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# Multi-Solving, Trade-Offs, and Conditionalities in Industrial Policy

By Isabel Estevez

## About the Author

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Isabel Estevez is deputy director of Industrial Policy and Trade at the Roosevelt Institute. Her work combines her academic background in institutional and development economics and years of experience advising governments and advocacy organizations in the design of transformative economic policies, including trade and industrial policies and strategic public investment. Most recently, as senior policy advisor for the Sierra Club, Isabel helped shape dozens of policy proposals, including legislation, [aimed at building the US government's strategic investment and planning capabilities](#); promoting [sustainable trade, manufacturing](#), and [procurement](#); and [expanding investments that simultaneously advance environmental, social, and economic objectives](#). Isabel holds a PhD and MPhil from the University of Cambridge and has taught at the University of Cambridge and Goldsmiths, University of London. Her work has been published in [Foreign Affairs](#) and [The American Prospect](#), and she is coauthor (with Ha-Joon Chang and Antonio Andreoni) of "[Production: The Missing Dimension of the Human Capabilities Approach](#)" for the European Journal of Development Research, and "New Global Rules, Policy Space, and Quality of Growth in Africa" in [The Quality of Growth in Africa](#), a volume edited by Ravi Kanbur, Akbar Noman, and Joseph E. Stiglitz.

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# Executive Summary

This policy brief addresses two intertwined challenges in industrial policy implementation: multi-solving (the practice of solving multiple problems at once through the same policy intervention) and the management of trade-offs between societal goals. Section I explains the importance of holistic thinking for (i) understanding the systemic impacts of industrial policies; (ii) minimizing trade-offs; and (iii) optimizing impact (multi-solving). Section II highlights the importance of trade-off identification as a precondition for trade-off resolution and for honest, empirically grounded decisions about which societal goals will be sacrificed for the sake of others. It also introduces practical tools for trade-off analysis and resolution. Section III explains how investment conditionalities—standards and guardrails—can be deployed to multi-solve and provides an overview of a range of conditionality types that have been proposed in the context of US industrial policy negotiations in recent years. I argue that, independently of the ethical reasons for minimizing trade-offs and simultaneously advancing multiple societal goals, the political climate calls for more ambitious multi-solving to secure ongoing momentum for a green transition.

## Introduction

A year after the passage of the Inflation Reduction Act (IRA), one question continues to haunt the public debate about industrial policy implementation: At what point does adding too many secondary goals to an industrial policy intervention undermine its ability to accomplish its primary goal?

This question has sparked extensive, often heated debate among economic policy commentators. Some (legitimately) fear that trying to accomplish too many goals can severely hinder rapid implementation of urgent projects, like the expansion of clean energy infrastructure or the construction of public housing to address affordable housing shortages. Others (also legitimately) fear that policies that are too narrow will harm workers and communities, fail to build power for lasting change, and undermine accountability, leading to funds being misused and inequitably appropriated. Both are real risks.

Part of the reason the debate continues to drag on is that there is no *generic* answer to the question of *how many goals are too many goals?* The answer varies case by case. Every industrial policy challenge, from steel decarbonization to battery production, has its own particularities—its own set of stakeholders, internal tensions, power dynamics, underlying technological conditions, etc. Those particularities can also vary widely across geographies.



This indeterminacy means that we also need to ask the aspirational version of the same question: How can we design industrial policy to serve as many societal goals as possible? This question urges us to approach the problem as a creative challenge with a view for maximizing positive impacts (i.e., multi-solving<sup>1</sup>), rather than starting from a position that *a priori* calls into question aspirational industrial policy goals and related efforts to place limits on corporate power.

Furthermore, there is a more fundamental, empirical version of the question: How does an industrial policy or project aimed at a particular goal (e.g., steel decarbonization) impact other societal goals or concerns (e.g., ending extreme poverty, protecting worker rights, or ending environmental racism)? As a matter of principle, any attempt to answer the question with regard to any specific industrial policy has to begin by identifying all the worthy goals that policy has the potential to serve—or undermine—and the trade-offs between them. Neglecting to do so seriously risks both gratuitously undermining important societal goals and missing opportunities to create synergies among them.

Drawing from innovation, industrial policy, and development scholarship, as well as empirical analysis of US industrial policy, this brief offers three practicable takeaways to help policymakers avoid those pitfalls and maximize public benefits:<sup>2</sup>

1. **Thinking holistically: When designing and implementing an industrial policy or project, it is always necessary to holistically analyze its relationship to a broad range of societal goals.** Different streams of industrial policy and development scholarship show how an exhaustive mapping of public interest goals can serve as an analytical framework to elucidate the systemic relationships, intersections, and tensions between a policy's primary goal and a range of other socially desirable objectives. This makes it possible to: (i) understand the likely impacts of a proposed policy holistically, (ii) identify potential trade-offs and synergies among goals; and (iii) rethink the design of the policy in a way that minimizes trade-offs and maximizes multi-solving.
2. **Identifying and managing trade-offs: Identifying trade-offs between an industrial policy's central goal and other societal goals is a precondition for both trade-off resolution and honest, empirically grounded decisions about which goals will be sacrificed for the sake of others.** Some trade-offs cannot be resolved and require hard

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<sup>1</sup> For the purposes of this brief, we define "multi-solving" simply as the practice of solving multiple problems at once—a practice that is generally aided by systems thinking. Scholarly literature related to multi-solving and systems thinking is varied and wide-ranging across academic disciplines, from innovation theory to sustainability studies. Prominent examples include Meadows 2008 and Fey and Rivin 2005.

<sup>2</sup> Note that this brief does not seek to make recommendations about how specific trade-offs should be addressed or resolved, but rather to provide a framework for trade-offs identification and analysis.



choices, but many can. Once potential trade-offs are identified, various tools can be deployed to manage them. In fact, there are entire streams of innovation literature devoted to analytical tools for distinguishing between real and perceived trade-offs, as well as methodologies for overcoming trade-offs through creative design. These literatures offer practicable insights for policy innovation and for personnel development. Trade-off analysis of this kind is indispensable for bringing to light and correcting our historic practice of designing economic policy in a way that routinely sacrifices the health and well-being of marginalized groups—especially Black and Indigenous communities.

3. **Using multi-solving tools: Policy design, like politics, is an art, and conditionalities (standards and guardrails) can serve as modular design features that can make the difference between an industrial policy that advances societal goals and one that undermines them.** Industrial policy shapes, not just *what* goods and services we produce, but also *how* we produce them, and the real-world impacts of industrial policy depend on the *how* just as much as the *what*. Conditionalities shape the *how*. In the US, a range of industrial policy conditionalities—from labor and accountability standards to guardrails against worker exploitation and environmental injustice—have been put forth by social actors to better align government action with a range of societal objectives. Given the direction of the political winds, the use of conditionalities to enable multi-solving may prove vital to the sustainability of emerging industrial policies, which risk alienating social actors like the labor and the environmental justice movement—crucial electoral constituencies.

## I. Multi-Solving: The Imperative of Holistic Thinking in Industrial Policy

In its broadest sense, “industrial policy”<sup>3</sup> refers to the deployment of policy tools with the intent of influencing how societies create value—what goods (and services) they produce and how they produce them.

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<sup>3</sup> There are varied scholarly understandings of industrial policy (see Tucker and Sterling 2021, 3 for a discussion), but all share a recognition of the role of government as a key actor in shaping the world of production in line with a public purpose (Tucker 2019).



