



Defending the Climate

Using the Defense Production Act to Mobilize American Clean Energy Manufacturing

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Introduction

The Biden White House is the first to [proactively engage](#) in industrial policymaking in more than four decades.¹ Their commitment to implementing a “modern American industrial strategy” [places a special emphasis](#) on the clean energy transition; the Inflation Reduction Act (IRA), Infrastructure Investment and Jobs Act (IIJA), and CHIPS and Science Act collectively put hundreds of billions of dollars and mobilized dozens of initiatives behind the president’s climate agenda. One of the clearest signals yet of President Biden’s clean energy industrial strategy came in June 2022, when he issued several directives under the Defense Production Act (DPA) and unlocked a powerful, but rarely used, set of policy tools. **Today, President Biden has the opportunity to build on that momentum and further leverage the DPA to support his climate and clean energy goals.**

In his June 2022 DPA orders, the president recognized shortages of [five critical clean energy technologies](#).² He further identified the shortages as a threat to the national defense, enabling the Department of Energy (DOE) to support domestic manufacturing capacity with DPA authorities. Notably, the White House confined the June directives—and a [prior order](#) pertaining to mineral extraction and batteries—to Section 303 under Title III of the DPA.

Title III generally supports direct investments in manufacturing. By invoking that section, President Biden authorized DOE to make subsidy payments, purchase and install manufacturing equipment in private and government facilities, and make loans and capital grants to manufacturers, among other

mechanisms. The IRA later authorized \$500 million for enacting the president’s Sec. 303 directives, and the White House’s [FY24 budget](#) proposed another \$75 million for DPA initiatives. DOE has already made strides toward distributing the IRA funds, most recently with their April 2023 [Funding Opportunity Announcement](#) (FOA) for \$250 million of DPA investments in heat pump manufacturing.

But the DPA offers many powerful tools beyond direct investments and loans, with the potential to invigorate domestic manufacturing and directly shape the clean energy economy. President Biden has included only a few applications of the DPA in his suite of executive actions on climate, but several other authorities warrant closer consideration for a truly ambitious industrial strategy.

This paper explores four key opportunities for DPA action in service of the clean energy transition: **priority purchasing** and **allocations** under Title I of the DPA, and **voluntary agreements** and **industry studies** under Title VII. This paper is breaking new ground in the application of these DPA authorities. Most of them are rarely used, and none have been applied in the clean energy context. For that reason, we seek to offer detailed interpretations of the DPA statute, rooted in deep research and precedent, and provide a solid foundation for the Biden administration to further develop an understanding of their powers under the DPA. The actions we recommend here can support many of President Biden’s established climate programs, and cultivate a more ambitious industrial strategy in years to come.

¹ Economist Ha-Joon Chang defines industrial policy as “a policy aimed at particular industries (and firms as their components) to achieve outcomes that are perceived by the state to be efficient for the economy as a whole.” That “notion of intentionality,” [as summarized](#) by the Roosevelt Institute’s Todd Tucker, is critical. Similarly, Robinson Meyer [succinctly wrote](#) in Heatmap that industrial policy is “policy that aims to grow a specific part of the economy or develop a new type of technology.”

² Those technology groups are: 1) solar photovoltaics; 2) transformers and electric grid components; 3) heat pumps; 4) insulation; and 5) electrolyzers, fuel cells, and platinum group metals.

President Biden Has Built an Unprecedented Green Industrial Strategy

In an [April 2022 speech](#) on a modern American industrial strategy, then National Economic Council Director Brian Deese said, **“We know the climate crisis cannot be addressed by market forces alone. We know public leadership and investment is key to the solution.”** Six months later, Director Deese [expanded on that point](#), saying that a successful industrial strategy “identifies areas where relying on private industry, on its own, will not mobilize the investment necessary to achieve our core economic and national security interests. [The strategy] then uses public investment to spur private investment and innovation.” Identifying gaps in the private sector’s ability to quickly manufacture and deploy clean technology, and directing federal resources to fill those gaps, are at the heart of the White House’s industrial strategy.³

That approach is all but revolutionary in American politics; [one headline](#) declared that President Biden is “ushering in a new economic paradigm.” The administration is forcefully driving a move from neoliberalism to [a policy regime](#) that “gives governments and civil society a significant role” in seeding “productive economic opportunities throughout all regions and all segments of the labor force.” Bidenomics, [as it’s been termed](#), is a historic transfer of resources from corporations to workers and disinvested communities. Through a wide array of provisions in the IRA and IIJA, including robust place-based investments, incentives for high-road labor standards, and set-asides for disadvantaged communities, Congress has clearly ratified the president’s novel policy agenda. This paradigmatic shift is especially promising for the government’s fight against the climate crisis, which calls for a historically ambitious approach to governance and policymaking.

President Biden’s climate pledges meet the moment. He has committed to cutting carbon pollution by 50-52 percent by 2030 and reaching 100 percent clean electricity by 2035. This is where a climate-focused industrial strategy comes in: that transition will be capital- and labor-intensive, and the short timeline will require a nationwide economic mobilization at a scale [unseen since World War II](#). The sheer magnitude of rapid manufacturing and construction required is almost unprecedented.

To meet Biden’s goals, for example, annual U.S. solar deployment will likely need to [double every year](#) throughout the 2020s, and then triple historical maximums in the 2030s. President Biden’s ambitious offshore wind energy target [will require the installation](#) of up to 2,000 turbines by 2030; as of 2021, U.S. waters were [home to only seven turbines](#). Fully decarbonizing the buildings sector will mean electrifying the [49.1 million American households](#) and millions of commercial kitchens that currently use fossil fuel equipment for cooking. **The DPA can help boost production to meet this steep demand.**

³ Note that while the Biden administration prefers the term “industrial strategy”, advocates tend to use “industrial strategy” and “industrial policy” interchangeably; we do the same here.

The Defense Production Act Can Strengthen the Green Industrial Strategy

The DPA contains unusually broad authorities,⁴ but the law’s intent is perfectly clear in supporting the buildout of a domestic clean energy industrial base⁵ and we will indicate throughout this paper how its historical use affirms the recommendations made here. President Biden should take full advantage of the possibilities the DPA affords—to engage in a real WWII-style industrial mobilization, he must leverage every power at his disposal.⁶ Following historic legislative victories, as urgency shifts to implementation and executive action, the DPA stands out as a tool that can facilitate such a bold industrial strategy. We lay out how to best put it to work.

To meet short-term needs in the clean energy transition, we first recommend the use of **priority purchasing**, which allows the federal government to prioritize contracts with the private sector at the president’s discretion. Priority purchasing can support the rapid deployment of clean energy technologies, help resolve supply chain crunches, and dedicate federal procurement efforts to supporting smaller manufacturers in the clean technology sector. These actions can together reshape markets to support the growth of still-nascent—and mission-critical—industries.

The DPA’s **allocations** authority can likewise advance the clean energy transition over the near term. Allocations are a suite of powers to control the flow of critical materials in the U.S. economy; President Biden can use those provisions to secure more rapid deployment of manufacturing equipment to new

and retooled facilities, protect workers’ interests, facilitate disaster preparedness and recovery, and more. The allocations power is broad and holds compelling possibilities for domestic clean tech supply chains.

The White House can also leverage the DPA for building a less immediate, but equally vital, long-term industrial strategy. **Voluntary agreements** (VAs) offer a unique opportunity to engage in that planning. VAs facilitate open communication among clean tech firms and federal representatives, providing a framework for coordination and goal-setting with a long view of industrial development. A voluntary agreement formed among personal protective equipment manufacturers during the COVID-19 pandemic highlights the possibilities of VAs in the clean tech industry; this paper digs into that precedent and possible applications of VAs in the clean energy economy.

To support further efforts for longer-term industrial planning, we also recommend using DPA authorities to produce **industry studies**. The DPA includes provisions for reports “assessing the capabilities of the United States industrial base to support the national defense.”⁷ Those authorities for building industry studies, which allow the president to compel the sharing of proprietary information and other industry data, can bring unparalleled insight into the clean energy sector. This paper explores those powers and the possibilities they afford for ongoing agency initiatives and long-term industrial planning.

⁴ It is notable that even despite the law’s breadth, it has received [consistent backing and affirming precedent](#) from the courts.

⁵ See the breakout box on p. 6 for more on this point.

⁶ The president should also seek to apply his DPA powers as broadly as possible. These initiatives can begin with the five technologies named in his 2022 directives, but should quickly expand to cover a wide array of equipment and materials crucial for the clean energy transition.

⁷ 50 U.S.C. § 4555 (a)

Clean Energy, Energy Conservation, and the DPA

The Defense Production Act is clear that maintaining energy supplies, and supplies of clean energy in particular, is a national defense imperative. The statute declares that “in order to ensure national defense preparedness, it is necessary and appropriate to assure the availability of domestic energy supplies for national defense needs.”⁹ The legislation separately mentions energy supplies again at multiple other points.¹⁰ While these provisions were first added to secure oil supplies during the energy crises of the 1970s, the law has since been updated—in 2009, Congress added that “to the maximum extent possible, domestic energy supplies should be augmented through reliance on renewable energy sources (including solar, geothermal, wind, and biomass sources), more efficient energy storage and distribution technologies, and energy conservation measures.” Since energy was first incorporated into the law as a national defense concern, the provisions have [justified a program](#) to produce biofuels for the U.S. Navy, helped build out [energy transport and storage infrastructure](#), and supported [emergency actions](#) to keep the lights on during an energy shortage.

President Biden would therefore be acting well within the bounds of the statute to leverage the DPA to build a domestic clean technology industrial base—including manufacturing capacity for clean energy infrastructure, like solar panels, and energy conservation technologies, like heat pumps—and thereby advance the clean energy transition. The [DPA orders](#) already issued by his administration only affirm that point.¹¹

Finally, we lay out here the **environmental justice and labor standards** that must govern all of these actions under the DPA. The federal government has historically favored corporations and shareholders at the expense of workers; to ensure a truly just transition, the White House’s DPA actions must break with that trend. They must likewise be executed with special consideration for and deference to frontline environmental justice communities suffering compounding environmental burdens. President Biden has already made historic progress on this front through his [Justice40 commitment](#), [executive orders](#) promoting workers’ rights, and more. Environmental

justice and labor protections must continue to be at the forefront of the president’s industrial strategy initiatives.

We direct the lion’s share of these recommendations to the Department of Energy, which has the [delegated authority](#) to secure energy supplies under the Defense Production Act. DOE’s **Office of Manufacturing and Energy Supply Chains** (MESC) has a particular stake in DPA actions—MESC is charged with implementing \$250 million of the Inflation Reduction Act’s DPA funding for Title III heat pump initiatives (and another proposed \$75 million for DPA

⁹ 50 U.S.C. § 4502 (a)(5)

¹⁰ Section 106 of the DPA identifies “energy” as a “strategic and critical material”, and Section 101(c) gives authority to the president to use his priority and allocation authorities to “maximize domestic energy supplies” in certain circumstances.

¹¹ See the Center for Biological Diversity’s [report on emergency powers](#) for more detail on the DPA’s legal authority to support clean energy manufacturing.

programs in the president’s [FY24 budget](#)),⁸ and its mission of “catalyzing the development of an energy sector industrial base” mirrors the DPA’s focus on strengthening domestic industry. We anticipate that DOE, and MESC in particular, would lead the way on executing many of this paper’s proposals, and we seek to identify other existing programs and offices that would find similar alignment with our recommendations.

The remainder of this paper details that vision for how the Defense Production Act can supplement the administration’s industrial strategy in two timescales, **meeting short-term needs** and **supporting longer-term industrial planning**. It closes by detailing how industrial policy—and the recommended actions under the DPA—should work to uphold environmental justice and labor rights.



⁸ There are likely no other dedicated sources, besides IRA investments, available for energy-related DPA initiatives without further appropriations—while the Defense Production Act also created a [distinct DPA Fund](#) to support initiatives under the law, that fund is managed by the Department of Defense and “does not operate as a plentiful, free-floating source of funding to be spent on DPA projects at the executive branch’s discretion.”

I. Meeting Short-Term Needs

Recent legislative victories, with strict statutory timelines for mobilizing billions of dollars of climate investments, have kicked federal climate efforts into high gear. In the coming months and years, the Biden administration will distribute unprecedented investments in clean technology research, development, demonstration, and deployment. The Defense Production Act offers two tools that

can complement, and keep pace with, that flood of funding. The two powers, **priority purchasing** and **allocations**, can strengthen clean tech supply chains by mitigating the risk of input shortages and fast-tracking supplies for domestic manufacturers. This section explores the possible applications of these authorities under Title I of the DPA.¹²

Legal Prerequisites for Priorities and Allocations

For an agency to issue priority-rated orders or exercise allocations, the president must first make two key findings. First, he must find that the covered “materials, services, and facilities are scarce, critical, and essential—(i) to maintain or expand exploration, production, refining, transportation; (ii) to conserve energy supplies; or (iii) to construct or maintain energy facilities[.]”¹³ He must then determine that such strategic aims “cannot reasonably be accomplished without exercising” priority purchasing or allocations.¹⁴

Notably, those prerequisites closely mirror the determinations President Biden issued for the exercise of Title III authorities to support five clean energy technologies, as described above. In that suite of memorandums, Biden determined that each technology is an “industrial resource, material, or critical technology item essential to the national defense,” and that “industry cannot reasonably be expected to provide the capability for the needed industrial resource, material, or critical technology item in a timely manner” without the exercise of Sec. 303 authorities.¹⁵ The president can issue similar determinations to enable agencies to act through priorities and allocations.

