged its partial ownership stake in the auto company Renault to push the firm to move toward producing electric vehicles (Mazzucato and Andreoni 2020).

State capitalism is even going American. In a remarkable reversal, despite a long and committed history to market forces, the US government under the Trump administration has taken ownership shares of domestic firms like US Steel and MP Materials (Tucker 2025). These deals will offer the state revenue and more direct control over economic affairs. While these practices are not currently done with green intentions, future administrations now have plenty of precedent. Many types of economies are beginning to use such interventionist practices; governments are rapidly rethinking their traditional patterns of economic governance to innovate and produce green technologies, actively coordinating firms and sectors with attention to global dynamics (Allan and Nahm 2025).

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The types of governments best at nurturing these environments are entrepreneurial. These governments, breaking down the traditional mental barriers people commonly construct to divide the public and private sectors, act as investors and market creators. Indeed, in one of the most deregulatory contexts, the United States, many of the key technologies in the world's most prominent goods, such as GPS, have roots in government grants and R&D spending (Mazzucato 2013). Ideologies aside, governments worldwide intervene and always have. This often means thinking less as regulators of and opponents to the private sector, with different goals. Instead, national governments and firms experiment and innovate together.

Sabel and Victor in *Fixing the Climate* (2022) call this "experimentalist governance." In their book, they highlight the example of the Montreal Protocol, in which Ozone-Depleting Substances (ODS) were successfully decreased through global coordination between governments and the private sector. Experts from industry, government, and academia worked collectively at multiple levels to decrease ODS by sector, such as conducting pilot studies on each substance, and innovated to find safe replacements for those chemicals (Sabel and Victor 2022). The Montreal Protocol illustrates a global-level example of this kind of coordination that was a clear success.

Beyond coordinating experiments, governments that foster such environments strategically derisk to lessen the constraints on capital expenditures. Many of the most cutting-edge green technologies, like geothermal energy, are in the early stages of development and thus considered higher risk, with uncertain returns for investors. New firms are still defining their technology, estimating costs and revenues, navigating regulations and permitting, and more (Greig et al. 2023; National Renewable Energy Laboratory 2023).

This is where the state must step up beyond its coordination capacity and offer capital. Financing is key to production and innovation because without adequate capital, new projects, industries, and sectors can never make it off the ground or overcome difficult chokepoints. To move past these chokepoints and speed up the timeline to deployment at scale, governments can derisk these early periods with grants, loans, and guaranteed public contracts. Building productive—innovative capacity thus requires intentional intersection with macrofinancial capacity.

Critics of government derisking rightly warn that when governments derisk the private sector without any discipline or policy stringency, firms profit while society does not fully benefit from a return on that investment or the collective good that might result (Gabor and Braun 2025). Tesla, for instance, has received over $38 billion from the US government, through a variety of channels (Butler et al. 2025). Imagine if the US government had negotiated a 10 percent stake in the firm when it gave it a loan during the global financial crisis of 2008. That stake, if parked in something like a sovereign wealth fund, would be worth billions today and could serve the public good.

China is the most recognized ecosystem where capital is both deployed and guided to amplify green technology production. The Chinese government leverages far larger amounts of risk-tolerant capital than the United States. Their "green five-year plan," for instance, invested roughly 5 percent of GDP in numerous new green sectors and technologies (Mazzucato 2015). The financing is typically sourced from state-backed funds (Beck and Larsen 2025), like the National Green Development Fund. China has what scholars call an "innovation-oriented bureaucracy" that sets innovation targets by sector, transforms various asset classes into risk capital with long time horizons, and links everything to government missions and goals (Li and Ban 2026).

But China does not stop at financing: It has nurtured a green tech innovation ecosystem with top-down directives that incentivize achievement and penalize failure at multiple levels. The practice has created an internal pressure cooker of competition that rapidly prepares firms for global competition (Xie 2025). Today, Western scholars like Jonas Nahm, Mathias Lund Larsen, and Adam Tooze argue that China has won the race for producing the most prominent green technologies.