## Table 1. Taxonomy of Industrial Policy Tools

|  |   |
|--|---|
| <b>Carrots</b><br><br>(To stimulate desired productive activities) | <ol style="list-style-type: none"> <li>1. Investments in strategic human capital and workforce development (education, training, apprenticeships, etc.)</li> <li>2. Investments in innovation: research, development, deployment, and demonstration</li> <li>3. Grants</li> <li>4. Preferential loans, forgivable loans, and loan guarantees</li> <li>5. Public venture capital</li> <li>6. Public-private partnerships</li> <li>7. Tax credits/direct pay for producers and consumers</li> <li>8. Advance market commitments in government procurement and strategic stockpiling of critical goods</li> <li>9. Government procurement standards (e.g., for sustainable procurement, incorporation of local content, or fair labor practices)</li> <li>10. Private procurement standards: requirements for recipients of loans, grants, or other public funds (e.g., for sustainable procurement, incorporation of local content, or fair labor practices)</li> </ol> |
| <b>Sticks</b><br><br>(To curb undesired productive activities)     | <ol style="list-style-type: none"> <li>1. Taxation (of undesirable activities)</li> <li>2. Product- or industry-wide regulatory measures (e.g., regulation of pollutants in manufacturing, agriculture, energy, etc.; price regulation; transparency, emissions, or technology adoption standards)</li> <li>3. Performance requirements for recipients of public investment (subject to revocation of funds)</li> <li>4. Trade and investment regulations (e.g., tariffs, carbon border adjustments, performance requirements for foreign investors)</li> <li>5. Financial sector regulations</li> <li>6. Labor regulations</li> <li>7. Corporate governance regulations</li> <li>8. Antitrust regulations</li> <li>9. Nationalization, public equity stakes, and public management of critical industries</li> <li>10. Litigation</li> </ol>   |
| <b>Enabling Institutions</b>                                       | <ol style="list-style-type: none"> <li>1. Institutions that fulfill industrial strategy functions (e.g., prospective research; vision-building; mission-setting; sectoral, geographic, and socioeconomic targeting of investments; and public and stakeholder engagement, evaluation, oversight, and accountability)</li> <li>2. Coordination bodies to ensure coherence among existing institutions</li> <li>3. Public development banks</li> <li>4. Public research, education, and innovation institutions</li> <li>5. Public enterprises</li> </ol>   |



Specific industrial policies (such as those in Table 1) can be deployed toward an array of goals, big and small—such as from ramping up mask production in a pandemic to transforming poor economies into rich, industrialized ones.<sup>4</sup> Moreover, industrial policies often emerge in the context of broader agendas that lay out a vision for solving a holistic range of societal challenges—for example, as part of [national development plans](#) or in the UN Sustainable Development Goals (SDGs) (Table 2). Organizations like the OECD ([2021](#)) have begun to explore how industrial policy can be designed to advance a broad range of SDGs. That kind of holistic vision is necessary to guide the design of industrial policy in a way that advances—or at very least does not inadvertently undermine—broader societal priorities. As Tucker and Sterling ([2021](#)) suggest, "Perhaps the most important question for policymakers when developing industrial policy is whether it is promoting the industries we need most to allow all members of our society and country to flourish." Equally important is whether the *way* those industries operate—the way we produce—promotes human flourishing.

**Table 2. [Sustainable Development Goals \(SDGs\)](#) established by the United Nations in 2015**

1. No Poverty: End poverty in all its forms everywhere.
2. Zero Hunger: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
3. Good Health and Well-Being: Ensure healthy lives and promote well-being for all at all ages.
4. Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Gender Equality: Achieve gender equality and empower all women and girls.
6. Clean Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all.
7. Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable, and modern energy for all.
8. Decent Work and Economic Growth: Promote sustained, inclusive, and sustainable economic growth; full and productive employment; and decent work for all.
9. Industry, Innovation, and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduced Inequalities: Reduce income inequality within and among countries.
11. Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient, and sustainable.
12. Responsible Consumption and Production: Ensure sustainable consumption and production patterns.
13. Climate Action: Take urgent action to combat climate change and its impacts.
14. Life Below Water: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
15. Life on Land: Protect, restore, and promote sustainable use of terrestrial ecosystems; sustainably

<sup>4</sup> See Estevez 2023 for a discussion on how industrial policy has been deployed historically.



- manage forests; combat desertification; halt and reverse land degradation; and halt biodiversity loss.
16. Peace, Justice, and Strong Institutions: Promote peaceful and inclusive societies for sustainable development; provide access to justice for all; and build effective, accountable, and inclusive institutions at all levels.
  17. Partnerships for the Goals: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

However, not all nations engage in holistic vision-setting,<sup>5</sup> and its absence heightens the risk of further entrenching existing economic pathways, power asymmetries, and related social problems—and missing opportunities to optimize positive impacts.

**First, without an exhaustive mapping of societal challenges and goals, policymakers operate without the clear normative and analytical framework necessary for comprehensively analyzing the problems that policies seek to address, or for understanding the systemic relationships, intersections, and tensions between a potential policy's primary goal and a range of other socially desirable objectives.** Every industrial policy is *de facto* an environmental policy, a distributional policy, a natural resources policy, a labor policy, a health policy, etc., and efforts to influence the goods and services we produce don't just influence which industries survive and thrive and which decline (which industries "win" or "lose"). Each policy influences existing power relations and distributional outcomes—who gets or loses access to clean air and water; who keeps or loses their homes, jobs, or livelihoods. Examining the relationship between a potential policy intervention and a holistic range of societal challenges is therefore necessary to identify the policy's potential impacts. Omitting such analysis inhibits the design policies that observe **the principle of coherence**—the imperative to prevent the pursuit of one policy goal from generating direct or systemic effects that gratuitously undermine other public interest objectives. In other words, in order to avoid gratuitous trade-offs and unintended adverse consequences that further exacerbate social problems, policymakers need to evaluate how different policy interventions—no matter their sectoral specificity or their core mission—affect a holistic set of societal challenges and goals.

**Second, the absence of an explicit holistic set of goals for national development—or "human flourishing"—also risks missed opportunities to maximize the positive impact of industrial policy interventions through multi-solving.**<sup>6</sup> An efficient approach to industrial policy design entails the imperative to strive to meet multiple goals at once in a way that amplifies positive outcomes (e.g., investing in projects that *simultaneously* lower greenhouse gas

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<sup>5</sup> In the US, institutions like a National Investment Authority (Omarova 2020) or a National Investment Agency (Sierra Club 2020) have been proposed to perform this function.

<sup>6</sup> For the purposes of this brief, we define "multi-solving" simply as the practice of solving multiple problems at once—a practice that is generally aided by systems thinking. Scholarly literature related to multi-solving and systems thinking is varied and wide-ranging across academic disciplines, from innovation theory to sustainability studies. Prominent examples include Meadows 2008 and Fey and Rivin 2005.



emissions, create good jobs, lower different kinds of toxic emissions, increase equity, etc.). For example, the IRA's investments in decarbonization of highly polluting industries like steel, aluminum, and cement ([White House 2023](#)) could enhance well-being outcomes by providing preferential treatment to projects that improve a broader environmental and health impacts of industrial production (e.g., aiming to reduce toxic air, land, and water emissions—not just greenhouse gasses), as well as the cumulative impacts of pollution on those most severely impacted by industrial pollution—largely, Black, brown, and Indigenous communities ([Zwickl, Ash, and Boyce 2014](#); [Kassem and Estevez 2022](#)). Similarly, such investments could be designed to favor companies that also advance broader equity objectives and workers' rights (and restrict or prohibit funding for companies and projects that undermine those objectives). **Opportunities to multi-solve and to create synergies between objectives don't always exist, but applying the principle of efficiency means that the possibility of multi-solving and synergies needs to be explored to maximize the positive impacts of policies.**

Even in the absence of a holistic agenda of societal goals, policymakers can take inspiration from scholars working within the human development and capabilities approach, who use the **principle of "exhaustiveness"** to ensure that their analyses holistically examine the impacts of each policy intervention on the full range of human capabilities critical to well-being (not just the capabilities that are immediately relevant to the policy's central goal) ([Ibrahim 2014](#), 16-18; [Robeyns 2003](#) and 2017). Applying the principle of exhaustiveness has two implications for industrial policy design. First, a holistic industrial strategy should seek to transform production to address deficits of well-being across the board (from poverty, to lack of access to clean air and water, to well-paying jobs, etc.). Second, even when an industrial policy targets only a narrow goal (such as increasing semiconductor manufacturing) policymakers practicing the principle of exhaustiveness should strive to clearly understand how that policy affects a holistic set of societal objectives (for example, how semiconductor manufacturing can/will impact poverty, lack of access to clean air and water, well-paying jobs, etc.).

Many proxies for "holistic societal goals" can serve as an analytical and normative framework for this kind of exhaustive analysis—from the politically negotiated UN Sustainable Development Goals (Table 1), to the normatively derived "10 basic human capabilities" in the work of political philosopher Martha Nussbaum ([2003](#)), to the inductively derived goals underpinning each of the four conditionality categories discussed in section IV—each based on proposals from a cross-section of social actors in the US. Regardless of the proxy, the point is to ensure that the direct and systemic impacts of a policy on a broad range of desirable societal goals are well understood and that complementarities and trade-offs are clearly



identified. This kind of holistic thinking is necessary for minimizing trade-offs and maximizing multi-solving.

## II. Managing Trade-Offs between Goals

As noted in Section II, only holistic, systemic analysis can bring to light a policy intervention's full impact. It is also necessary to bring to light the policy's inherent tensions, contradictions, and trade-offs vis-à-vis other societal objectives. Identifying trade-offs between an industrial policy's central goal and other desirable societal goals is a precondition for both trade-off resolution and honest, empirically grounded decisions about which goals will be sacrificed for the sake of others. In the US context, the trade-off identification is particularly important to avoid advancing industrial policies that continue the historic practice in economic policy of sacrificing the health and well-being of poor, Black communities and other racially and socioeconomically marginalized groups without making an effort to avoid such "trade-offs"—and in many cases without even acknowledging them.