¹² The Roosevelt Institute has released an [authoritative paper](#) analyzing the priorities and allocations authorities, which provided the foundation for much of this section.

¹³ 50 U.S.C. § 4511 (c)(2)(A)

¹⁴ 50 U.S.C. § 4511 (c)(2)(B)

¹⁵ See, for example, [President Biden’s directive](#) for supporting the domestic production of insulation. Each determination also indicated that “purchases, purchase commitments, or other action pursuant to section 303 of the Act are the most cost effective, expedient, and practical alternative method for meeting the need.”

Priority Purchasing

DOE should leverage the DPA's priority purchasing authority to strengthen domestic clean tech supply chains. Priority purchasing is a well-understood power; the Department of Defense (DOD) "uses Title I authorities [on a routine basis](#)," issuing around [300,000 priority-rated orders](#) annually. The authority allows designated agencies to obligate private firms to engage in and prioritize certain contracts that the president "deems necessary or appropriate to promote the national defense".¹⁶ To exercise this authority, the government issues a priority-rated order to a company, which can only refuse the contract under extenuating circumstances (e.g., an order cannot reasonably be filled in the time specified). The firm must then prioritize fulfilling the contract over any other orders, and must do so on terms that they would otherwise apply in the normal course of business.

Agencies are able to both place priority orders with suppliers themselves and obligate priority contracts between two firms. The federal government may also procure equipment and materials in priority contracts and, through the use of the allocations authority described below, [distribute them](#) to industrial firms. DOD's priority orders seem to be applicable to [routine procurement needs](#), and likely don't require distinct appropriations to fund their use.¹⁷ Past administrations have delegated Title I authorities to several other agencies, [including DOE](#), but the power is so disused outside of DOD that many of those agencies have [had no system or regulations](#) in place for it.

During the COVID-19 pandemic, however, some civilian agencies discovered the utility of priority purchasing authorities. As of September 2021, the federal government, primarily through the Department

of Health and Human Services (HHS) and Federal Emergency Management Administration (FEMA), had issued [more than](#) 70 priority-rated orders for PPE and other medical equipment. Manufacturers [reported that](#) the priority orders helped them deliver shipments of PPE and vaccines on time. Those orders demonstrate how priority purchasing can streamline procurement for core economic and national security interests in civilian contexts.

History also indicates that priority purchasing offers untapped potential for DOE in particular. During the 2000-2001 energy crisis in California, several of Pacific Gas & Electric's (PG&E) major natural gas suppliers, ["concerned over the utility's creditworthiness"](#), began halting sales of gas to the utility." California faced widespread blackouts that would affect hundreds of thousands of customers for weeks or months; anticipating a ["doomsday scenario"](#) of widespread blackouts, the Clinton administration's DOE stepped in. Under Sec. 101(c) of the DPA, DOE [required designated suppliers](#) to sell natural gas to utilities facing shortages. That energy crisis [was the first](#)—and last—time any president used emergency powers "to compel domestic fuel suppliers to sell fuel to a civilian buyer."

Even so, there is ample precedent for issuing priority contracts between firms and the government in both military and civilian contexts; there is likewise precedent for DOE obligating priority contracts between two firms. The remainder of this section describes how DOE, following these precedents, can apply priority purchasing to hasten the manufacture and deployment of clean energy technologies.

¹⁶ 50 U.S.C. § 4511

¹⁷ It is difficult to confirm this point without engagement with agency staff who have managed priority contracts—DOE staff can contact counterparts at DOD, FEMA, or HHS for greater clarity on priority purchasing requirements.

1. Streamlining Supply Chains

Priority contracts include a stipulation to help contracted firms fill orders more quickly: any manufacturer that has been engaged in a priority contract can pass that priority rating up their supply chain, putting them first in line to acquire materials needed to fill the order. This feature, [sometimes known as](#) “extendibility,” means that a clean technology firm in competition with other industries for equipment and materials can establish priority contracts with their suppliers to gain first access to those inputs. Transferring priority orders in this manner would mirror a [WWII-era system](#) where defense contractors received warrants for critical materials that they passed upstream to subcontractors and suppliers, giving them priority for limited inputs. The Biden administration has already leveraged Title I authorities once to resolve input shortages for a critical material: in May 2022, during the [infant formula shortage](#), “two manufacturers [were] granted authorization to place prioritized orders for raw materials and consumables used in the production of infant formula.”

Though this DPA power is [unenforceable with suppliers abroad](#), it can serve to streamline clean technology supply chains domestically. The U.S. is home to processing and manufacturing capacity for many inputs for clean technologies, such as [metallurgical-grade silicon](#) and float glass for photovoltaic (PV) panels, [carbon fiber composites](#) for wind turbines, and various materials and chemicals [for batteries](#). Clean technology manufacturers are in competition with other industries for all of these inputs and many others—DOE [has noted](#), for example, competition over “recycled glass for fiberglass insulation vs. beer/wine industry; electronics for grid components.”

As domestic manufacturers ramp up production of clean and electrified technologies for the clean energy transition, we have already seen materials

shortages limit growth. For example, [DOE’s analysis](#) of the grid equipment supply chain identified critical bottlenecks from component suppliers (which are in turn [facing shortages](#) of amorphous steel, aluminum, and copper), such that the industry only used 40 percent of domestic manufacturing capacity for large power transformers in 2019. Similarly, [steel prices skyrocketed](#) during pandemic-driven shortages, increasing the cost of PV solar modules. Future materials shortages risk imposing additional cost burdens on the clean energy transition.

Priority purchasing can help clean technology manufacturers overcome such hurdles, and allow them to secure limited materials where bottlenecks arise. If applied judiciously and with close attention to knock-on effects,¹⁸ the authority could refocus certain supply chains to help mitigate shortages and price spikes.

2. Facilitating Disaster Recovery

The Title I authority to establish priority-rated contracts between private firms is rarely used, but holds compelling potential for climate-related disaster response and recovery—and may help rebuild with cleaner, more efficient technology.

PG&E’s 2000-2001 energy crisis demonstrated a key application of this power: **maintaining critically needed supplies where the private sector would otherwise fail to provide them.** The natural gas shortage was a dire emergency threatening human wellbeing, grid stability, and critical services statewide. Natural disasters, made more frequent and destructive by the climate crisis, present [many such crises](#) each year.

Climate change-fueled disasters regularly damage critical infrastructure, taking power and other services offline indefinitely. Supply chain crunches

¹⁸ We explore precedent and opportunities to mitigate such effects in the below sections on voluntary agreements and industry studies.

DPA Authorities for Disaster Recovery

Select federal agencies, including DOE and FEMA, have clear authority to exercise Title I powers for disaster recovery. The legislative text specifies that “national defense” “includes emergency preparedness activities conducted pursuant to title VI of The Robert T. Stafford Disaster Relief and Emergency Assistance Act¹⁹ and critical infrastructure protection and restoration.”²⁰ In [the regulations](#) DOE issued to govern their priorities and allocations system, the agency went so far as to establish a “shorter time limit in which [a given] recipient must respond to a rated order issued in connection with an emergency response related program because such programs would involve disaster assistance, emergency response or similar activities.”

Furthermore, FEMA has already established extensive precedent in leveraging DPA authorities for disaster recovery—according to [one report](#), the agency exercised DPA powers more than 1,300 times to provide goods and services at federal disaster sites in 2018 alone. In one instance, FEMA acted under the DPA to restore electrical systems. DOE and FEMA’s authorities to apply the DPA for climate-resilient disaster recovery, as recommended in this section, are clearly established in statute, regulation, and precedent.

make immediate repairs far more expensive, and often altogether impossible—in the wake of Hurricane Harvey in Texas in 2017, for example, contractors were [rationing PVC pipes](#). Disruptions to local shipping and freight infrastructure contribute to delays, but broader supply chain trends also [play a major role](#) in resource shortages post-disaster.

DPA powers can help resolve these supply crunches while contributing to a more resilient, clean, and efficient grid.

In addition to the agency’s DPA authorities laid out in the above breakout box, DOE’s [Office of Cybersecurity, Energy Security, and Emergency Response](#) (CESER) already plays a key role in disaster response and recovery. In the wake of a disaster, [CESER dispatches](#) “on-the-ground responders [to] provide subject matter expertise to help state and industry partners assess the disaster’s impacts to the energy sector, restore energy systems to full capacity, and identify any unmet needs that may require federal support or

coordination.” They communicate with local officials, utilities, industry, FEMA, and the U.S. Army Corps of Engineers to restore energy infrastructure as quickly as possible. These functions align well with disaster response actions available under the priority purchasing authority.

In one application of that authority, **FEMA and DOE can obligate priority contracts between key equipment/materials suppliers and utilities, contractors, and local government agencies handling repairs.** For example, [distribution power transformers](#) (DPTs) are essential for restoring service in the aftermath of a natural disaster, but an “[extended supply crunch](#) has resulted in a 4x increase in wait time for DPTs.” In the days and weeks following a hurricane, utilities need immediate access to such equipment; establishing priority-rated contracts between manufacturers and those utilities would ensure critical services come back online as quickly as possible.

¹⁹ Title VI of the Stafford Act lays out the federal government’s authorities for emergency preparedness and details some administrative elements of FEMA. See 42 U.S.C. § 5195 - 5197.

²⁰ 50 U.S.C. § 4552 (14)

Agencies can specifically implement these post-disaster contracts to advance the clean energy transition and build a modern, resilient grid. Advocates have rightly identified natural disasters as an opportunity to rebuild with clean, electrified technologies—in one instance, Rewiring America in a December 2022 report [called on](#) FEMA to fund only all-electric new construction and disaster relief.²¹ FEMA and partner agencies should pursue similar ends through the establishment of priority-rated orders.

For example, alongside priority orders for distribution transformers and other critical equipment, FEMA or DOE²² could put utilities in contracts with suppliers of [grid-enhancing technologies](#) (GETs).²³ GETs allow existing grid infrastructure to transport more electricity with relatively low-cost modifications, enhancing efficiency on a transmission network that must [nearly triple in capacity](#) by 2035 to accommodate new clean energy generation. The [benefits of GETs](#) almost universally outweigh the costs, but perverse incentives discourage utilities from deploying them. The need for greater grid resilience and efficiency is urgently clear in the wake of natural disaster; FEMA can seize that opportunity, through the use of DPA authorities—including the allocations power, as we detail below—to compel improvements with both short- and long-term benefits.²⁴

3. Targeting Federal Procurement to Small Manufacturers and Disadvantaged Communities

President Biden has already established two key procurement initiatives to support the domestic clean tech industry: [Buy Clean](#) and [Buy American](#). In combination, these two programs will drive the federal government to procure more climate-friendly products with domestic content and drive demand to the domestic clean tech industry. These initiatives dovetail with federal climate targets that depend on procurement, like the [federal buildings performance standard](#), which aims to electrify equipment and appliances in 30 percent of federal buildings by 2030, and President Biden's commitment to a [fully electric federal fleet](#) by 2035.

Priority purchasing can enhance these procurement efforts in three key ways. First, the contracts can expedite federal orders to help hit climate benchmarks on time. Second, placing priority-rated contracts would provide all the supply chain benefits listed above. And third, using priority-rated orders more widely would implicitly preference purchasing from smaller manufacturers in disadvantaged communities.²⁵

Sec. 108 of the DPA stipulates that in providing any assistance under the DPA—including the issuance of priority-rated orders—the president:

shall accord a strong preference for small business concerns which are subcontractors or suppliers,

²¹ The Center for Biological Diversity also made a similar recommendation in their [February 2022 report](#) on the president's emergency powers for climate action.

²² As noted in the breakout box above, [DOE regulations](#) indicate that the agency may engage in disaster recovery efforts under the DPA.

²³ Governing for Impact [specifically recommended](#) leveraging DPA authorities to install GETs in their October 2022 report on DPA authorities. Our recommendations regarding GETs draw directly on their work.

²⁴ Improvements with an eye toward long-term benefits would comport with the DPA's central aims, as laid out in the law's declaration of policy (50 U.S.C. § 4502). That section notes that “in order to ensure national defense preparedness, it is necessary and appropriate to assure the availability of domestic energy supplies for national defense needs,” calls for “continuing improvements in industrial efficiency and responsiveness” and “adequate maintenance of the domestic industrial base,” and authorizes “the protection and restoration of domestic critical infrastructure operations under emergency conditions[.]” Taken together, these provisions strongly suggest that DPA authorities can be applied post-disaster to rebuild with resilience and efficiency as foremost priorities.