To summarize, the third pillar of green state capacity, productive—innovative, has these features:

- Entrepreneurial governments act as investors, market creators, and coordinators with the private sector to drive innovation.
- Strategic derisking of early-stage green technologies through grants, loans, guarantees, and public contracts accelerates deployment at scale.
- Governments can foster innovation ecosystems with clear missions, targets, and accountability so that firms can create globally competitive green technologies.

Capacity Pillar 4: Social–Protective

Replacing 80 percent of the world's energy necessitates loss: Loss of traditional inputs for the electricity powering homes, offices, and factories. Loss of transportation systems that move people and goods. Loss of advanced methods to produce agricultural goods. And of course, losses to carbon-intensive industries. If governments don't anticipate and attend to these losses, they risk backlash and reprisals.

To take one example: The fossil fuel lobby has responded to the prospect of loss by challenging climate science and renewable energy production. According to one study, in the northeastern United States alone, a network of right-wing think tanks, foundations, and fossil fuel firms spent over $70 million to block offshore wind construction and undermine the science behind the development (Slevin et al. 2025). Such efforts routinely cause the climate left to villanize fossil fuel interests

and hold them responsible for the slow pace of global decarbonization. Yet such villainization ignores the scope of the problem and renders invisible the much larger coalition of actors who also oppose decarbonization but lack the resources to block policy inputs.

We are in the world of distributional politics. Mass surveys conducted around the globe find that many people agree that decarbonization is important (Fairbrother 2022), but they disagree on *how* decarbonization should happen and *who* should pay for it. But research also finds that people who are economically precarious or reliant on fossil fuels oppose decarbonization (Lübke 2021). Key opponents of climate policies also include unions that represent carbon-intensive jobs and lower- to middle-income households that spend a large portion of their monthly budgets on energy. In short, more and more climate scholars argue that decarbonization requires a deep understanding of and engagement with distributive politics (Aklin and Mildenberger 2020). The social—protective pillar of green state capacity thus considers the realistic wider coalition of actors impacted by decarbonization, including producers like fossil fuel interests but also workers and consumers. This pillar also considers how governments might cushion the broad shock of decarbonization.

Consumers and workers will be impacted by decarbonization in two key ways already identified: energy consumption transition costs and the end of carbon-intensive jobs. A decarbonization that ignores those grievances risks harm to the working classes, who are relatively more exposed than industries, which have the resources to lobby.

Regarding producers, research has documented the potential for significant asset loss. If governments truly limited a temperature increase to 1.5 degrees Celsius, that would mean erasing close to $1 trillion in the value of oil and gas companies (Livsey 2020). The loss would not just be to the firms themselves but also to general financial markets and pensions, which are nontrivially exposed, as a recent *Nature* study finds (Semieniuk et al. 2022). Thus, the span and depth of these firms cannot be taken lightly. Some are private multinational companies, and easier for governments to regulate. But other fossil-fuel companies are owned by governments themselves. Indeed, the majority of fossil fuels in the world are actually based in state-owned fossil-fuel companies (Babić and Dixon 2023). This complicates the oversimplified coalition of "moneyed fossil fuel interests" that scholars and practitioners commonly cite as the primary reason that decarbonization is slow. Indeed, prominent research by political economists Timur Ergen and Luuk Schmitz (2025) suggests that governments now must "manage decline" and decommission entire sectors.

One of the common solutions suggested for this issue is bailouts. The argument is that fossil-fuel firms are so deeply rooted in modern societies that liquidating and stranding companies' carbon assets would cause greater economic and social harm than curbing profits alone. Thus, compensation for asset losses is potentially generative (Colgan et al. 2021). Meckling and Nahm (2022) show how the German government used this strategy with its national coal industry to the tune of 40 billion euros. The leaders of the coal industry knew they were contributing to

climate change, but wanted to avoid significant losses due to decommissioning. The state stepped in, met with these leaders, and came to an agreement. That kind of consensus serves not only present but also future climate action in Germany. Firms know they will not be ignored.

Consumers and workers will be impacted by decarbonization in two key ways already identified: energy consumption transition costs and the end of carbon-intensive jobs. A decarbonization that ignores those grievances risks harm to the working classes, who are relatively more exposed than industries, which have the resources to lobby. The French government, for instance, ignored the impact of an adopted carbon tax on lower- and middle-income households reliant on cars (economists would call that demand for petrol inelastic). As the tax rate increased, French citizens found that energy costs, already a high share of their monthly budgets, became unbearable, leading to historic social protests (Driscoll 2023). This is an example of how ignoring household consumer equity has harmed the viability of carbon-pricing initiatives in France.