Sometimes decisions about trade-offs are defined in high-profile, contentious political negotiation (for example, see [Gunn-Wright 2023](#), on how sacrificing the well-being of frontline communities impacted by the Mountain Valley Pipeline in Virginia, West Virginia, and North Carolina gave way to the IRA). But often, trade-offs are managed in the more mundane moments of policy design and implementation. In the latter cases, three key insights from the innovation literature can help conduct trade-off analysis and find avenues for overcoming them.

**First, the process of recognizing trade-offs is complex and merits careful methodological consideration.** As I argue with Justus Schollmeyer ([2023](#)), even when it comes to the purely "green" objective of preserving a livable planet, green industrial policy discussions in the US have suffered from a kind of "carbon reductionism" that often neglects to acknowledge (and therefore contend with) the the trade-offs between greenhouse gas mitigation and other critical ecological goals like curbing biodiversity loss and decreasing toxic land, water, and air pollution. However, there are ongoing efforts to build an empirical basis for this kind of trade-off analysis. For example, a study by Livotov et al. ([2019](#)) examines the inherent ecological trade-offs of projects that intend to improve ecological parameters and finds that enhancing one of 11 ecological parameters tends to negatively impact three other parameters. Building on this kind of systematic empirical research to identify trade-offs among ecological objectives is a starting point for speeding up project analysis and

designing policies capable of contending with trade-offs on a case-by-case basis.<sup>7</sup> The same logic applies trade-offs between ecological objectives and broader social objectives, like the imperative to stop implementing industrial policies that cause direct, severe harms to the health of communities on the fenceline of highly polluting facilities.

**Second, something that appears to be a trade-off is not always a trade-off.** Building on the inventive problem-solving literature, Schollmeyer (2023) identifies the trap posed by "pseudo-dilemmas"—apparent trade-offs that can often be disproved as such with systematic analysis of cause-effect relationships. Increasing public-sector capacity for systematic industrial policy analysis can help mitigate the risk of falling prey to pseudo-dilemmas that may lead to gratuitous sacrifices. For example, ongoing debates about the deployment of renewable energy infrastructure often point to a trade-off between agile deployment and deference to NIMBY-ism. However, given the US's vast supply of land and manifold opportunities for co-location of solar and wind capacity with transportation infrastructure, housing, and agricultural spaces (and more), it is possible to imagine siting much of the needed renewable energy infrastructure in places where it will be readily welcomed by deploying strategic federal land-use planning informed by early community consultation and combined with robust state-led resource mobilization and well-targeted grants.

**Third, some trade-offs cannot be resolved and require hard choices—but many *can* be solved, mitigated, or compensated.** Building solar capacity, for example, requires critical minerals, the extraction of which harms surrounding ecosystems and communities. Ideally, an innovation to enable the harvesting of solar power without critical minerals (or the advent of an alternative, completely sustainable energy source) would eliminate that trade-off, but as long as solar capacity depends on critical minerals, these trade-offs will persist. The existence of the trade-offs, however, does not mean that they cannot be mitigated and compensated. For example, careful decisions about siting, including [Free Prior and Informed Consent](#) (FPIC) and [observance of the right to say "no,"](#) and rigorous waste management and water efficiency practices, can minimize environmental harm and prevent human harms and damage to critical ecosystems. Strategies for demand reduction (reducing the need for new mining) can also minimize harms by, for example, privileging recycling and recovery (to replace new mining with recycled feedstock). Where environmental harms are unavoidable, they can be compensated through careful environmental rehabilitation. Where human harm has *already* been done due poor planning and management in the past, economic reparations for communities can serve as an additional compensatory mechanism and sanctions against those responsible can prevent bad actors from replicating poor practices.

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<sup>7</sup> In Estevez and Schollmeyer 2023, we build on this research to provide a prototype web-based tool for automatically analyzing trade-offs among ecological objectives in investment projects.



As I argue with Justus Schollmeyer (2023), the mere inclusion of a fuller range of project evaluation parameters that correspond to a holistic set of societal objectives could motivate applicants to creatively structure projects in a way that mitigates those trade-offs *ex ante* to maximize their chance to receive public support. Similarly, providing applicants with tools for inventive problem-solving can stimulate further creative solutions to mitigate trade-offs. Furthermore, identifying persistent trade-offs in the set of projects that make up their portfolio can enable policymakers to find ways to compensate trade-offs: For example, if many solar projects in a portfolio depend on critical minerals from an particular location, policymakers can deploy complementary policies to mitigate environmental harms and ensure the health of fenceline communities. Similarly, to mitigate trade-offs, policymakers can apply simple tools for project selection, such as the the EU Taxonomy of Sustainable Activities (European Commission 2020) "do no significant harm" principle (European Commission 2021), which prevents one "sustainable activity" from significantly undermining other environmental objectives (e.g., more batteries for clean energy in exchange for more water pollution in an environmental justice hot spot).

None of this trade-off management is possible, however, without the first step: rigorous identification and analysis of potential trade-offs.

### III. Using Conditionalities To Multi-Solve

#### *Conditionalities in Public Investment*

In principle, it's possible to multi-solve societal problems through various combinations of policy levers in different domains (monetary, fiscal, financial, technological, educational, etc.). Nevertheless, efficient, coherent policy design means that actions taken *in any of those policy domains* should aspire to be consistent with an exhaustive set of societal goals. In the US today, the challenge of achieving efficiency and coherence is especially pressing in the domain of public investment—the primary policy vehicle for large-scale change that has emerged in recent years (and given the absence of an agency with jurisdiction over cross-cutting, economy-wide investments [see Section I], such a function would have to be performed by the Executive Office of the President).

**Public investment is but one industrial policy tool among many (Table 1) and not necessarily the most likely to efficiently deliver change.** Structural changes, like minimum wage reform or sharper enforcement of pollutant limits could in some cases be more efficient in reshaping production. Furthermore, the development of institutional capabilities for long-term industrial planning and vision-building would provide a more effective



framework for selecting the most impactful policy tools in service of the most impactful industrial policy "missions" (Mazzucato 2021) and priorities. At the moment, however, public investment is the centerpiece of US industrial policy, and so its design and implementation merits particular attention.

**Like any other policy instrument, from tax policy to education policy, the impacts of public investment hinge on an intricate system of subtle design choices. This is true whether an investment is used to advance narrow objectives (e.g., to make more widgets); to achieve broader, more complex missions (e.g., to curb the climate crisis or racial injustice); or to multi-solve by shaping the investments to ensure consistency with—and ideally advancement of—a holistic set of societal goals.**

Some of the moments of the investment cycle that require impactful design choices include mission-setting, sectoral and socioeconomic targeting of funds, definition of eligibility requirements, definition of contractual terms, methods of monitoring and evaluation, and criteria for reinvestment (Table 3).

**Table 3. The Public Investment Cycle<sup>8</sup>**

To ensure a coherent investment strategy, foundational and operational principles (Section 2) can be embedded into each moment in the investment cycle:

1. Mission and target-setting (principles can be used to guide research and analysis criteria for identifying priority missions, geographies, or industries for investment)
2. Targeting of funds and resources (e.g., sub-allocations to strategic projects, economic sectors, or socioeconomic set-asides like Justice40)
3. Calls for projects/project eligibility
4. Technical assistance for applicants (including capacity-building to ensure equitable access)
5. Project selection (evaluation and prioritization criteria)
6. Contractual terms and conditions between implementing agency and recipients of funds
7. Monitoring, oversight, and evaluation of implementation and impact of a project (compliance with terms/outcomes)
8. Enforcement of terms and conditions, and accountability
9. Reinvestment or distribution of financial returns

In terms of sectoral allocation and mission-setting, the investments that compose the Infrastructure Investment and Jobs Act (IIJA), the CHIPS and Science Act, and the IRA are sectorally oriented toward infrastructure, manufacturing, and renewable energy, and guided

<sup>8</sup> Not all of these moments are relevant for every different type of public investment tool (e.g., grants are not repaid and therefore not reinvested; tax credits don't require contracts).



by the missions of national security, economic resilience, and climate change mitigation.<sup>9</sup> As the public investment cycle moves to the implementation phase, other design features of immediate interest include: (more specific) eligibility requirements, contractual terms and conditions, methods of monitoring and evaluation, and criteria for reinvestment or distribution of benefits. Each of these design features can be defined in a way that advances or undermines the core mission of a given investment—and in a way that advances or undermines other societal goals.