²⁵ Specifically, the statute preferences “areas of high unemployment or areas that have demonstrated a continuing pattern of economic decline.” DOE can take advantage of existing federal mapping resources, such as the energy community mapping tool and the agency's own Energy Justice Mapping tool, to identify those areas.

and, to the maximum extent practicable, to such small business concerns located in areas of high unemployment or areas that have demonstrated a continuing pattern of economic decline[.]²⁶

That preference is critical to a just and equitable clean energy transition.²⁷ In shifting to clean energy sources, we must not replicate the market structures that allow fossil fuel companies to [price gouge customers](#) as they [prioritize outlandish stock buybacks](#), [eye-popping executive compensation](#), and [consolidation of wealth](#) away from working families. Federal investments should be targeted to prevent the reproduction of these conditions in the clean energy economy, and the DPA's specific direction for allocating assistance does just that.

By integrating priority contracts into standard procurement processes, as DOD does hundreds of thousands of times a year, DOE would bake in a strong preference against concentrating federal dollars in small segments of the private sector, and target funding to the communities that would benefit most from federal support. Resources like the BlueGreen Alliance's [manufacturing base mapping project](#) can help identify and channel resources to those communities. These preferences can certainly be implemented by other means, but the DPA's enforceable stipulations are a compelling selling point for incorporating priority contracts into procurement for federal building electrification and other climate initiatives.

What Can Allocation Orders Cover?

In 2011, DOE issued [a rule](#) regulating its energy priority and allocations systems. The rule specifies three types of allocations orders that DOE might issue: **set-asides**, **allocation directives**, and **allotments**. The following are the rule's definitions of each action²⁹:

- **Set-aside:** “an official action that requires a person to reserve materials, services, or facilities capacity in anticipation of the receipt of rated orders”
- **Allocation directive:** “an official action that requires a person to take or refrain from taking certain actions in accordance with its provisions. For example, a directive can require a person to: stop or reduce production of an item; prohibit the use of selected materials, services, or facilities; or divert the use of materials, services, or facilities from one purpose to another”
- **Allotment:** “an official action that specifies the maximum quantity of a material, service, or facility authorized for a specific use.”

²⁶ 50 U.S.C. § 4518 (a)

²⁷ DOE appears to be acting on this preference; the agency's request for information regarding Title III support for heat pumps asks several questions about the production capacity of small- and medium-sized manufacturers, and indicates prioritization for investments in underserved communities.

²⁹ 10 CFR § 217.53

Allocations

Sec. 101 of the DPA also authorizes the president to allocate materials “as he shall deem necessary or appropriate to promote the national defense.”²⁸ While priority orders intervene on the demand side, the principal government action in allocation systems occurs [on the supply side](#). Allocations are rooted in WWII-era programs that rationed and allocated strategic materials, like steel and copper, among industries.

Allocations powers are circumscribed by DPA statute and regulations. The statute dictates that allocations can only be employed for a given material after the president determines:

(1) that the material is a scarce and critical material essential to the national defense, and (2) that the requirements of the national defense for such material cannot otherwise be met without creating a significant dislocation of the normal distribution of such material in the civilian market to such a degree as to create appreciable hardship.³⁰

DOE issued regulations to govern its priorities and allocations system, which further specify that allocations should:

[b]e used when there is insufficient supply of a material, service, or facility to satisfy national defense supply requirements through the use of the priorities authority or when the use of the priorities authority would cause a severe and prolonged disruption in the supply of materials, services, or facilities available to support normal U.S. economic activities³¹

President Biden can certainly leverage the allocations

authority for clean technologies within these constraints. His [June 2022 determinations](#) have already identified five categories of clean technology as scarce resources “essential to the national defense.” As detailed above, the DPA also defines national defense interests to include maintaining energy supplies. Given the stipulation that allocations should only be used when the priorities authority would cause disruptions, it is important to evaluate allocations opportunities closely. Even so, recent precedent can illuminate where the allocations authority may have a role to play.

At the height of the COVID-19 pandemic, President Trump [authorized HHS](#) to allocate critical medical equipment and resources. The Trump administration issued several executive orders, directives, and temporary rules under the DPA³² to [ensure that](#) the U.S. healthcare system “is able to surge capacity and capability to respond to the spread of COVID-19” and “properly distribut[e]” resources to “others that need them most at this time.” While the Trump administration may have ultimately underutilized these DPA authorities,³³ FEMA did issue a temporary allocations rule that allowed the agency to block the export of critical medical supplies. The administration could have followed through on its promise of allocating test kits, and directed shipments of kits to regions suffering higher infection rates. When ventilators were scarce, the White House could have ensured that smaller hospitals with less resources had access to needed equipment. The allocations power could have helped prevent “the chaotic free-for-all... that pitted governors, hospitals and municipal health departments against one another in competition for N95 respirator masks, hand sanitizer and disposable gloves.”

²⁸ 50 U.S.C. § 4511 (a)

³⁰ 50 U.S.C. § 4511 (b)

³¹ 10 CFR § 217.50

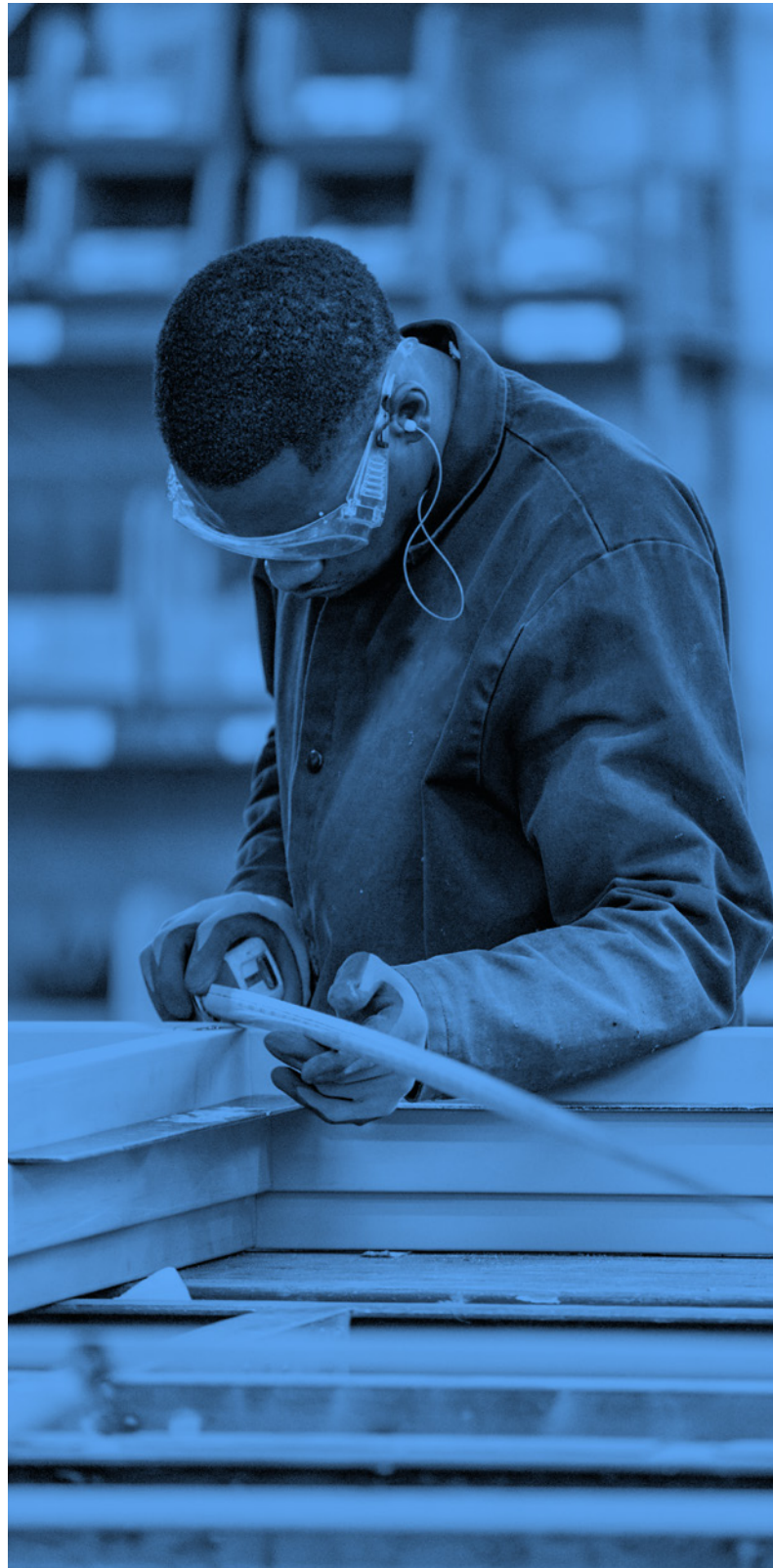
³² A [December 2021 report](#) from the Government Accountability Office (GAO) details the Trump administration’s DPA actions at the height of the COVID-19 pandemic.

³³ For example, a [FEMA official lied](#) about the White House’s plan to allocate 60,000 test kits, and the GAO [report](#) on how President Trump applied the DPA during the pandemic identified no instances of the allocation power’s use.

While we cannot draw direct parallels between pandemic mitigation and clean tech manufacturing, the Trump administration demonstrated certain principles around regional allocations and supply chain management that we can carry forward—**President Biden can leverage the allocations authority for similar applications in tackling the climate crisis.** However, it is notable that allocation systems are often very complex; according to [one analysis](#),

[p]roper use of an allocations system requires that administrators possess an advanced degree of knowledge of the identity, products, and output schedules of both sellers and users of the materials concerned. This knowledge must approach in detail the mass of information possessed by the firms themselves[.]

While the DPA does afford some opportunities to access this type of industry data (as explored below in the section on industry studies), the sheer volume of information collection required to enact an ambitious allocations initiative is likely unfeasible with current resources. This paper is meant to focus on actions the Biden administration could undertake today, or with a reasonable volume of additional staff capacity. For that reason, the recommendations in this section do not explore the most far-reaching applications of the allocations authority. The remainder of this section explores viable opportunities for allocations to support the clean energy transition in the near term.³⁴



³⁴ These recommendations can likely be funded through a combination of IRA investments for Title III allocations, described below, and regular procurement dollars for equipment and material purchases made using allocations—noting the caveat above on page 9.

1. Supporting Construction and Retooling of Manufacturing Facilities

Title I of the DPA provides the law’s broadest authorities for allocations, but Title III also provides a more tailored allocations power. Sec. 303(e) of the DPA authorizes the president to:

procure and install equipment owned by the Federal Government in plants, factories, and other industrial facilities owned by private persons... provide for the modification or expansion of privately owned facilities... [and] sell or otherwise transfer equipment owned by the Federal Government and installed under this subsection to the owners of such plants, factories, or other industrial facilities.³⁵

In practice, this authority offers a unique form of capital subsidy that can aid firms retooling or establishing new manufacturing capacity. Along those lines, the American Rescue Plan provided \$10 billion for DPA actions aiding pandemic response, to be used in part for the “production (including the construction, repair, and retrofitting of government-owned or private facilities as necessary)... of medical supplies and equipment[.]”

To support domestic clean tech manufacturing, DOE can similarly procure industrial equipment and then install that equipment in a given facility at no cost to the facility’s operator.³⁶ The agency could, for example, support the retooling of an air conditioner factory to produce heat pumps by funding some or all of the facility’s modifications. DOE could also help stand up new manufacturing facilities—the agency’s supply chain reports identify domestic manufacturing capacity shortfalls in the [wind](#) and

[solar](#) sectors, for example, and Title III allocations can help close such gaps.

The Biden administration can apply this power to support smaller clean tech firms expanding their operations. As detailed previously, supporting a competitive field within the clean technology sector is good for consumers and the economy. Furthermore, DOE’s allocations initiatives would be subject to the DPA’s “strong preference for small business concerns” described above. As domestic manufacturing capacity grows, Title III allocations will be an important opportunity to invest in smaller firms with the potential for growth.

The White House can also use these allocations to incentivize high-road labor standards within the clean technology sector. Title III allocations can be targeted at the president’s discretion;³⁷ DOE should take advantage of that flexibility, and make any support through Title III allocations contingent on high-road labor practices at receiving firms. DOE should only allocate equipment and resources to companies that pay prevailing wages with benefits, hire apprentices, and maintain safe working conditions, among other stipulations.³⁸ Such project selection criteria would both reward companies with strong labor practices and incentivize others to reach a similarly high bar.

More so than many other policy tools recommended in this paper, Title III allocations depend directly on Congressional appropriations. The IRA allocated \$250 million in DPA funding for DOE to support heat pump manufacturing, and some portion of that funding could be allocated toward equipment for new and retooled facilities.³⁹ DOE may also be able to direct some IRA dollars toward Title III allocations—Domestic Manufacturing Conversion Grants, for example, offer a pot of money to support

³⁵ 50 U.S.C. § 4533 (e)

³⁶ According to the [Congressional Research Service](#), “Section 303(e) has long authorized the President to enhance productive capacity by directly procuring and installing manufacturing equipment in both government and privately owned industrial facilities. In the [2009] reauthorization, this authority was expanded to allow the President to provide for the modification or expansion of privately owned facilities, as well as the ability to sell and transfer equipment to privately owned industrial facilities.”