The end of carbon-intensive jobs is another issue. Here, the best predictor of that impact is the boom-and-bust cycles of fracking-industry towns. When fracking in a town is decommissioned, low-skilled workers are left without alternatives, leading to social harm (Anselmi 2020). This is especially key in contexts like West Virginia, where the majority of coal-sector workers have relatively well-paid union jobs but no college education (Tooze 2021). Many of these workers, especially those in extractive sectors, do not have skills that are adaptable and transferrable to new industries. Research finds that their geographic locations are also a huge barrier to switching industries (Lim et al. 2023).

All in all, to cushion such costs and losses to consumers, workers, and producers, governments must use their other capacities (including bureaucratic, fiscal, and innovative). Government bureaucrats can research which coalitions will be most impacted and plan policies that offer support. They can marshal the funds to subsidize energy costs to consumers. They can support skill matching, reskilling, or retraining, and offer unemployment insurance to workers who need to move toward the sectors of the future. Countries with strong welfare states and social policies will clearly be more competent at this (Driscoll and Blyth 2025). Finally, counterintuitive to some, governments can also take seriously the concerns of industry, which faces large costs on the horizon for stranded fossil-fuel assets.

To summarize, the fourth pillar of green state capacity, social—protective, has these features:

- Governments must protect consumers and workers from the distributive shocks of decarbonization through measures such as energy-cost, reskilling, and place-based transition support and policies.
- States need strategies to manage the decline of carbon-intensive industries (including compensation, negotiated phaseouts, and transition planning) to mitigate asset losses that could destabilize regions, pensions, and financial systems.
- Strong welfare states and coordinated institutions are essential for maintaining social agreement, reducing backlash, and ensuring that the costs and benefits of decarbonization are shared equitably.

Conclusion

Given the necessity for state capacity in past economic transitions, it is clear that states cannot rely upon market forces to decarbonize. Moreover, one fix by the government is not a cure-all. For example, institutions can only get so far without financial resources and productive forces to implement their visions. But financial capital and spending alone, without effective coordination or regulation, is at risk of going to waste or lining the pockets of the corrupt. And any fix by a government that does not intentionally protect the equal rights and dignity of its citizens may unintentionally harm them in the end. Thus, trying to focus on any one of these four capacities alone or not paying attention to how they reinforce each other is a recipe for a slower transition.

This brief identified four capacity pillars with regard to decarbonization: (1) bureaucratic—institutional, (2) macrofinancial, (3) productive—innovative, and (4) social—protective. Open democracies with strong environmental ministries and competent bureaucrats can help drive and align decarbonization with national public-oriented goals. Governments able to leverage and combine their fiscal, monetary, and credit powers can then fund those goals and transition. When entrepreneurial governments guide those finances to support public goals, they can nurture an innovative ecosystem and private sector that produces the green technologies that will be competitive in a decarbonizing world. A state that considers decarbonization impacts on a wide coalition of societal actors can better plan to ease the distributive losses and thus enjoy a smoother, less contentious transition. Building and maintaining these capacities in unison is thus critical for decarbonization.

Footnotes

1. One rare exception is a recent article by Rosie Collington (2026), which offers scholars and practitioners a sophisticated and comprehensive understanding of state capacity and decarbonization from several key integrated dimensions. I recommend that readers of this brief refer to it for a complementary perspective. ↩
2. To follow the movements of the most forward-looking central banks in the world, refer to Positive Money's annual Green Central Banking Scorecard. ↩

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Acknowledgments

The author would like to thank Suzanne Kahn, Todd Tucker, Julie Hersh, and Katherine De Chant for their feedback, insights, and contributions to this paper. Any errors, omissions, or other inaccuracies are the author's alone. This brief is loosely informed by the findings and arguments presented in the author's previous and ongoing scholarship.

Suggested Citation

Driscoll, Daniel. 2026. "The Four Pillars of Green State Capacity." Roosevelt Institute, June 25, 2026.

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