**Some of these design choices come down to the question of conditionalities (standards and guardrails). One of the simplest ways in which investment entities—from commercial banks to national governments—operationalize their investment strategy is by attaching conditions to funds.** Commercial banks condition loans on a host of eligibility requirements with the goal of mitigating risk and safeguarding returns (e.g., mortgages are conditioned on applicants' income levels and credit scores, and other eligibility requirements). At the national level, conditionalities on foreign investment, like local content and technology transfer requirements, have long been used to stimulate the development of local industrial capabilities and reduce technological dependence ([Andreoni, Chang, and Estevez 2019](#)). Conditionalities can also be used for less constructive purposes. During the Washington Consensus, the International Monetary Fund was infamous for its use of loan conditionalities that required developing countries to adopt the quintessential neoliberal policy package of "structural adjustment"<sup>10</sup>—austerity, privatization, trade and investment liberalization, and various forms of deregulation, with devastating economic and social outcomes ([Biglaiser and McGauvran 2022](#); [Weisbrot and Ray 2011](#)).<sup>11</sup> In the private sector, the rise of "ESG," "impact," "sustainable," and "responsible" investment has brought the question of public interest into private finance, sparking the development of investment standards that aim to optimize for more than just financial return (e.g., sustainability-linked investments). These emerging standards reflect growing societal interest in moving beyond a bottom line exclusively focused on financial return and toward multi-solving for social, economic, and environmental goals—even in the private sector.

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<sup>9</sup> This investment package notably excludes the care sector, which was included in the Biden administration's original Build Back Better proposal, as well as a host of missions that are arguably as critical as climate mitigation and manufacturing revitalization, such as curbing biodiversity loss or child hunger.

<sup>10</sup> For a historical overview of the changing nature of IMF loan conditionalities, see Polak 1991; for an analysis of the political economy behind the rise of structural adjustment see Kentikelenis and Babb 2019.

<sup>11</sup> The IMF's explicit motivations in the design of conditionalities are to ensure repayment to creditors and to help countries "adjust [their] economic policies to overcome the problems that led [them] to seek [financial assistance](#)" (IMF n.d.). However, the observed (and predictable) outcomes of structural adjustment policies suggest different motivations (see [Biglaiser and McGauvran 2022](#); [Weisbrot and Ray 2011](#)).



With the advent of large-scale public investment in the US in recent years, civil society organizations, including labor organizations, environmental justice groups, and climate groups,<sup>12</sup> have proposed a host of standards and guardrails to prevent the misuse of public funds and to safeguard or advance different public interest priorities.<sup>13</sup> Most of the conditionality proposals put forth by these groups are motivated by one or a few specific overarching goals (e.g., sustainability or worker's rights), and none aspire to reflect a complete set of societal challenges. To provide a more comprehensive overview, the following sections present a preliminary survey of a range of conditionality types and examples of how they can be used to advance multi-solving in practice. **These conditionalities should not be seen as a laundry list of universally applicable requirements, but rather as a toolbox that policymakers can draw upon to enhance multi-solving and mitigate trade-offs in public investments on a case-by-case basis** (see Appendix I for more detail on the methodology and terminology).

## *Public Value and Economic Security Conditionalities*

Implicitly, the core objective of public investments is the creation of some kind of "public value." Public funding is generally allocated to sectors that are deemed strategic, either for economic security or for the production of goods and services that provide basic necessities. For example, the purpose of manufacturing investments in critical supply chains is to ensure economic security by supporting the economy's long-term capacity to produce value, while investments in housing support the provision of shelter.

However, the process of policymaking is complex and multilayered, and whether or not objectives set at the legislative level are realized depends on the ability of policymakers to set rules and processes that cohere with those objectives at each step of implementation. While a *laissez-faire* implementation process can lead to capture by private interests, strategic use of conditionalities (Table 4) can help policies meet their core public value objectives more effectively—and perhaps even more expeditiously. For example, guardrails against shareholder buybacks, such as those attached to the CHIPS and Science Act can stimulate companies to invest their profits in further improvements of their chip manufacturing capabilities ([Tucker and Palladino 2023](#); [Palladino and Estevez 2022](#)). Similar public value

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<sup>12</sup> See, for example, [BlueGreen Alliance 2021](#); [Sierra Club 2020](#); and the [Green New Deal Network \(GNDN\) 2021](#). (The [THRIVE Act](#) marker bill, promoted by the organizations of the GNDN, contains a broad list of investment conditionalities aggregated from, and backed, by [a wide range](#) of environmental, labor, and racial justice organizations.)

<sup>13</sup> These concerns were heightened in the context of the negotiations culminating in the IRA, and the [procedural strictures](#) of the "budget reconciliation" process, which made it particularly difficult to include "non-budgetary" measures, such as investment standards. For an explainer on the strictures of budget reconciliation, see Indivisible (n.d.).



guardrails could be applied across other productive sectors—for instance, to renewable energy companies—to accelerate reinvestment and development of renewable energy manufacturing capabilities.

| Table 4. Public Value and Economic Security Conditionalities |  |   |
|--|--|---|
|  | Conditionality subtype                     | Illustrative examples   |
| Standards  | Domestic productive capabilities           | Requirements (or preferential treatment) for entities receiving public funds to use a certain percentage of domestic content in publicly funded projects (see, for example, the IIJA and IRA)   |
|  | Community-specific productive capabilities | Requirements (or preferential treatment) for entities receiving public funds to hire locally or to contract community-based businesses  |
|  | Public benefit requirements                | Requirements (or preferential treatment) for companies receiving public funds to share a certain percentage of their profits with taxpayers (e.g., "Golden Shares" [Omarova 2017]) or with their workers (e.g., sharing of unanticipated profits in CHIPS Act [Swanson 2023]) |
| Guardrails   | Public benefit safeguards                  | No public funds for companies with a track record of tax evasion and tax avoidance; bans on shareholder buybacks (e.g., in the CHIPS Act [Tucker and Palladino 2023]) for recipients of public funds  |

Conditionalities can also be used to multi-solve by creating public value in domains outside of a policy's core mission. For example, the Biden administration's implementation of the CHIPS Act also requires companies receiving funds to provide childcare for workers (Tucker and Palladino 2023). The conditionality categories that follow can be used similarly to create public value synergies across public interest goals.

It should be noted that many of these conditionalities would not be necessary if the US were to enact measures for more structural change. For example, if the government were to nationalize or take "golden shares" in strategic industries in which for-profit private ownership severely hinders public benefit (e.g., utilities), public benefit conditionalities would not need to be attached to new public investments—they would be a given. Similarly, if a federal universal public childcare program were to be created, it would not be necessary to provide childcare in a piecemeal fashion through investment conditionalities. However, as long as structural changes of this sort remain elusive, conditionalities can help make



progress, build momentum for deeper change, and prevent locking in practices that undermine desirable goals.

## *Equity, Well-Being, and Human Rights Conditionalities*

Many of the conditionalities put forth during IRA negotiations aim to improve "equity," understood as either an improvement in well-being of those negatively impacted by different types of systemic inequities (racial, socioeconomic, etc.) or as a fairer distribution of publicly supported investments. A broad range of conditionalities fits within this category, including human rights standards, equitable hiring standards, funding set-asides for low-income communities, and guardrails against investments that worsen the pollution burden for impacted communities.

Table 5 includes commonly featured subtypes of equity conditionalities and illustrative examples of each. Two stand out for their inclusion in the IRA: the 40 percent set-aside for disadvantaged communities in line with the Biden administration's Justice40 mandate, and the IRA's cross-cutting equity monitoring and impact evaluation mandate for the Office of Management and Budget (OMB) and the Government Accountability Office (GAO).<sup>14</sup> While the former has been criticized for siloing the challenge of equitable distribution into a subset of specific investments rather than mainstreaming the challenge across all agencies and programs<sup>15</sup> ([Daly 2022](#)), the latter takes a step toward building whole-of-government capabilities for investment monitoring and evaluation that could bolster democratic accountability around equity objectives.

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<sup>14</sup> See "[IRA Cross-Cutting Standards Letter](#)," signed by 175 environmental, environmental justice, labor, and democracy groups on February 15, 2023 regarding the implementation of that mandate.

<sup>15</sup> Other critical assessments of Justice40 regard the basis for the 40 percent threshold and the distinction between "benefits" and "funding" as the subject of the set-aside.