³⁷ 50 U.S.C. § 4511 (a)

³⁸ For more on the labor standards DOE should implement as project collection criteria, see the BlueGreen Alliance’s [policy toolkit](#) and Gridwork’s [brief on high-road labor standards](#).

³⁹ Rewiring America has laid out a [comprehensive set of recommendations](#) for implementing the IRA’S \$250 million of investments in DPA action on heat pumps.

the “refurbishment or retooling of manufacturing facilities.”⁴⁰ Even so, **further initiatives under this section of the DPA would likely require additional Congressional investments into the DPA Fund or other accounts.** Given the potential for this authority to advance equitable growth in the clean technology sector, DOE should seek further DPA funding to support future Title III allocation initiatives.

2. Decarbonizing Manufacturing Facilities

DOE may also be able to implement some previously authorized funding for industrial decarbonization through Title III allocation authorities. Both IJJA and the IRA included investments in cutting energy consumption and carbon pollution from federal facilities—for example, IJJA’s [Industrial Research and Assessment Center Implementation Grants](#) will fund efficiency upgrades for small- and medium-sized manufacturers, and the IRA’s [Advanced Industrial Facilities Deployment Program](#) supports the installation of advanced technologies to decarbonize industrial operations.⁴¹ While funding mechanisms are already established for these programs, Title III allocations offer another pathway to distributing such investments.

As laid out above, the Biden administration can exercise allocations as a form of capital subsidy by covering the cost of purchasing and installing new equipment for manufacturing facilities. Its ability to do so is constrained by funding: the IRA’s \$250 million for DPA heat pump initiatives is the only pot of money explicitly made available for Title III activities. If DOE were able to draw on other IRA funds for factory upgrades and retrofits—a complicated question of IRA and IJJA program flexibility worth investigating by agency staff—the agency could leverage Title III allocation authorities more dynamically across the clean technology sector.⁴²

These investments in industrial decarbonization are compatible with DPA efforts to strengthen the domestic manufacturing base. Any allocations actions under Title III should be geared toward securing domestic supply chains and increasing production capacity for clean technologies. **Efforts to install more energy efficient equipment in industrial facilities, which will lower costs and improve operations’ resilience, are well within the scope of that work.**

For that reason, DOE should pursue further funding for Title III initiatives, and explore the possibility of using DPA allocations as a distribution mechanism for industrial efficiency funding coming down through the IJJA and IRA. DOE can weigh the value of Title III allocations alongside grants or loans as a means of distributing existing programs’ funding as the agency looks to move billions of dollars of investments in a short period of time.

3. Targeting Equipment to Disaster Recovery Efforts

DOE and partner agencies can use the allocations power to supply key resources in the wake of natural disasters. Allocating needed equipment and materials to hard-hit regions would complement the priority purchasing initiatives detailed above—priority-rated contracts for equipment and materials would meaningfully expedite procurement, while allocations would help ensure the availability of such supplies.

The Trump administration established the basis for using allocations to direct resources to high-need regions when they [considered](#) allocating medical supplies to areas with high rates of infection and hospitalization. When numerous buyers are

⁴⁰ 42 U.S.C. § 16062

⁴¹ See the appendix for a full summary of the manufacturing investments in the IRA and IJJA.

⁴² In a [report on DPA authorities](#), Governing for Impact wrote that the “DPA does not require that government funds be explicitly set aside for DPA use. However, the government can only spend appropriated funds in accordance with statutory terms and conditions.” Directing other program dollars to DPA initiatives would therefore require study of (and compliance with) the programs from which those funds are allocated.

competing for the same supplies, DPA authorities allow the White House to conserve resources for high-need areas—overwhelmed hospitals during the pandemic, or overwhelmed distribution grids after a hurricane.

For example, if a hurricane is forecast to deal severe damage to a region’s power generation and/or distribution, the president could issue a preemptive set-aside for the closest manufacturers of critical grid components. Because set-asides are [meant to](#) “increas[e] the assurance that priority orders will be filled promptly”, the allocations authority would directly complement the disaster recovery applications of priority purchasing. Set-asides are also congruent with DOE’s current [disaster response systems](#), which mobilize before disaster strikes “when a potential major incident is identified.” The agency’s standing capacity for disaster preparedness may make set-asides immediately pre-disaster easier to implement.

Certain Title III allocations may also complement priority purchasing initiatives. We describe above how obligating priority orders between utilities and equipment manufacturers can facilitate the installation of grid-enhancing technologies (GETs) alongside the repair of existing infrastructure post-disaster. DOE could conceivably use the Title III authority for equipment installation to the same end, installing transformers and GETs, procured by priority order, at hard-hit utility facilities.

There are likely other applications of allocation directives or allotments in the post-disaster context, as well—like diverting power generation equipment in common use, such as solar panels, to support faster recovery. DOE should explore these possibilities and the legal implications of allocations to facilitate disaster recovery and resilience.



II. Supporting Long-Term Industrial Planning

In addition to its capacity to address immediate gaps, the Defense Production Act offers authorities to facilitate longer-term planning and coordination. Federal agencies have already invested significant resources in forecasting industry needs in the clean energy transition—DOE’s February 2022 [supply chain reports](#), with more than a dozen papers spanning eleven technologies, are one standout example.

But the clean energy transition is a project that will last until at least 2035, and the drive toward complete electrification and decarbonization will extend well beyond then. Constructive federal engagement in these decades-long processes must include grappling with long-term considerations of where to focus investments, how to shape materials flows, and more. We’ve seen such foresight pay dividends before. For example, then-Representative Jay Inslee [secured \\$2 billion](#) for advanced battery manufacturing and recycling in the 2009 American Reinvestment and Recovery Act; more than a decade later, the U.S. saw \$92 billion of [private sector investment](#) in the battery supply chain from 2021-2023.

Federal investments can reshape and cultivate industries over the span of decades. As further industrial investments take off in the post-IRA landscape, intentional planning to anticipate long-term needs for the clean energy transition will be more important than ever. Such efforts fall well within the Biden administration’s stated commitments to a bold industrial strategy: former Director of the National Economic Council Brian

Deese [said of](#) the White House’s industrial strategy, “as with any project, it starts with planning.”⁴³

This section explores applications of two authorities from Title VII of the DPA to help build a policy framework for this decades-long effort: **voluntary agreements** and **industry studies**. By establishing voluntary agreements and leveraging DPA authorities for in-depth industry studies, the White House can craft industrial policies that anticipate market developments and address industry needs in years to come.



⁴³ A limited group of federal offices, like DOE’s Advanced Materials and Manufacturing Technologies Office, are already undertaking planning work in some capacity. According to the office’s website, AMMTO “provides planning, management, and direction necessary or a balanced program of research, development, demonstration, technical assistance, and workforce development to support domestic manufacturing that is critical to achieving a clean, decarbonized economy.”

Voluntary Agreements

Voluntary agreements (VAs) facilitate cooperation between the federal government and a group of private firms in a particular sector, with the aim of maximizing output and efficiently allocating resources across industries. The president may establish a VA upon “finding that conditions exist which may pose a direct threat to the national defense or its preparedness programs.”⁴⁴ Critically, participation in a voluntary agreement provides legal defense—though [not full immunity](#)—against antitrust claims.

Within [some parameters](#), participating companies are given broad latitude to communicate typically sensitive information to competitor firms in the context of a VA. The law provides that “there shall be available as a defense for any person to any civil or criminal action brought under the antitrust laws (or any similar law of any State) with respect to any action taken to develop or carry out any voluntary agreement or plan of action,”⁴⁵ so long as such actions were taken to advance the VA’s aims and comport with other requirements under Sec. 708(j) of the statute.⁴⁶ These powers present real risks of uneven market concentration and sector cartelization that DOE must proactively mitigate, but they also offer an unparalleled opportunity to collectively mobilize and help steer the private sector for the clean energy transition.

VAs are a rarely-used tool—as of March 2020, the Maritime Administration of the U.S. Department of Transportation operated the [only two](#) active VAs in the country, the [Voluntary Intermodal Sealift Agreement](#) and [Voluntary Tanker Agreement](#), to ensure the maritime industry’s rapid mobilization in response to DOD needs. But we can draw on a more recent precedent as a guide for clean technology applications: in May 2020, FEMA established a

VA among personal protective equipment (PPE) manufacturers. FEMA Administrator Peter Gaynor [said at the time](#) that the agreement would “provide all of us the space to conduct... conversations to **find supply chain bottlenecks, identify insufficient distribution methods, and locate additional resources** for critical healthcare resource production.” Through the VA, FEMA [regularly convened](#) representatives from several federal agencies with dozens of firms.

FEMA’s VA illustrates how such arrangements can be structured. The agreement was organized through subcommittees “focused on maximizing the manufacture and efficient distribution of critical PPE”, separated out by PPE type: medical respirators, gloves, gowns, and facial coverings. VA participants developed findings and recommendations for partner federal agencies, and FEMA has reported that the VA created valuable new communication channels with the private sector. DOE could structure a clean technology initiative similarly—the president’s June 2022 DPA directives, divided among 1) solar panels, 2) heat pumps, 3) insulation, 4) grid components, and 5) electrolyzers, fuel cells, and platinum group metals already offer a clear framework for organizing and enacting a clean energy VA.⁴⁷

Voluntary agreements are ultimately implemented through a series of plans of action. A well-constructed plan will set the agenda for VA participants and help establish processes for meeting shared goals. The DPA statute includes little guidance on plan of action content, but the FEMA VA again [offers a model](#).

The FEMA agreement’s first plan of action established a series of objectives, including “Optimiz[ing] the timely production of sufficient quantities of PPE” and “Ensur[ing] PPE is distributed effectively across

⁴⁴ 50 U.S.C. § 4558 (c)

⁴⁵ 50 U.S.C. § 4558 (j)(1)

⁴⁶ 50 U.S.C. § 4558 (j)

⁴⁷ As noted elsewhere in this paper, this list of technology groups should serve as a starting point for President Biden’s DPA initiatives. Numerous technologies are critical to the clean energy transition, and the White House should seek to strategically support a wide array of them.

the whole community nationally.” To meet those objectives, it laid out a long list of possible participant actions, with items like “Evaluat[ing] the domestic supply of PPE and identify[ing] when the expansion of the domestic manufacture of PPE may be necessary,” and “Facilitat[ing] maximum availability of PPE... by deconflicting overlapping demands from the collective Participants’ customer base.” The plan of action also established the “Competitively Sensitive Information” expected to be shared among participants, including inventory levels, cost information, and sourcing and procurement information. Each of these plan elements—optimizing production and distribution, mapping and deconflicting supply chains, and establishing ground rules for industry cooperation—can and should carry over into a clean technology VA.

The FEMA comparison should be considered with an important caveat: while that VA exclusively engaged with the private sector, the DPA makes clear that agreements can include a far more diverse stakeholder group. Sec. 708 of the statute authorizes the president to “consult with representatives of industry, business, financing, agriculture, labor, and other interests in order to provide for the making by such persons, with approval of the President, of voluntary agreements and plans of action[.]”⁴⁸ As detailed later in this section, **DOE should therefore ensure that organized labor and representatives from environmental justice communities help build and execute the VA.**⁴⁹

These agreement participants collaborate with federal agency representatives to write the plan of action. In building and executing the agreement, DOE should engage a diverse set of federal offices—for example, staff from DOE’s MESC, [Advanced Materials and Manufacturing Technologies Office](#), and [Industrial Efficiency and Decarbonization Office](#) stand to provide valuable input. FEMA, the Department of Commerce, GSA, and other relevant agencies could likewise play vital supporting roles. DOE can also draw on similar existing initiatives, like their [R&D consortia](#) and Commerce’s [Manufacturing Extension Partnership](#),

for guidance on building the VA. In particular, these federal partners can help identify subsectors and stakeholder groups that should participate in the VA to best strengthen domestic supply chains. And because VAs are largely administrative initiatives for stakeholder convening and engagement, establishing an agreement would likely only require funding for sufficient staff to manage the process.

The DPA statute also requires public input akin to a rulemaking process and regular publicly accessible meetings. Rather than providing a top-down agenda and set of directions, the White House can engage in a cooperative process with industry, environmental justice advocates, labor unions, and the public to form VAs and write plans of action. The remainder of this section explores possible implications and outcomes of a voluntary agreement, established along these lines, within the clean technology industry.



⁴⁸ 50 U.S.C. § 4558 (c)(1)

⁴⁹ The Center for Biological Diversity has also previously [called for](#) a VA for “green energy and transportation technologies.”

1. Deconflicting Supply Chains

As detailed above, supply chain crunches may impede the rapid transition to a clean, electrified economy. Within subsectors of the clean tech industry, competition for limited inputs could constrain growth. But by facilitating communication and coordination between firms, VAs can help resolve these bottlenecks—and guide implementation of other DPA measures, like priority purchasing.