**Table 5. Equity, Well-Being, and Human Rights Conditionalities**

|            | Conditionality subtype                                       | Illustrative examples   |
|------------|--|---|
| Standards  | Equitable distribution of funding                            | Requirements for administering entities or fund recipients to set aside a percentage of funds and benefits for disadvantaged communities (e.g., Justice40 <a href="#">[Daly 2022]</a> )<br><br>Requirements to distribute funding equitably among regions with different levels of economic development (e.g., the EU's green subsidy conditionalities to target poorer EU countries <a href="#">[Espinoza and Fleming 2023]</a> )                                |
|            | Equitable hiring and contracting requirements                | Requirements (or preferential treatment) for recipients of funds to hire and contract a certain percentage of low-income workers, people of color, women, people with disabilities, LGBTQ+ individuals, and formerly incarcerated people  |
|            | Equity monitoring and evaluation requirements                | Requirements to assess the distribution of social and economic costs and benefits across income, racial, and other socioeconomic and demographic categories; such provisions can be used to assess the aggregate impact of an investment program (e.g., the IRA's oversight provisions <a href="#">[IRA Cross-Cutting Standards Letter 2023]</a> ) or to give preferences to equity-enhancing projects  |
|            | Wage ceilings  | Requirements (or preferential treatment) for companies that adopt compensation caps for CEOs and top executives   |
| Guardrails | Proscriptions against investments that exacerbate inequities | Requirements for entities administering funds (or funding recipients) to conduct equity screens to assess the environmental/health impacts of potential projects and screen out those that would worsen conditions for pollution burdened communities<br><br>Proscriptions against public funds for corporations that do not comply with the letter and spirit of tax law (for example, the 15 percent corporate book minimum tax <a href="#">[DiVito 2022]</a> ) |
|            | Antidiscrimination proscriptions                             | Recipients of funds cannot ask job applicants about conviction or arrest records in order to prevent the stigma from negatively impacting job applicants (e.g., a “ban the box” requirement <a href="#">[Avery and Lu 2021]</a> )   |
|            | Human rights violation screens                               | Recipients of funds cannot contract or subcontract any company with a record of human rights violations   |



As in the preceding section, some of these conditionalities would be unnecessary if the government were able to implement more structural reforms, such as a federal wage cap for corporate executives, a federal "ban the box" law, or a universal ban on for-profit prisons ([Eisen 2021](#)).

## *Workers' Rights Conditionalities*

Conditionalities related to labor standards and workers' rights have been most successfully translated into US industrial policy. Even the Inflation Reduction Act attached prevailing wage standards to many investments—despite the hurdles posted by the strictures of the budget reconciliation process.<sup>16</sup>

Table 6 groups conditionality proposals intended to promote fairer treatment of workers. Strikingly, many of these are modest in ambition. Even Davis-Bacon prevailing wage standards ([Department of Labor n.d.](#)), for example, are often inadequate to ensure a good standard of living to workers since the wages that "prevail" in many areas are very low. In the context of the neoliberal legacy of soaring inequality and historically low wage growth relative to productivity growth ([EPI 2022](#)), such moderate wage floor standards highlight the need for more structural reforms ([AFL 2021](#)), such as a significant increase in the federal minimum wage (e.g., the \$15 minimum wage [[AFL 2021](#)] or a living wage pegged to inflation).

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<sup>16</sup> For more on the inclusion of labor standards across federal investments see BlueGreen Alliance ([2023](#)).



**Table 6. Worker Rights and Labor Standards Conditionalities**

|            | Conditionality subtype                      | Illustrative examples   |
|------------|---|---|
| Standards  | Protections for the right to organize       | Requirements of neutrality policy on collective bargaining<br><br>Requirements for recipients of funds to use Project Labor Agreements ( <a href="#">AFL n.d.</a> )   |
|            | Worker training                             | Requirements to include pre-apprenticeship programs   |
|            | Wage floors                                 | Requirement for recipients of funds to pay Davis-Bacon prevailing wages (applicable to construction projects)   |
| Guardrails | Proscriptions against anti-union activities | No public funds for companies that have obstructed the right of workers to form or join a labor organization (e.g., companies that have violated National Labor Relations Act in the previous three years [ <a href="#">AFL 2022</a> ])         |
|            | Worker exploitation screens                 | No public funds for employers that misclassify workers as independent contractors, employers with a track record of Occupational Health and Safety violations ( <a href="#">Department of Labor n.d.b</a> ), or employers that use prison labor |

Similarly, the passage of basic federal legislation to protect workers rights, like Protecting the Right to Organize (PRO) Act ([AFL n.d.b](#)) would lessen the importance of some of these conditionalities. In the absence of structural reforms, attaching labor conditionalities to public investments can help improve the conditions of workers and prevent public funds from being used to lock in practices that undermine workers' rights—for example, replicating experiences like that of Tesla, which notoriously benefitted from public funds without labor conditionalities and continues to systematically undermine worker's rights. The political implications of replicating the Tesla experience have become increasingly salient as the lack of labor standards in publicly supported electric vehicle investments have motivated the United Auto Workers to withhold their endorsement of President Biden in the 2024 election ([Vicente 2023](#)). Perhaps more than any other conditionality category, this one shows how the absence of multi-solving not only creates missed opportunities but also critical risks to the sustainability of a policy agenda.

## ***Safe and Healthy Environment Conditionalities***

Environmental investment conditionalities (Table 7) are among the most developed in both the public and private sector. Over the course of IRA negotiations, climate and environmental



justice groups actively promoted economy-wide environmental standards in an effort to mainstream environmental missions across economic sectors and to improve the coherence of environmentally motivated investments.<sup>17</sup> The guardrails proposed by some of these stakeholders (e.g., against investments in fossil fuel projects or projects and technologies that worsened the pollution burden for impacted communities) ([THRIVE Act 2021](#)) were not included in the IRA, but some of the standards were partially adopted or advanced. For example, "Buy Clean" government procurement standards to promote the use of environmentally friendly products and materials were not incorporated, but funding for their development was ([BlueGreen Alliance 2022](#)), and they are being advanced at the executive level ([White House 2022](#)) in some product categories, such as steel and cement.

Inclusion of sustainable procurement standards across publicly funded projects could be a powerful tool for amplifying the positive environmental impact of public investments. If designed to include holistic assessment of environmental impacts, sustainable procurement standards could also prevent unintended adverse consequences—for example, supporting cement manufacturing that decreases coal use but replaces it with combustion of highly toxic waste ([Kassem and Estevez 2022](#)).

However, much like labor standards, environmental standards highlight the limitations of conditionalities in driving structural change: The goal of limiting the dangerous levels of industrial pollution could be more efficiently reached by exercising environmental regulatory and enforcement authority across industrial sectors in line with health and climate targets (e.g., universal proscriptions against the use of highly toxic industrial substances such as glyphosate or PFAS ["forever chemicals"]) ([Bright 2023](#)). Similarly, an aggressive federal initiative to transform land-use and urban planning or economic development policies to transition to clean public transportation could advance environmental goals more quickly than, for example, adding more comprehensive environmental standards to electric vehicle investments.

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<sup>17</sup> See [BlueGreen Alliance 2021](#); [Sierra Club 2020b](#); and the [Green New Deal Network \(GNDN\) 2021](#). (The [THRIVE Act](#) marker bill, promoted by the GNDN, contains a broad list of investment conditionalities backed by a range of environmental, labor, and racial justice organizations.) See also, "[IRA Cross-Cutting Standards Letter](#)" signed by 175 groups on February 15, 2023 regarding the implementation of that mandate.



**Table 7. Safe and Healthy Environment Conditionalities**

|                   | Conditionality subtype  | Illustrative examples  |
|-------------------|---|--|
| <b>Standards</b>  | Environmental impact screens  | Requirement that entities administering funds ensure that funded projects demonstrate a lifecycle contribution to one or more environmental objectives (e.g., reduction of greenhouse gases/toxic pollution, protection/restoration of biodiversity, protection/restoration of natural resources, and/or increased climate resilience. See the <a href="#">THRIVE Act 2021</a> ) |
|                   | Environmentally friendly procurement standards                          | Requirement (or preferential treatment) for recipients of public funds to purchase environmentally friendly products (e.g., products that meet one or more of the following requirements: low carbon emissions, low pollution, low waste, low negative impact on biodiversity, and low resource depletion and degradation [for example, zero deforestation standards])           |
|                   | Sustainable design standards  | Requirement (or preferential treatment) for publicly funded projects to use sustainable designs  |
|                   | Environmental impact assessment standards                               | Requirements to monitor and report on the environmental impact, costs, and benefits of public projects (e.g., the IRA's oversight requirements [ <a href="#">IRA Cross-Cutting Standards Letter 2023</a> ])  |
| <b>Guardrails</b> | Proscriptions against investment in certain highly polluting industries | No public funds to expand fossil fuel infrastructure or industries that do not pass an environmental screen (see the <a href="#">THRIVE Act 2021</a> )   |
|                   | Proscriptions against worst environmental practices                     | No public funds for companies with a track record of violating environmental regulations   |

## ***Democratic Governance and Accountability Conditionalities***

Democratic governance and accountability have become contentious even among progressives in the context of the emerging industrial strategy. Some (legitimately) fear that an abundance of procedural requirements could hinder rapid implementation of urgent projects, like the expansion of clean energy infrastructure or the construction of public housing. Others (also legitimately) fear that insufficient public engagement, oversight, and



accountability will lead to funds being misused or inequitably appropriated. Both risks are real. But the art of policy implementation always involves balancing speed of deployment with quality of deployment—of which democratic engagement is a dimension—and finding creative ways to overcome trade-offs between the two aims. In fact, as discussed in Estevez (2023) and Bozuwa and Mulvaney (2023), well-crafted strategies for democratic governance and accountability can also *improve* the overall effectiveness and even the speed of deployment, and investing some additional time and resources in public engagement up front can result in better-designed projects, with more buy-in and momentum, and with greater impact in the long run. Similarly, transparency and oversight mechanisms can help improve the effectiveness of projects along the way, improving overall efficiency through an iterative process. In other words, robust governance and accountability mechanisms can help avoid one of the key pitfalls that has historically characterized economic transformation efforts: compromising quality and viability of policy due to inadequate democratic engagement (Estevez 2023).

Table 8 outlines some standards and guardrails for democratic governance and accountability. Community Benefit Agreements stand out as a democratic governance standard that embeds democratic engagement into individual projects to motivate a collective definition of community priorities on a case-by-case basis. The IRA's oversight provisions (see [IRA Cross-Cutting Standards Letter 2023](#)), which call on the OMB and the GAO to track labor, equity, and environmental standards and impacts across all IRA programs, are a promising move toward the use of oversight and accountability to promote democratic outcomes. These oversight provisions do not require the *application* of any standards, but could nonetheless incentivize accountability and better well-being outcomes if their implementation effectively enables open and transparent oversight with proactive engagement of normally marginalized groups.



**Table 8. Democratic Governance and Accountability  
Conditionalities**

|                   | Conditionality subtype  | Illustrative examples   |
|-------------------|---|---|
| <b>Standards</b>  | Transparency and monitoring   | The IRA's requirements for the OMB and the GAO to track the labor, equity, and environmental standards and performance of all IRA investments ( <a href="#">IRA Cross-Cutting Standards Letter 2023</a> )   |
|                   | Engagement and stakeholder input                                      | Requirements (or preferential treatment) for recipients of public funds to negotiate <a href="#">Community Benefit Agreements</a><br><br>Requirements/preferences for public comment periods<br><br>Stakeholder advisory boards<br><br>Citizen oversight boards<br><br>Funding for advisors from marginalized communities |
|                   | Preferences for projects with equitable governance                    | Preferences for projects developed through deliberative processes<br><br>Projects by worker-owned firms<br><br>Projects that include workers in governance  |
| <b>Guardrails</b> | Proscription against investments that violate territorial sovereignty | Requirement to obtain Free Prior and Informed Consent (FPIC) from Indigenous Tribes <sup>18</sup> for investments (see the <a href="#">THRIVE Act 2021</a> )  |

As in every other conditionality category, certain structural measures could more effectively address the societal objective that underpins it. For instance, reforms to the governance structure of the federal reserve could democratize decisions that affect investment practices across the economy (not just in the realm of public investment). Similarly, deeper democratization could be achieved by building social infrastructure like public community investment hubs that provide technical assistance to communities for the development of bottom-up investment plans that could then be used to seek funds from the public and private sector alike.

<sup>18</sup> This conditionality is particularly relevant for the US, which has not encoded FPIC into statute nor ratified corresponding international frameworks like the ILO Indigenous and Tribal People's Convention (no. 169).



## IV. Conclusions and Avenues for Future Research

The reemergence of industrial policy has inspired debates about how much multi-solving these policies are capable of achieving and what trade-offs they necessarily imply. This brief proposes that a holistic, multi-solving framework is necessary for comprehensively understanding the systemic and intersectional impacts of policies, which is a prerequisite for preventing and minimizing trade-offs, maximizing social progress, and honestly identifying what societal goals are sacrificed for the sake of others—an urgent imperative to correct our historic practice of designing economic policies that routinely sacrifice the health and well-being of Black and Indigenous communities and other racially and socioeconomically marginalized groups.

One way that the multi-solving framework can be applied to today's industrial policy of choice—public investment—is through the use of investment conditionalities:

1. **Public value and economic security conditionalities** can be used to amplify the public benefits of investments, whether by strengthening their capacity to deliver on their core mission or by creating synergies that deliver public value in domains outside the core of a policy's core mission (e.g., bans on shareholder buybacks, profit-sharing requirements, and domestic content requirements).
2. **Equity, well-being, and human rights conditionalities** can be used to ensure a fairer distribution of benefits, to prevent a deepening of inequities, or to enhance the positive impact of investments on the well-being of those negatively impacted by different types of systemic inequities (racial, socioeconomic, etc.) (e.g., equitable hiring standards, funding set-asides for low-income communities, and guardrails against investments that worsen the pollution burden for impacted communities).
3. **Environmental conditionalities** can help curb the environmental impact of investments and create incentives for cleaner forms of production across economic sectors (e.g., guardrails against investments in fossil fuel projects or projects or sustainable government procurement standards).
4. **Workers' rights conditionalities** can help ensure fair treatment of workers and curb corporate practices that undermine workers' rights (e.g., wage standards and proscriptions against distribution of funds to companies with labor rights violations).
5. **Governance and accountability conditionalities** can be used to build buy-in and viability, as well as to create civic capabilities to hold governments accountable for improving community well-being and delivering public value (e.g., community benefit agreements or oversight requirements).



Though investment conditionalities are far from sufficient to deliver the structural change needed to tackle critical social and environmental challenges, they can help prevent the deepening of existing inequities and promote more coherent and impactful implementation of industrial policy legislation in service of a broader process of economic transformation. Moreover, as illustrated by the labor movement's dissatisfaction with the lack of workers' rights conditionalities in recent green investments, some of these conditionalities may prove critical to the political sustainability of a green transition. The typology provided in this brief, along with other emerging taxonomies of conditionalities (e.g., [Mazzucato and Rodrik 2023](#)) can help guide efforts to shape industrial policy in line with public interest goals.

The main purpose of this brief has been to highlight the importance and utility of holistic, systemic thinking; multi-solving; and trade-off identification and analysis in industrial policy. The analytical and design principles and tools discussed in this brief can be used to (i) design holistic industrial policies; (ii) map and analyze trade-offs in existing industrial policies and projects; (iii) develop new, more holistic and systematic methodologies for cost-benefit analysis and decision making about trade-offs; (iv) build analytical frameworks for case studies of industrial policy implementation, which are urgently needed to build a sound evidence base for government action; and (v) think about institutional innovations needed to embed more coherent, holistic, democratic, and agile industrial policy design and implementation capabilities into the administrative state (see [Shams et al. 2023](#); [Tucker and Nayak 2020](#); [Omarova 2020](#); and [Estevez, Beachy, and Gunn-Wright 2020](#) for other relevant examples).