FEMA’s VA with PPE manufacturers tackled analogous concerns. The agreement’s plan of action listed possible actions that may be asked of participants; among them, the VA listed, “facilitate maximum availability of PPE... by deconflicting overlapping supply chain demands.” Supply chain conflicts did flare up, such as when [more than 10 companies](#) with priority-rated orders were competing for a limited supply of meltblown fabric, a key input for ventilators and respirators. To resolve the bottleneck, “HHS officials worked with the ventilator and N95 companies to identify alternative suppliers and methods for producing meltblown fabric.” HHS also initiated meetings with DOD, FEMA, the Department of Commerce, and other agencies to discuss the potential effects of future priority ratings on supply chains. For example, agencies “discussed the effect that placing priority ratings on liquid oxygen contracts for hospitals’ use might have on municipality water treatment sites or military and other space launch sites that also use this product.”

The Biden administration has likewise already leveraged its convening authority to great success—at the height of pandemic-driven supply chain bottlenecks, [the government brought together](#) trucking industry leaders, organized labor, and training providers to address a workforce shortage crisis. [As a direct result](#) of that collaboration, “the secretaries of labor and transportation worked together to help industry leaders adopt registered apprenticeships,”

and in “just three months, the Department of Labor approved over 100 new apprentice programs at companies as diverse as Frito-Lay and Waste Management, which would create over 10,000 new apprentices to address the reported 80,000 driver shortage.” Establishing a clean technology VA would provide structured opportunities for precisely this kind of coordination—dialogue among agencies and with the private sector to tackle supply chain issues and maximize production—through a formal set of collaborative relationships.

DOE’s extensive supply chain analyses and [stakeholder engagement](#) have already identified potential bottlenecks, and future assessments will likely find intra-industry competition for limited clean technology inputs. A new VA could help DOE and partner agencies effectively resolve similar hurdles as they arise in the clean technology space. Such coordination would be especially valuable as agencies channel billions of dollars into the industry, and could help effectively implement priority purchasing and allocation initiatives.

2. Targeting Place-Based Investments to Maximize Production

Place-based investments are central to the Biden industrial strategy, and a VA can help strengthen federal efforts to invest in regional development. To form a VA, the president must find that “conditions exist which may pose a direct threat to the national defense” and that the VA would in turn “help provide for the national defense.”⁵⁰ In his June 2022 directives, President Biden identified shortages of several critical clean energy technologies as a threat to national defense; resolving those shortages would therefore be a core function of the VA. Using a VA to target place-based investments would directly fulfill that need.

⁵⁰ 50 U.S.C. § 4558 (c)

We know that place-based industrial strategies will help maximize industrial output and address such shortages—[DOE’s report](#) on building a domestic clean energy manufacturing base explicitly recommended “support[ing] the establishment of regional clean energy industrial clusters”. The [agency’s analysis](#) of wind turbine supply chains likewise identified clustering opportunities around offshore wind ports. The principle is also demonstrated by IJJA’s [hydrogen hubs program](#), which will leverage federal funding to crowd in regional private investment for the hydrogen industry.⁵¹ Post-IRA private sector decisions have concretely proven the advantages of regional investments—the solar manufacturing company Qcells [announced in March 2023](#) their intention to build a complete solar supply chain entirely in the state of Georgia, comprising three plants, in collaboration with their supplier Hanwha Advanced Materials Georgia.⁵²

VAs can help organize industry to achieve similar regional manufacturing clusters. The [FEMA agreement’s](#) plan of action highlighted the need to increase supply in “particular geographies;” building on this precedent, a DOE VA could include actions to increase output and concentrate manufacturing in particular geographies.

Information exchange and collaborative planning between government and industry are critical for developing those clusters. In DOE’s summary of their DPA stakeholder roundtables and request for information (RFI) responses, [the agency wrote](#), “Use the convening power of the federal government to bring together suppliers to identify solutions and technology pathways. Support domestic joint ventures where logical and consider regional roadmaps that help industries leverage existing suppliers to support manufacturing scale-up and allow regional supply chains to coalesce.” DOE has [already mapped](#) the supply chains of several clean energy technologies with extensive analysis of strategic opportunities to strengthen domestic

manufacturing. The forum provided by a VA can help develop a holistic industrial strategy by pairing this macro view of the clean technology industrial base with firms’ data on their own projected supply and manufacturing needs.

Provisions for legally sharing competitively sensitive critical information would be central to this effort. VAs can [allow firms](#) to share information about sourcing and procurement, manufacturing and production, delivery and shipping, and more; all of these data points may factor into decisions about where and when to site new facilities. By facilitating the exchange of this information among participants, a VA can help build regional investment strategies with extensive input from firms and federal agencies. Those agencies can in turn liaise with state and local authorities throughout these planning processes.

Developing viable regional strategies can then help guide investments by both firms and agencies in the VA. Polysilicon ingot and wafer manufacturing, for example, is a notable gap in the domestic solar panel supply chain. Ingot/wafer manufacturing is a capital-intensive investment, and U.S. manufacturers have been [priced out of the market](#) entirely by competitors in China.⁵³ Establishing a VA that coordinates place-based investments would help DOE find new



⁵¹ Brookings Metro [identified](#) 19 explicitly place-based programs in total across the IRA, IJJA, CHIPS, and the American Rescue Plan, including IJJA’s Hydrogen Hubs.

⁵² DOE has [separately noted](#) a regional cluster of solar manufacturing across Alabama, Florida, and Georgia that could be built upon to create more complete domestic supply chains

opportunities to secure this domestic capacity. Within the context of a VA, DOE could explore new ingot and wafer manufacturing opportunities, make such investments more viable by identifying opportunities to cluster the ingot/wafer facility with other stages of the solar supply chain, secure commitments to build domestic facilities, and help secure federal investments in the new manufacturing capacity.

Voluntary agreements cannot generate manufacturer interest out of thin air, but they can facilitate conversations—and dedicate resources—to accelerate the installation of new facilities that might otherwise take longer to develop, and coordinate facility siting across the industry to maximize output. More rapidly and effectively deploying clean energy technology would be a primary objective of any agreement DOE establishes, and centering conversations on place-based strategies would help reach that goal.

3. Coordinating Deployment of Clean Technologies

As the Biden administration ramps up procurement and deployment of clean technologies, a VA can foster communication between agencies and with clean tech manufacturers. The federal government already operates several programs that can directly deploy clean technologies, including the Low-Income Home Energy Assistance Program (LIHEAP), Weatherization Assistance Program (WAP), and various initiatives to decarbonize federal facilities, like the [Federal Building Performance Standard](#). Each of those programs is administered by a different federal agency—HHS, DOE, and the Council on Environmental Quality (CEQ), respectively—but all three direct federal resources to buying and installing clean appliances. At least one other agency, the General Services Administration (GSA), is also engaged in appliance

procurement initiatives. The U.S. government is the [world's largest buyer](#) of goods and services, and this suite of agency initiatives will likely make it the largest single customer for clean technologies.

In that context, opening formal lines of communication among these agencies and with the private sector could serve multiple purposes. First, the Biden administration can help drive the uptake of newer clean technologies. Doing so is a defined aim of the DPA—Sec. 303 of the act specifies that the president may “make provision... for the increased use of emerging technologies in security program applications and the rapid transition of emerging technologies.”⁵⁴ Certain federal offices, like DOE’s Loan Programs Office, are already well-informed about emerging technologies in the clean energy and efficiency space. DOE’s [various commercialization initiatives](#) and [Liftoff Reports](#) and GSA’s Emerging Technologies program bring further expertise in federal support for precommercial technologies. A clean tech VA would facilitate communication across such programs and with manufacturers to help drive procurement of those technologies and innovation in the sector.⁵⁵

As proposed by the [Roosevelt Institute](#), DOE can also issue advance market commitments under Title III of the DPA to become a “buyer of last resort.” The forum provided by a voluntary agreement can help DOE coordinate those commitments to meet discrete industry needs — companies can indicate where projected demand will fall short of their operations’ maximum output, and notify DOE of the opportunity to issue a commitment to support full utilization of a facility’s manufacturing capacity. To avoid any appearance of favoritism within the industry, DOE should preemptively determine objective criteria for providing support before establishing such arrangements.

⁵³ DOE attempted to [remedy this imbalance](#) in 2011 with a \$150 million loan guarantee for a novel wafer manufacturing facility, but that arrangement ultimately fell through when the borrowing company partnered with a South Korean construction firm to build a factory in Malaysia.

⁵⁴ 50 U.S.C. § 4533 (a)(1)(D)

⁵⁵ The DPA has [previously been used](#) to drive technological innovation. For example, President Jimmy Carter exercised DPA authorities to investigate alternatives to oil during the 1979 energy crisis. Similarly, President Obama leveraged Title III of the DPA for the “Great Green Fleet” initiative, supporting manufacturers producing innovative biofuels for the U.S. Navy.

There could be other opportunities for agencies to coordinate procurement through a VA, perhaps by taking the opportunity to align minimum appliance efficiency standards among retrofit programs, or engaging in joint contracts to purchase larger quantities of appliances at a lower cost per unit. Agencies can explore the feasibility of such initiatives through a VA, and should seek opportunities to align priorities and operations to maximize deployment of new and existing clean technologies.

4. Mobilizing Investments to Advance Environmental Justice

Voluntary agreements should also seek to advance the Biden administration's environmental justice commitments. The DPA offers DOE multiple pathways to pursue that aim. First, VA participants can design the place-based industrial strategy described above to support economic growth and job creation in disadvantaged and former fossil fuel communities. There would be sound financial justification for doing so—the Inflation Reduction Act sets aside historic funding for frontline communities, and numerous IRA incentives include additional funding for projects built in those places.⁵⁶

Many of these communities can also provide a labor pool with transferable skills for the clean energy economy; trade workers in roles like welding, electrical, and nondestructive testing could move from the [oil and gas industry](#) to apply those skills in clean technology manufacturing and installation. Even in frontline and fossil fuel communities without a skilled labor pool, manufacturers can commit to hiring and training local residents through [arrangements](#) similar to the commitments made by Equinor and BP in the Sunset Park neighborhood of Brooklyn. Given the DPA's focus on "industrial efficiency and responsiveness"⁵⁷ and

geographic diversity of production sources,⁵⁸ using voluntary agreements to advance such high-impact investments in disadvantaged communities can comport with the law's policy aims.

VAs can also help agencies connect firms with resources on Community Benefit Agreements (CBAs) and other tools for protecting community interests. DOE has already developed a [CBA toolkit](#) and [invaluable environmental justice guidelines](#), and the Biden administration encourages the development of CBAs in federally funded projects. Dialogues in the context of the VA also offer another touchpoint for the administration to encourage the uptake of CBAs as a standard practice, and give the opportunity to promulgate resources like DOE's toolkit. CBAs can be a valuable tool to ensure that new manufacturing facilities bring jobs and prosperity to their host communities, and a clean technology VA can be a reliable avenue for the White House to promote their use.

The tax credits and workforce opportunities described here provide strong financial justification for prioritizing manufacturing investments in disadvantaged communities, and boosted incentives for clean retrofits in low-income households make such communities ideal for rapid deployment.⁵⁹ Even so, DOE may face opposition to incorporating environmental and labor justice priorities into a VA's plan of action explicitly. VA plans [tend to](#) "keep actions narrowly tailored to respond quickly during an emergency," and action items that relate to maximizing investment in frontline and fossil fuel communities may be considered irrelevant to mobilizing an urgent industrial response to aid the national defense. DOE attorneys should make the practical case for how advancing environmental justice through the agreement's initiatives can fit with the VA's statutory purpose, and they should further explore all opportunities to formalize a commitment

⁵⁶ [IRA programs](#) with additional incentives and set-asides for low-income and environmental justice communities include the tax credit for wind and solar facilities (Sec. 13103), the clean electricity investment tax credit (Sec. 13702), rebates and incentives for clean buildings retrofits (Sec. 50121 and 50122, among others), and the Greenhouse Gas Reduction Fund (Sec. 60103), among others. See this [April 2023 report](#) from the Center for American Progress for more information on the full suite of these programs.

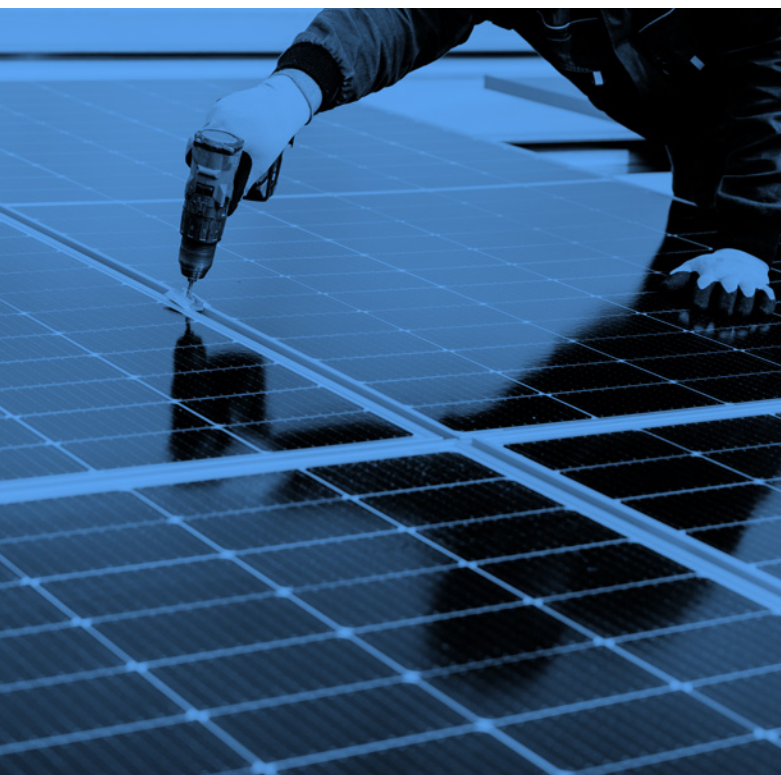
⁵⁷ 50 U.S.C. § 4502 (a)(2)(B)

⁵⁸ 50 U.S.C. § 4502 (b)(6)

⁵⁹ See, for example, the IRA's Home Energy Performance-Based, Whole-House Rebates (Sec. 50121).

to advancing justice through the voluntary agreement. If it is legally justifiable to incorporate justice and equity into the plan of action, DOE should do so.