# References

- AFL-CIO, "As Biden Signs American Rescue Plan, Labor Movement Calls for Structural Changes to the Economy." Press release, March 11, 2021.  
<https://aflcio.org/press/releases/biden-signs-american-rescue-plan-labor-movement-calls-structural-changes-economy>.
- Andreoni, Antonio, Ha-Joon Chang, and Isabel Estevez. 2021. "The Missing Dimensions of the Human Capabilities Approach." *European Journal of Development Research* 33 (April): 179–205.  
<https://doi.org/10.1057/s41287-020-00356-y>.
- Avery, Beth, and Han Lu. 2021. "Ban the Box: U.S. Cities, Counties, and States Adopt Fair Hiring Policies." National Employment Law Project, October 1, 2021.  
<https://www.nelp.org/publication/ban-the-box-fair-chance-hiring-state-and-local-guide/>.
- Beachy, Ben. 2021. *How to Build Back Better: A 10-year Plan for Economic Renewal*. Oakland, CA: Sierra Club.  
<https://www.sierraclub.org/sites/default/files/jobs-renewal-report.pdf>.
- \_\_\_\_\_. 2022. "Reconciliation: Climate, Energy and Environmental Justice Investments." BlueGreen Alliance. Accessed March 15, 2023.  
<https://docs.google.com/spreadsheets/d/1iHbr4Ph3cD7r30Z093pWUMV2P1kLhywAeW2UilVp09U/edit#gid=0>.
- Biglaiser, Glen, and Ronald J. McGauvran. 2022. "The Effects of IMF Loan Conditions on Poverty in the Developing World." *Journal of International Relations and Development* 25 (September): 806–33.  
<https://doi.org/10.1057/s41268-022-00263-1>.
- BlueGreen Alliance. 2021. "BlueGreen Alliance Top 10 Priorities Letter." BlueGreen Alliance, August 24, 2021.  
<https://www.bluegreenalliance.org/wp-content/uploads/2021/10/082421-BlueGreen-Alliance-Top-10-Priorities-Letter.pdf>.
- \_\_\_\_\_. 2022. "FACT SHEET: Clean Manufacturing Investments in the Inflation Reduction Act." <https://www.bluegreenalliance.org/wp-content/uploads/2022/08/BGA-IRA-Manufacturing-Investments-Factsheet-82422-FINAL.pdf>.
- \_\_\_\_\_. 2023. *Best Practices for Implementation: How the Lessons from the Bipartisan Infrastructure Law Can Ensure the Inflation Reduction Act Delivers Good Jobs and Community Benefits*. Minneapolis: BlueGreen Alliance.  
<https://www.bluegreenalliance.org/wp-content/uploads/2023/05/Labor-Standards-Report.pdf>.
- Bright, Zach. 2023. "PFAS Bans, Restrictions Go Into Effect in States in 2023." *Bloomberg Law*, January 4, 2023.  
<https://news.bloomberglaw.com/environment-and-energy/pfas-bans-restrictions-go-into-effect-in-states-as-year-begins>
- Bozuwa, Johanna, and Dustin Mulvaney. 2023. *A Progressive Take on Permitting Reform: Principles and Policies to Unleash a Faster, More Equitable Green Transition*. New York: Roosevelt Institute.  
<https://rooseveltinstitute.org/publications/a-progressive-take-on-permitting-reform/>.



- Daly, Lew. 2022. *Justice40 and the Federal Budget: Challenges of Scale and Implementation*. New York: Roosevelt Institute.  
[https://rooseveltinstitute.org/wp-content/uploads/2022/04/RI\\_Justice-40-Federal-Budget\\_Report\\_202204.pdf](https://rooseveltinstitute.org/wp-content/uploads/2022/04/RI_Justice-40-Federal-Budget_Report_202204.pdf)
- Divito, Emily. 2022. "How the Inflation Reduction Act's Tax Provisions Will Strengthen Our Democracy." *Roosevelt Institute* (blog). August 3, 2022.  
<https://rooseveltinstitute.org/2022/08/03/how-the-inflation-reduction-acts-tax-provisions-will-strengthen-our-economy/>
- Economic Policy Institute (EPI). 2022. "The Productivity-Pay Gap." Last updated October 2022.  
<https://www.epi.org/productivity-pay-gap/>
- Eisen, Lauren-Brooke. 2021. "Breaking Down Biden's Order to Eliminate DOJ Private Prison Contracts." *The Brennan Center*, August 27, 2021.  
<https://brennancenter.org/our-work/research-reports/breaking-down-bidens-order-eliminate-doj-private-prison-contracts>
- Espinoza, Javier, and Sam Fleming. 2023. "EU Opens Subsidy Race with US to Fight Exodus of Green Projects." *Financial Times*, March 9, 2023. <https://www.ft.com/content/a7438c5a-41da-42ab-845f-25176205a5c7>.
- Estevez, Isabel. 2023. "Using Industrial Policy for Productive Transformation: Lessons from Development Economics for US Industrial Strategy." Roosevelt Institute, May 25, 2023.  
<https://rooseveltinstitute.org/publications/using-industrial-policy-for-productive-transformation/>.
- Estevez, Isabel, Ben Beachy, and Rhiana Gunn-Wright. 2020. "The New Economy Will Be Built by Movements." *The American Prospect*, December 2, 2020.  
<https://prospect.org/economy/the-new-economy-will-be-built-by-movements/>.
- Estevez, Isabel, and Justus Schollmeyer. 2023. "Problem Analysis for Green Industrial Policy." *Toward AI-Aided Invention and Innovation*. Springer Nature Switzerland. (report prepared for 23rd International TRIZ Future Conference, TFC 2023, Offenburg, Germany, September 12–14, 2023).  
<https://www.springerprofessional.de/en/problem-analysis-for-green-industrial-policy/25977890>.
- European Commission. 2020. "EU taxonomy for sustainable activities."  
[https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities\\_en](https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en)
- European Commission. 2021. "Do No Significant Harm: Technical Guidance by the Commission." EU Recovery and Resilience Facility, February 16, 2021.  
[https://commission.europa.eu/system/files/2021-10/2021\\_02\\_18\\_epc\\_do\\_not\\_significant\\_harm\\_-\\_technical\\_guidance\\_by\\_the\\_commission.pdf](https://commission.europa.eu/system/files/2021-10/2021_02_18_epc_do_not_significant_harm_-_technical_guidance_by_the_commission.pdf)
- Fey, Victor, and Eugene Rivin. 2005. *Innovation on Demand: New Product Development Using TRIZ*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511584237>.



Green New Deal Network. 2021. "THRIVE Act Fact Sheet."

<https://static1.squarespace.com/static/5fd39d62ad43c8365ea78fac/t/608067d17eb23f256290c399/1619027922092/THRIVE+Act+Fact+Sheet.pdf>.

Gunn-Wright, Rhiana. 2023. "Our Green Transition May Leave Black People Behind." *Hammer & Hope*, summer 2023.

<https://hammerandhope.org/article/climate-green-new-deal>.

Ibrahim, Solvava. "Introduction: The Capability Approach: From Theory to Practice — Rationale, Review, and Reflections." In *The Capability Approach*, edited by Solava Ibrahim and Meera Tiwari, 1–28. London: Palgrave Macmillan. [https://link.springer.com/chapter/10.1057/9781137001436\\_1](https://link.springer.com/chapter/10.1057/9781137001436_1).

"IRA Cross-Cutting Standards Letter." February 15, 2023.

<https://www.sierraclub.org/sites/www.sierraclub.org/files/2023-02/IRA-standards-oversight-letter-OMB-GAO-FINAL-20230215.2.pdf>

Kassem, Hebah, and Isabel Estevez. "Why 'Buy Clean' Policies Should Consider Toxic Emissions (And Much More)." The Sierra Club, September 8, 2022.

<https://www.sierraclub.org/articles/2022/09/why-buy-clean-policies-should-consider-toxic-pollutants-and-much-more>.

Livotov, Pavel, Mas'udah Mas'udah, Arun Prasad Chandra Sekaran, Richard Law, David Reay 2019. Ecological Advanced Innovation Design Approach for Efficient Integrated Upstream and Downstream Processes. *Proceedings of the Design Society: International Conference on Engineering Design* 1, no. 1 (July): 3291–300.

<https://doi.org/10.1017/dsj.2019.336>.

Mazzucato, Mariana. 2021. *Mission Economy: A Moonshot Guide to Changing Capitalism*. UK: Penguin.

Mazzucato, Mariana, and Dani Rodrik. 2023. "Industrial Policy with Conditionality: A Taxonomy and Sample Cases." Working Paper no. 2023-07. UCL Institute for Innovation and Public Purpose (IIPP) Working Paper Series. London: University College London.

<https://www.ucl.ac.uk/bartlett/public-purpose/publications/2023/oct/industrial-policy-conditionality-taxonomy-and-sample-cases>.

Meadows, Donella. 2008. *Thinking in Systems*. White River Junction, VT: Chelsea Green Publishing.

<https://www.chelseagreen.com/product/thinking-in-systems/>.

Nussbaum, Martha. 2003. Capabilities as fundamental entitlements: Sen and social justice. *Feminist Economics* 9 no. 2–3, 33–59. <https://philpapers.org/archive/NUSCAF.pdf>.

OECD. 2021. *Industrial Policy for the Sustainable Development Goals: Increasing the Private Sector's Contribution*. OECD.

<https://doi.org/10.1787/2cad899f-en>.

Omarova, Saule T. 2017. "Bank Governance and Systemic Stability: The 'Golden Share' Approach." *Alabama Law Review* 68, no. 4. 1029–70.

<https://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=2634&context=facpub>.