In the same spirit, DOE should pursue the inclusion of environmental justice voices in any clean technology VA. As noted above, the DPA authorizes the president to consult with a wide range of stakeholders in building a VA, including “industry, business, financing, agriculture, labor, and other interests[.]”⁶⁰ DOE can push for “other interests” to include organizations that serve frontline and disadvantaged communities that would have a stake in the equitable deployment of clean technologies.⁶¹ Even as the mobilization toward clean energy and electrification presents novel opportunities to advance justice, it also risks reiterating many of the injustices wrought by the fossil fuel economy; ensuring the representation of grassroots-driven groups on the VA would help mitigate the threat of firms orienting the VA toward driving production and profit without regard for equity and impacted communities.



5. Supporting Workers in the Clean Energy Economy

DOE can also use a voluntary agreement as an opportunity to protect workers’ interests in the accelerated clean energy transition. In authorizing the president to “consult with” labor representatives on VAs and plans of action,⁶² the DPA clearly suggests that relevant unions can participate in an agreement alongside industry stakeholders. DOE should ensure that labor does have a voice in developing and executing any clean technology VA, and help advance high-road labor practices among all the VA participants.

DOE may be able to enshrine these labor priorities in the VA’s plan of action. Labor shortages are a major bottleneck in clean technology deployment;⁶³ to the extent that VA actions are meant to “respond quickly during an emergency,” as noted above, a clean technology agreement should seek to improve workforce development alongside its manufacturing initiatives. For example, the [heat pump, insulation, solar PV, and grid components](#) industries face labor shortages for both manufacturing and installation. Investments in material inputs and new facilities alone for these components are insufficient; effectively bolstering the domestic supply chain would also require cultivating a larger labor pool.

A DOE-run VA can facilitate collaboration between the government, industry, and organized labor to tackle such challenges. DOE [has identified](#), for example, a need to expand training programs to support the wind energy workforce. Following the model of the trucking workforce initiative detailed above on p. 22, a VA can provide a context for conversations between DOE, the Department of Labor (DOL), turbine manufacturers and installers, and labor unions to coordinate to meet growing skills gaps. To that end, the plan of action could highlight workforce development as a priority for the agreement, with

⁶⁰ 50 U.S.C. § 4558 (c)(1)

⁶¹ WE ACT for Environmental Justice, for example, [has engaged](#) directly in electrified appliance installation in public housing.

⁶² 50 U.S.C. § 4558 (c)(1)

⁶³ This issue has been extensively documented in publications including the [Washington Post](#), [Politico](#), and [Protocol](#).

collaboration between labor and industry on apprenticeships, training programs, and more.

To help train a new clean technology workforce and promote the creation of good jobs in the sector, the VA can also facilitate the formation of project labor agreements (PLAs). The clean energy sector has already seen the successful formation of a major PLA in the offshore wind industry, where organized labor negotiated landmark agreements with developers Ørsted and Vineyard Wind. That deal included funding for pre-apprenticeship and recruitment programs, with collaboration to identify necessary skills for training programs and job opportunities for the domestic workforce. By connecting unions with firms planning the construction, retooling, and expansion of facilities, a voluntary agreement could help facilitate the development of new PLAs with similar provisions to help build out the urgently needed clean technology workforce.

DOL's participation in the VA would enhance all of these initiatives. DOL programs like the [Good Jobs Initiative](#) can provide technical assistance to unions and employers considering PLAs, help connect firms with federal funding to support their hiring and training efforts, and more. The Biden administration must seek to fill every gap in the clean technology supply chain, and advancing labor priorities and workforce development in the VA with DOL's support would make meaningful progress toward that aim.

6. Setting and Hitting Moonshot Targets

A voluntary agreement could marshal industry to hit concrete “moonshot” production targets.⁶⁴ President Biden has already established high-level benchmarks for climate action, including 80 percent clean energy by 2030 and a fully net-zero economy by 2050. Analysts have modeled pathways to hitting those targets—we know approximately how many solar panels, wind turbines, heat pumps, and the like will be needed

to decarbonize the economy. A DOE-run VA can help federal agencies, in collaboration with industry and labor, identify viable intermediate benchmarks and the resources necessary to hit them.

DOE already operates an [Energy EarthShots](#) program, which sets ambitious targets for the clean technology industry. The EarthShots are, however, more focused on technological innovation and cost reductions (e.g. reducing the cost of enhanced geothermal systems by 90 percent by 2035) than on maximizing production and deployment. In the context of a voluntary agreement, DOE could build on the EarthShots program by formalizing and striving toward additional moonshot manufacturing targets. Those targets would be rooted in climate projections, some of which [have been developed](#) by DOE's own national laboratories.

We know that the Biden administration already has many of the policy levers needed to hit these clean energy deployment goals: if the White House [advances effective clean air regulations](#) alongside other executive actions and IRA implementation, the country can get to a 76 percent clean energy grid by 2030, within reach of President Biden's 80 percent goal. A voluntary agreement oriented around discrete, science-based manufacturing goals, would serve as another tool in the shed.

A VA can in fact help organize and more efficiently utilize many of the other tools in the climate policy shed. DOE's [supply chain reports](#) noted that abroad, “many governments and government coalitions have adopted coordinated, government-led strategies and industrial policies to advance and unlock significant investment in key supply chain segments.” The Roosevelt Institute's [analysis](#) of the reports says that they're also “full of instances where development of one industry is contingent on or will benefit from the development of others...[A] central insight of industrial policy research is that policies directed at one industry can have spillover benefits for other industries.” These report takeaways speak to a

⁶⁴ Economist Mariana Mazzucato has written at length about the utility of moonshot targets in building ambitious climate policy, most notably in her 2021 book *Mission Economy*.

critical fact of the clean energy transition: industries do not grow in a vacuum, and other nations have successfully built coordinating industrial policy regimes that account for the interplay between segments of the supply chain.

A VA rooted in moonshot targets can help develop a similar industrial strategy in the clean technology space. For example, models indicate that U.S. solar deployment will likely need to double every year throughout the 2020s, and then triple historical maximums in the 2030s. DOE can identify intermediate benchmarks, in terms of gigawatts of solar capacity deployed annually, to keep on track with this exponential growth. Within the framework of a VA, DOE and partner agencies can then work with industry to identify future supply chain bottlenecks, manufacturing needs, investment opportunities, and other intervention points that may limit clean energy deployment.⁶⁵

Agencies can identify which federal resources may be brought to bear to resolve those barriers before they arise, and help marshal private investment to do the same. The coordination offered by a VA, and the goal-setting that the VA could facilitate, can form the foundation of a far-ranging industrial strategy that accounts for the complexities of clean technology supply chains and puts the U.S. on equal footing with our industrial competitors and allies. Fully reaching that stage would require much more ambitious federal investments in agency capacity, but establishing a VA would be a strong place to start.

7. Maintaining Fairness in Clean Technology Industries

In developing and executing a VA, DOE must take pains to prevent anticompetitive business practices. As noted above, implementing a voluntary agreement carries risks of market distortion that would disfavor workers and raise clean technology prices. Antitrust

laws exist for a reason—they’re designed to prevent [unfair business practices](#) that might otherwise go unchecked, including price fixing, bid rigging, and competition-reducing customer allocation. By punishing such activities, the federal government [can help maintain](#) “strong incentives for businesses to operate efficiently, keep prices down, and keep quality up.” VAs risk weakening legal barriers to industry cartelization and bad business practices by providing defense against antitrust claims.

While DOE staff should investigate this concern in more depth, we can raise two immediate considerations here. First, DOE can define the scope and nature of business collaboration through the development of the VA’s written agreement. FEMA’s agreement with PPE manufacturers, for example, [strictly circumscribed](#) “information management and responsibilities,” including the stipulation that “[d]irect sharing of information among Participants will be requested only when necessary and will be closely supervised by FEMA.” That agreement’s [plan of action](#) further defined the scope of permissions with a non-exhaustive list of types of sensitive information allowed to be shared. DOE can work to avoid the anti-competitive risks of a VA by engaging in similar planning from the outset.

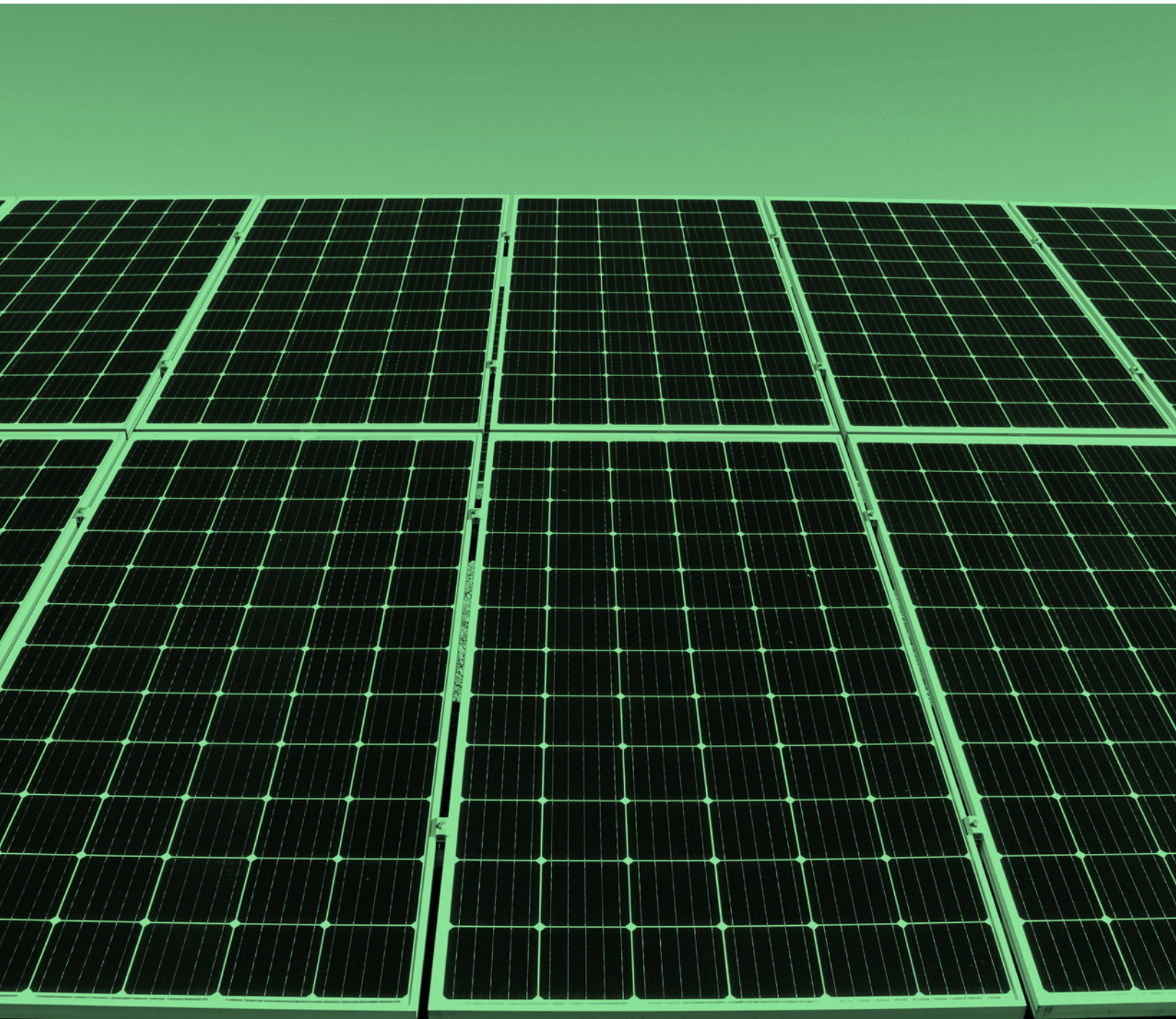
Second, DOE would not be the only entity charged with monitoring VA outcomes. The DPA directs the Attorney General (AG) and Chairman of the Federal Trade Commission (FTC) to monitor VAs and plans of action to ensure “the protection and fostering of competition and the prevention of anticompetitive practices and effects.”⁶⁶ Proactively carrying out these duties will be critical to protecting the interests of workers and ensuring fairness in the clean energy industry; while it is incumbent on DOE to develop a fair and secure VA framework, the AG and FTC Chairman should also be attentive to the agreement’s progress and step in quickly if and when needed.

⁶⁵ Building “[mission-oriented](#)” policy, as Mariana Mazzucato terms it, “requires not only the identification of missing links, failures and bottlenecks... but also recognition of the system’s strengths.”

⁶⁶ 50 U.S.C. § 4558 (g)(4)

DOE leadership under President Biden has demonstrated a clear commitment to defending workers' interests and uplifting disadvantaged communities; there is good reason to believe that the agency would manage a VA responsibly. Even so, federal policy and enforcement have historically leaned in corporations' favor, and special oversight must be exercised here. Voluntary agreements'

benefits, enumerated above, certainly outweigh their risks—but DOE and partner agencies should enter this project clear-eyed about possible pitfalls. With robust agency engagement and attention to downsides, VAs can be a powerful tool for mobilizing a rapid and equitable clean energy transition.



Industry Studies

Sec. 705 of the DPA gives the president “the authority to obtain information in order to perform industry studies assessing the capabilities of the United States industrial base to support the national defense.”⁶⁷ Crucially, the president can compel firms by regulation, subpoena, or other means to share that information within the scope of a defined inquiry. As the [Congressional Research Service wrote](#) in 2020, “this authority has many potential implications and uses.” Industry studies could be a vital tool in the Biden administration’s efforts to craft a more ambitious industrial strategy for scarce clean technologies.⁶⁸

In [their analysis](#) of DOE’s 2022 supply chain reports, the Roosevelt Institute notes that “One of the major takeaways... is that the government needs radically increased visibility into private markets if it is to meaningfully contribute to greater resilience.” Effectively enacting an industrial policy agenda would require more “data collection interventions” that overcome the challenges posed by proprietary information and complex, granular industry datasets. A [February 2023](#) piece in the New York Times affirms this point, saying that “the government may not understand enough about the companies it’s trying to help. In Taiwan and South Korea, industrial-policy agencies don’t only hand out money; they constantly gather information from the private sector and use it to adjust goals and policies over time. The I.R.A. contains very few mechanisms for this kind of in-flight course adjustment.” Industry studies can help correct for that gap.

By enhancing government insight into the operations and needs of clean technology industries, Title VII industry studies can complement any number of federal initiatives to expand the domestic clean tech manufacturing base. The VA recommended above

would facilitate more information sharing between industry and government, but the DPA’s power to compel information sharing would add a vitally important dimension to DOE’s supply chain mapping efforts. Firms would likely only be interested in data sharing to the extent it benefits their own operations; DOE can achieve further transparency to the extent it benefits domestic industry as a whole. The remainder of this section digs into two possible applications of this underutilized authority.

1. Enhancing Supply Chain Mapping Efforts

Industry studies can supplement ongoing efforts to map clean technology supply chains. The National Institutes of Standards and Technology (NIST) is already exploring initiatives in this spirit—in 2021, Congress directed NIST to study the feasibility of a National Supply Chain Database “to understand the capabilities of American manufacturers and minimize disruptions to the supply chain.”⁷² DOE noted in a [supply chain report](#) that such a resource “could be leveraged in building an Energy Sector Industrial Base database which would support analyses of critical energy sector supply chains—such as early identification of risks, dependencies, and single points of failure—to enable proactive mitigation by stakeholders.”

But DOE [also states](#) that gaps in the data to “support and improve the supply chain of critical energy materials will remain that this proposed database may not address.” Industry studies can support the collection of that missing data; if DOE wields the full extent of its DPA authority, it would even be able to secure information that the private sector might otherwise choose to retain as proprietary.

⁶⁷ 50 U.S.C. § 4555 (a)

⁶⁸ As with voluntary agreements, conducting industry studies likely wouldn’t require funding beyond support for the staff capacity required to carry them out. DOE’s existing team of supply chain experts may well be able to incorporate new industry study initiatives into their standing portfolio of work as another tool for data collection.

⁷² The CHIPS Act provided an additional \$31 million to support the development of NIST’s database.

In addition to supporting the development of a new energy sector database, DOE can apply industry studies to support ongoing supply chain and industry analyses, like the agency's [Liftoff Reports](#). The supply chain studies released to date indicate federal analysts' deep familiarity with ongoing information needs. The potential applications to DOE's suite of future research and analysis projects are sweeping, and agency staff could explore possible gaps that industry study powers stand to fill.

2. Optimizing Federal Investments

By enhancing visibility into markets and supply chains, industry studies can help guide federal investments in clean technology manufacturing. The Inflation Reduction Act will mobilize hundreds of billions of dollars for the clean energy transition, and federal agencies will have discretion over where to invest a large portion of those funds. To date, agencies have issued a slew of RFIs to solicit input on program design from the private sector, organized labor,

environmental groups, and other stakeholders. RFIs, alongside other modes of stakeholder engagement, will be critical for shaping new programs and directing the flow of this historic climate funding. But even after agencies establish program guidelines and issue FOAs, federal initiatives would benefit from deeper context on the conditions of the industry into which their dollars are flowing.

In a [methodological paper](#) on supply chain analysis, DOE argues for the importance of pursuing such context:

Granular analysis that considers the market dynamics within critical supply chains, and that can be updated as worldwide manufacturing footprints evolve and country-level incentives and tariffs change, will help position the United States for the supply chain of the future... [E]conomic and market analysis will inform a DOE strategy to enhance the competitiveness of domestic industries and accelerate the commercialization of new technologies.

Legal Prerequisites for Conducting Industry Studies

Before the president can exercise the authority behind DPA's industry studies, he must first:

issue regulations insuring that the authority of this subsection will be utilized only after the scope and purpose of the investigation, inspection, or inquiry to be made have been defined by competent authority, and it is assured that no adequate and authoritative data are available from any Federal or other responsible agency.⁶⁹

A search of the Federal Register indicates that only one federal agency, the Bureau of Industry and Security under the Department of Commerce, has issued [such a regulation](#).⁷⁰ DOE's regulations governing their priorities and allocations system makes reference to the confidentiality afforded by Sec. 705(d) of the DPA,⁷¹ but does not govern the agency's use of industry studies more broadly. Before exercising the DPA's industry studies power, DOE may therefore need to issue regulations defining the power's use. The question merits further exploration by agency staff.

⁶⁹ 50 U.S.C. § 4555 (a)

⁷⁰ 80 FR 41426

⁷¹ 50 U.S.C. § 4555 (d)

Ongoing supply chain studies are important in part because many elements of the clean technology supply chain remain opaque to the federal government. For example, [one DOE report](#) noted that “data and information on [platinum group metals] catalyst markets, supply, and demand are not freely accessible.” DOE identified this lack of data as a key vulnerability, arguing that more “information is important for both public and private decision makers to support RDD&D [research, development, demonstration, and deployment], policy development, and capital investment that will effectively advance progress in decarbonizing global economies.” President Biden identified platinum group metals as critically scarce materials in his June 2022 DPA directives; **with only a limited understanding of the components’ supply chains, agencies cannot ensure that subsequent actions to increase domestic manufacturing are maximally effective.**

President Biden can help resolve this disconnect with DPA-authorized industry studies. Several factors limit supply chain visibility generally; the Roosevelt Institute [identifies](#) barriers to obtaining proprietary information as a primary contributor. Industry studies synthesizing such data need not be made public,⁷³ but they should be incorporated into analyses that would help guide the flow of billions of dollars to more effectively support nascent clean technologies.

Ongoing data collection would be helpful even in cases where the government already has a strong understanding of market variables and projections. External factors, like the [Russian invasion of Ukraine](#), often reshape supply chains. A robust, ongoing industrial data collection effort that tracks materials flows, identifies bottlenecks, and regularly projects industry resource needs would help negotiate unexpected blows to the domestic manufacturing base as they arise.

The DPA does not specify the form that industry studies should take, only that they assess “the

capabilities of the United States industrial base to support the national defense.”⁷⁴ Industry studies under the DPA are already used to synthesize a wide range of information—[in their most common use](#), the studies “monitor trends, benchmark industry performance, and raise awareness of diminishing manufacturing capabilities.” With that flexibility, DOE could use Title VII authorities to supplement the creation of resources like the Energy Sector Industrial Base database—continuously updated datasets to inform the years-long effort of distributing IRA funding. DOE can likewise use this information to inform other DPA interventions described above; priorities and allocations powers do risk disrupting markets, and should be implemented with close attention to any knock-on effects. When DOE and partner agencies decide where to make market interventions to support manufacturing capacity and innovation, industry studies can ensure that they should do so with full information on the market context.



⁷³ Under Sec. 705(d) of the DPA, the president may deem information acquired for industry studies as confidential, and entities supplying the information may request confidentiality. Violation of that confidentiality is punishable by fine or imprisonment.

⁷⁴ 50 U.S.C. § 4555 (a)

III. Prioritizing Justice in America's Industrial Strategy

Environmental justice and support for workers must be foremost considerations as the Biden administration undertakes any of the above initiatives. Misapplied industrial policy can easily exacerbate inequities by financing polluting facilities in overburdened communities, consolidating market share among a limited number of firms, and driving the creation of low-quality jobs, among other risks. To avoid those pitfalls, the DPA authorities discussed here must advance a justice-forward industrial strategy. This section describes opportunities for the administration to uplift workers and frontline communities through action under the DPA, many of

which comport with DOE's [own recommendations](#) for centering equity, labor rights, and justice. As the Biden administration reinvigorates American manufacturing, it must grapple with the ways in which low-income communities of color have historically borne the costs of industrial growth. [Polluting facilities](#) and [dirty extraction sites](#) are disproportionately sited in overburdened and underprivileged communities. The Biden industrial strategy must fight those injustices; the DPA initiatives detailed here offer opportunities to advance justice and secure a healthy environment for every American community.



Defending Overburdened Communities

The Biden administration has already made their dedication to environmental justice (EJ) clear. Despite its notably [regressive provisions](#), the Inflation Reduction Act included historic funding for frontline communities, and the Environmental Protection Agency (EPA) under Administrator Michael Regan has shown an [unprecedented commitment](#) to tackling environmental justice issues. DOE Secretary Jennifer Granholm's [support](#) for the Office of Economic Impact and Diversity, and the appointment of Shalanda Baker, the agency's first deputy director for energy justice, are likewise both clear signals of DOE's commitment to environmental justice. The agency's DPA initiatives can continue to build on this momentum, alongside more targeted EJ initiatives through IRA implementation and executive action.

DOE can advance justice under the DPA by prioritizing investments in frontline communities, ensuring that firms do not pollute and exploit those same places, and engaging and securing lasting buy-in from local residents. An industrial strategy for a reinvigorated manufacturing and mineral extraction base⁷⁵ should be paired with parameters for that growth—strict oversight over pollution mitigation and facility siting upheld throughout the clean energy transition. To that end, the environmental justice considerations for DOE's DPA initiatives should include:

- **Ensuring that DPA-supported projects do not exacerbate cumulative impacts in frontline communities.** Cumulative pollution burdens are [well-understood](#) but presently [unaccounted for](#) in federal environmental regulations. Moving forward, DOE should be able to identify cumulative impacts as a criteria for allocating financial assistance under the DPA by leveraging pollution mapping tools

from EPA, CEQ, and other agencies. DPA initiatives should not support projects that would worsen air and water quality in communities already suffering adverse impacts.

- **Encouraging the formation of Community Benefit Agreements.** CBAs [can be a valuable tool](#) for ensuring that new enterprises bring benefits to communities by committing companies to local hiring, job training, investments in local amenities, and more.⁷⁶ DOE can incentivize the establishment of CBAs by including them in project selection criteria for programs providing financial assistance under the DPA, providing technical assistance to communities and firms interested in forming CBAs, and facilitating dialogues about CBAs in forums provided by a voluntary agreement.
- **Prioritizing vulnerable frontline communities in disaster relief efforts under the DPA.** The federal government has historically neglected low-income communities of color in their disaster recovery efforts.⁷⁷ As DOE pursues disaster recovery aid through priority purchasing and allocations, they must work against that history. It's clear that "race-neutral" initiatives ultimately favor wealthier, whiter areas — DOE should therefore leverage DPA powers with attention to the race and class composition of impacted areas, and prioritize relief for the hardest-hit communities.
- **Applying President Biden's Justice40 commitment to DPA funding.** In addition to prioritizing frontline communities during disaster recovery, DOE should consider President Biden's Justice40 commitment applicable to all clean technology investments made under the DPA. The agency has already committed to upholding that target through their Title III DPA initiatives — the April 2023

⁷⁵ Mineral extraction, the focus of President Biden's first clean energy DPA directive, is a pressing EJ issue. 97% of nickel, 89% of copper, 79% of lithium and 68% of cobalt reserves and resources in the U.S. [are located](#) within 35 miles of Native American reservations.