- \_\_\_\_\_. 2020. "Why We Need a National Investment Authority" *Cornell Legal Studies Research Paper* no. 20-34 (April). <https://ssrn.com/abstract=3566462>.
- Palladino, Lenore, and Isabel Estevez. 2022. "The Need for Corporate Guardrails in US Industrial Policy." Roosevelt Institute, August 18, 2022. <https://rooseveltinstitute.org/publications/the-need-for-corporate-guardrails-in-us-industrial-policy/>.
- Robeyns, Ingrid 2003. "Sen's Capability Approach and Gender Inequality: Selecting Relevant Capabilities." *Feminist economics*, 9, no. 2-3 (January): 61-92. <https://www.tandfonline.com/doi/abs/10.1080/1354570022000078024>.
- \_\_\_\_\_. 2017. *Wellbeing, Freedom and Social Justice: The Capability Approach Re-Examined*. Cambridge: Open Book Publishers.
- Schollmeyer, Justus. 2023. "Dilemma or False Dilemma: A Sequence of Steps to Avoid the Trolley." *Toward AI-Aided Invention and Innovation*. Springer Nature Switzerland. (report prepared for 23rd International TRIZ Future Conference, TFC 2023, Offenburg, Germany, September 12–14, 2023). [https://link.springer.com/chapter/10.1007/978-3-031-42532-5\\_42](https://link.springer.com/chapter/10.1007/978-3-031-42532-5_42).
- Sierra Club. 2020. "National Investment Agency: Mobilizing trillions to build a just, thriving economy." <https://www.sierraclub.org/sites/default/files/uploads-wysiwig/NIA%20Fact%20Sheet.pdf>.
- \_\_\_\_\_. 2020b. "COVID Stimulus Letter." The Sierra Club, April 27, 2020. <https://www.sierraclub.org/sites/www.sierraclub.org/files/COVID%20stimulus.pdf>.
- Shams, Shahrzad, Johanna Bozuwa, Isabel Estevez, Carla Santos Skandier, and Patrick Bigger. 2023. "Lessons from Abroad: What US Policymakers Can Learn from International Examples of Democratic Governance." *Roosevelt Institute*, October 12, 2023. <https://rooseveltinstitute.org/publications/lessons-from-abroad/>.
- Swanson, Ana. 2023. "The CHIPS Act Is About More Than Chips: Here's What's in It." *New York Times*, February 28, 2023. <https://www.nytimes.com/2023/02/28/business/economy/chips-act-childcare.html>.
- Transform, Heal, and Renew by Investing in a Vibrant Economy (THRIVE) Act, S. 1525, 117th Congress. (2021). <https://www.congress.gov/bill/117th-congress/senate-bill/1525>.
- Tucker, Todd N., and Lenore Palladino. 2023. "The CHIPS Plan to Revive American Manufacturing." *The Nation*, March 2, 2023. <https://www.thenation.com/article/economy/the-chips-plan-to-revive-american-manufacturing/>.
- Tucker, Todd N., and Steph Sterling. 2021. "Industrial Policy and Planning: A New (Old) Approach to Policymaking for a New Era." *Roosevelt Institute*, August 10, 2021. [https://rooseveltinstitute.org/wp-content/uploads/2021/07/RI\\_ANewOldApproachtoPolicymakingforaNewEra\\_IssueBrief\\_202108.pdf](https://rooseveltinstitute.org/wp-content/uploads/2021/07/RI_ANewOldApproachtoPolicymakingforaNewEra_IssueBrief_202108.pdf).
- Tucker, Todd N., and Rajesh D. Nayak. 2020. *OIRA 2.0: How Regulatory Review Can Help*



*Respond to Existential Threats*. New York: Roosevelt Institute.

<https://rooseveltinstitute.org/publications/oira-2-0-how-regulatory-review-can-help-respond-to-existential-threats/>.

Vicente, Dan. "What the UAW Wants From Its Fight With the Big Three." Interview by Joe Weisenthal and Tracy Alloway. *Odd Lots, Bloomberg*, August 7, 2023. Audio.

<https://omny.fm/shows/odd-lots/what-the-uaw-wants-from-its-fight-with-the-big-three>.

Weisbrot, Mark, and Rebecca Ray. 2011. "The Scorecard on Development, 1960-2010: Closing the Gap?" Working Paper No. 106. *UN DESA*. [https://www.un.org/esa/desa/papers/2011/wp106\\_2011.pdf](https://www.un.org/esa/desa/papers/2011/wp106_2011.pdf).

The White House. 2022. "FACT SHEET: Biden-Harris Administration Announces New Buy Clean Actions to Ensure American Manufacturing Leads in the 21st Century." September 15, 2022.

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/15/fact-sheet-biden-harris-administration-announces-new-buy-clean-actions-to-ensure-american-manufacturing-leads-in-the-21st-century/>.

\_\_\_\_\_. n.d. "Justice40: A Whole-of-Government Initiative." Accessed March 6, 2023.

<https://www.whitehouse.gov/environmentaljustice/justice40/>.

Zwickl, Klara, Michael Ash, and James K. Boyce. 2014. "Regional variation in environmental inequality: Industrial air toxics exposure in US cities." *Ecological Economics* 107 (November): 494–509.

[https://www.researchgate.net/publication/266750137\\_Regional\\_variation\\_in\\_environmental\\_inequality\\_Industrial\\_air\\_toxics\\_exposure\\_in\\_US\\_cities](https://www.researchgate.net/publication/266750137_Regional_variation_in_environmental_inequality_Industrial_air_toxics_exposure_in_US_cities).



# Appendix I. Notes on Methodology

## *Methodology & Terminology*

Notes on the process and results of the conditionalities survey:

1. The typology of conditionalities is primarily descriptive. Its main purpose is not to interrogate the virtues of each conditionality, but rather to provide a broad map of existing proposals.
2. There is often overlap between different conditionality types: Some conditionalities can advance several public interest principles at once.
3. The five types of conditionalities listed above are not necessarily relevant to all types of investments, to all moments of the investment cycle (Table 3), or to all actors involved in the investment process (e.g., implementing agencies, beneficiary firms, subcontractors, etc.). However, as a matter of principle, it can be fruitful for policymakers to explore the possibility of applying conditionalities that advance all five principles at each operational stage. This can help to: (i) exploit potential synergies between public interest priorities and maximize synergies and public benefit (e.g., to support greater equity *while* supporting a cleaner environment); and (ii) to preserve coherence—to prevent undermining one public interest goal for the sake of another without weighing the trade-offs (e.g., to avoid violating human rights for the sake of a cleaner environment).

Part of the utility of conditionalities as investment-shaping tools stems from their modularity and their ability to bring one public-interest concern into the domain of another. For example, attaching a prevailing wage conditionality to a clean energy investment brings workers' rights concerns into an investment whose primary concern is environmental.

## *Defining Conditionalities, Standards, and Guardrails*

The terms "standards," "guardrails," and "conditionalities" refer to measures designed to shape investments in line with some desired objective that is not (or not fully) addressed in the structure of the investment. **I define "conditionalities" broadly as any requirement attached to an investment, such as a condition for eligibility, receipt, or preferential access to funds, or a condition for evaluating the performance of an investment as successful or unsuccessful.** Conditionalities can apply to a range of actors, such as the entities that administer funds, public and private firms or other entities that receive funds, subcontractors hired by recipients of funds, and more. They can also apply to projects.



**Some conditionalities set prescriptive or aspirational ("thou shalt") conditions, which I refer to as "standards."** They include, for example, environmental impact reporting requirements, performance requirements for companies receiving public funds to source a certain percentage of their products locally ("local content" conditionalities), requirements for construction companies to use environmentally friendly materials in construction ("clean procurement" conditionalities), or requirements for government agencies to set allocational targets (such as the 40 percent funding set-asides of the Biden administration's Justice40 initiative [White House n.d.]). They can also include governance or procedural standards, like the inclusion of [community benefit agreements](#)<sup>19</sup> in publicly funded projects.

**Some conditionalities set proscriptive ("thou shalt not") conditions, which I refer to as "guardrails."** This includes, for example, proscriptions against using public funds to expand fossil fuel infrastructure; proscriptions against investments that worsen the pollution burden for environmental justice communities; or proscriptions against awarding funds to companies that engage in anti-union activities, use prison labor, or have a track record of environmental or human rights violations.

Whereas standards tend to be aspirational and are generally used to give preferences to best actors and practices in investment decisions, guardrails are generally used to screen out worst actors and practices.

The typology of conditionalities includes both standards and guardrails, arranged thematically by public-interest concerns or principles. Although the conditionalities are sourced from a broad range of national and global proposals, the vast majority also appeared specifically in proposals put forth by civil society actors in the US in the context of negotiations around the IRA.

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<sup>19</sup> See, for example, the Department of Energy (n.d.) for a short description of Community Benefit Agreements in energy policy.