⁷⁶ CBAs can also bear fruit for investing firms by lowering the risk of permit rejections and improving access to state and local incentives, among other benefits.

⁷⁷ A 2019 study [found that](#) counties "with a significant share of Black, Hispanic or Native American residents often receive less money from FEMA than mostly white counties, even when suffering the same amount of damage."

[DPA funding opportunity announcement](#) for heat pump manufacturers has been “designed to help meet” the Justice40 goal. DOE should carry that commitment forward and ensure that 40 percent of all funds spent on DPA clean energy investments do flow to disadvantaged communities.

- **Consulting with representatives from frontline communities in implementation of DPA authorities.**

DOE has already solicited input from local governments, environmental and energy justice organizations, and “other interested members of the public” in its [RFI on DPA funding](#) for heat pump manufacturing and series of [DPA roundtables](#). The agency should solicit input from those same stakeholder groups as it develops and implements initiatives under Titles I and VII of the DPA, with [special attention](#) to engagement with Tribes that have a right to government-to-government consultation.

As the Biden administration has shown, *prioritizing* environmental justice is necessary for *advancing* environmental justice. When DOE considers actions to build out the domestic clean technology supply chain, it must ensure that justice is a foremost concern during program design and execution. These recommendations are initial considerations for that effort.



Supporting American Labor

Federal support for the clean energy transition must include a renewed dedication to upholding workers' interests. The federal government's turn away from proactive industrial policymaking in the 1980s coincided with [the beginnings](#) of a decades-long campaign to undermine organized labor and chip away at workers' rights and protections. Since that time, the [general economic consensus](#) has prioritized deregulation and corporate profit, under the assumption that private sector prosperity would raise all boats. That theory [has not been borne out](#), and President Biden's first term has [marked a dramatic turn](#) toward policies to invest in the middle class and reinvigorate American labor. The White House's DPA initiatives must build on this trend.

Many of this paper's recommendations focus on coordination with the private sector to maximize manufacturing output, an aim that could jeopardize workers' interests in favor of increased production and deployment. For that reason, these initiatives must also include arrangements for project labor agreements, prevailing wage standards, apprenticeships, and other key opportunities to advance workers' interests through the transition. Measures to secure such priorities should include:

- **Preferencing financial support under the DPA for firms with high-road labor practices:** Several of the recommendations in this paper entail direct or indirect financial support for individual firms in the clean tech industry, including priority procurement, Title III allocations of equipment, and obligating priority-rated orders between companies. DOE should preference such support for firms that pay prevailing wages; sponsor pre-apprenticeship, apprenticeship, and other union-affiliated training programs; and engage in PLAs and CBAs, where

appropriate.⁷⁸ For further guidance, the agency can look to the [Good Jobs Principles](#) established by DOL and the Department of Commerce, which Commerce has [already used as a metric](#) for evaluating funding applications under the CHIPS and Science Act.

- **Engaging organized labor throughout the development and implementation of DPA initiatives:** As recommended in the above section on voluntary agreements, DOE and partner agencies should engage with representatives from organized labor when considering the use of any DPA authorities. The agency has already done so in its series of RFIs regarding IRA implementation — the RFI for DPA funding for heat pumps [solicited input](#) from more than half a dozen stakeholder categories, including labor unions. DOE should also seek other ways to engage labor throughout each program's implementation, beyond the RFI phase of program development, including by structuring a voluntary agreement to include union representation.

These recommendations should serve as starting points for workers' engagement in DPA initiatives—DOE should also consult with organized labor representatives to understand how those stakeholders could best contribute to shaping these programs. Every interaction between government and industry is an opportunity to advance workers' interests. Those opportunities are especially salient in the nascent clean technology industry, which has [spotty unionization rates](#) and [uncertain pathways](#) to growing union membership. While DOE is not equipped to drive broader structural shifts in labor relations in the U.S., high-road labor standards must be a priority for the agency to help advance a truly equitable and fair transition to clean energy.

⁷⁸ See the BlueGreen Alliance's [User Guide to the IRA](#) for more detail on recommended labor standards for federally funded climate projects.



IV. Conclusion

The clean energy transition is a generational challenge and an unprecedented opportunity. President Biden, through ambitious governance and a return to industrial policymaking, has already begun to take the reins of this historic economic transformation. Complementing their diverse array of existing climate initiatives, the administration should now look to the Defense Production Act as another major tool for advancing industrial policy and securing an equitable transition. The DPA offers numerous pathways to supporting domestic manufacturing and clean technology supply chains. President Biden and the Department of Energy must wield their full authority under the law, invigorate American manufacturing, and promote fair economic opportunity for workers and frontline communities across the country.



Appendix - Recent Federal Investments in Clean Manufacturing

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Inflation Reduction Act			
Advanced Industrial Facilities Deployment Program (50161)	\$5.812 billion	Grants, rebates, and/or cooperative agreements	Provides competitive financial support to facilities engaged in energy intensive industrial processes to complete projects that reduce a facility's greenhouse gas emissions through installation or implementation of advanced industrial technologies and early-stage engineering studies to prepare a facility to install or implement advanced industrial technologies.
Funding for Department of Energy Loan Programs Office (50141)	\$3.6 billion	Loan Guarantees	Supports the cost of loans for innovative clean energy technologies. IRA provides \$40 billion of loan authority supported by \$3.6 billion in credit subsidy for projects eligible for loan guarantees.
Advanced Technology Vehicle Manufacturing Loan Program (50142)	\$3 billion	Loans	Provides loans to support the manufacture of eligible advanced technology vehicles and components under the Advanced Technology Vehicles Manufacturing Loan Program (ATVM), including newly authorized uses from the Bipartisan Infrastructure Law. Expanded uses include medium- and heavy-duty vehicles, locomotives, maritime vessels including offshore wind vessels, aviation, and hyperloop.
Domestic Manufacturing Conversion Grants (50143)	\$2 billion	Grants	Provides cost-shared grants for domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and hydrogen fuel cell electric vehicles.

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Inflation Reduction Act			
General Services Administration Emerging Technologies (60504)	\$975 million	Direct Federal Spending	Supports emerging and sustainable technologies and related sustainability and environmental programs, as part of the Federal Buildings Fund.
Enhanced Use of Defense Production Act of 1950 (30001)	\$500 million	Grants	Appropriates \$500 million to carry out the Defense Production Act (DPA). In November 2022, the Biden-Harris Administration and DOE announced a notice of intent and request for information on a proposed \$250 million DPA investment to accelerate domestic electric heat pump manufacturing.
Environmental Product Declaration Assistance (60112)	\$250 million	Competitive grants, cooperative agreements, contracts, technical assistance, direct federal spending	Supports the development and standardization of environmental product declarations, including measurements of the embodied greenhouse gas emissions of construction materials and products.
Availability of High-Assay Low-Enriched Uranium (50173)	\$700 million	Grants, contract	Supports the High-Assay Low-Enriched Uranium Availability Program activities directed in section 2001 of the Energy Act of 2020, including supporting the establishment of a diverse, market-based supply chain for HALEU.
Climate Pollution Reduction Grants (60114)	\$5 billion	Grants	Provides grants to Tribes, states, air pollution control agencies, and local governments to develop and implement plans for reducing greenhouse gas emissions.
Clean Hydrogen Product Tax Credit (13204)	\$7.8 billion†	Tax credit	Provides a tax credit for the production of clean hydrogen at a qualified domestic clean hydrogen production facility.
Advanced Energy Project Credit (13501)	6.3 billion†	Tax credit	Provides a tax credit for investments in advanced energy projects. Businesses can claim a 30 percent credit for projects meeting prevailing wage and apprenticeship requirements.

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Inflation Reduction Act			
Advanced Manufacturing Production Credit (13502)	\$30.6 billion	Tax credit	Provides a production tax credit for domestic manufacturing of components for solar and wind energy, inverters, battery components, and critical minerals.
Credit for Carbon Oxide Sequestration (13104)	\$3.2 billion†	Tax credit	Provides a credit for carbon dioxide sequestration coupled with permitted end uses within the United States, including injection for enhanced oil recovery and other utilization.
Production Tax Credit for Electricity from Renewables and Clean Electricity (13101 & 13701)	\$62.3 billion†	Tax credit w/ domestic content incentives	Provides tax credits for production of electricity from renewable and clean sources (0.3 cents/kW). In addition to incentives for high-road labor practices and investment in energy communities, the credits support domestic manufacturing through a credit increase of 10 percent if the project meets certain domestic content requirements for steel, iron, and manufactured products.
Investment Tax Credit for Energy Property and Clean Electricity (13102 & 13702)	\$64.9 billion†	Tax credit w/ domestic content incentives	Provides tax credits for investment in renewable energy projects and facilities that generate clean electricity. In addition to incentives for high-road labor practices and investment in energy communities, the credits support domestic manufacturing through a credit increase of 10 percent if the project meets certain domestic content requirements for steel, iron, and manufactured products.
Clean Vehicle Credit (13401)	\$7.5 billion†	Tax credit w/ domestic content requirements	Provides a tax credit for purchasers of clean vehicles. \$3,750 credit for vehicles meeting critical minerals requirement. Additional \$3,750 credit for vehicles meeting the requirement that a threshold percentage of battery components be manufactured or assembled in North America. Starting in 2024, qualifying vehicles cannot have battery components manufactured or assembled by a foreign entity of concern. Starting in 2025, qualifying vehicles' batteries cannot contain critical minerals extracted, processed, or recycled by a foreign entity of concern.

† Rounded tax credit cost estimates from the [Congressional Budget Office](#).

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Infrastructure Investment and Jobs Act			
Regional Clean Hydrogen Hubs (40314)	\$8 billion	Grants, contracts, cooperative agreements, and other agreements authorized under federal law	Supports the development of at least 4 regional clean hydrogen hubs to improve clean hydrogen production, processing, delivery, storage, and end use
Battery Manufacturing and Recycling Grants (40207)	\$3 billion	Grants	Provides grants to ensure that the United States has a viable domestic manufacturing and recycling capability to support a North American battery supply chain.
Battery Materials Processing Grants (40207)	\$3 billion	Grants	Provides grants for battery materials processing to ensure that the United States has a viable battery materials processing industry. Funds can also be used to expand domestic capabilities in battery manufacturing and enhance processing capacity.
Battery and Critical Mineral Recycling (40207)	\$125 million	Grants	Awards grants for research, development, and demonstration projects to create innovative and practical approaches to increase the reuse and recycling of batteries. Manufacturing entities are eligible recipients.
Advanced Energy Manufacturing and Recycling Grants (40209)	\$750 million	Grants	Provides grants to small- and medium-sized manufacturers to enable them to build new or retrofit existing manufacturing and industrial facilities to produce or recycle advanced energy products in communities where coal mines or coal power plants have closed.
Clean Hydrogen Manufacturing Recycling Research, Development, and Demonstration Program (40314)	\$500 million	Grants, contracts, cooperative agreements, etc.	Provide Federal financial assistance to advance new clean hydrogen production, processing, delivery, storage, and use equipment manufacturing technologies and techniques.
Industrial Emission Demonstration Projects (41008)	\$500 million	Grants, cooperative agreements, or other	Funds demonstration projects that test and validate technologies that reduce industrial emissions, including production of iron, steel, and other industrial materials.

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Infrastructure Investment and Jobs Act			
Industrial Research and Assessment Centers (40521)	\$150 million	Grants	Provides funding for institutions of higher education-based industrial research and assessment centers to identify opportunities for optimizing energy efficiency and environmental performance at manufacturing and other industrial facilities.
Industrial Research and Assessment Center Implementation Grants (40512)	\$400 million	Grants	Funds upgrades for small- and medium-sized manufacturers that have been recommended in an assessment from an Industrial Assessment Center, Combined Heat and Power Technical Assistance Partnership, or an approved third-party performing an equivalent assessment.
Wind Energy Tech Recycling Research & Development (41007)	\$40 million	Cooperative agreements	Awards financial assistance to eligible entities for research, development, and demonstration, and commercialization projects to create innovative and practical approaches to increase the reuse and recycling of wind energy technologies, including alternative manufacturing processes.
New Solar Research & Development (41007)	\$20 million	Cooperative agreements	Awards financial assistance to eligible entities for research, development, demonstration, and commercialization projects to advance new solar energy manufacturing technologies and techniques.
Marine Energy Research, Development, and Demonstration (41006)	\$70.4 million	TBD	Funds research, development, and demonstration activities to improve marine energy technologies, including to identify and study critical short-term and long-term needs to maintain a sustainable marine energy supply chain based in the United States.

Program Name (Bill Section No.)	Funding Level	Funding Mechanism	Program Description
Infrastructure Investment and Jobs Act			
Energy Efficient Transformer Rebates (40555)	\$10 million	Rebates/grants	Provides rebates to industrial or manufacturing facility owners, commercial building owners, multifamily building owners, utilities, or energy service companies for the replacement of a qualified energy inefficient transformer with a qualified energy efficient transformer.
Manufacturing Leadership (40534)	\$50 million	Grants	Provides funding to States to provide assistance to small and medium manufacturers to invest in smart manufacturing technologies or access high-performance computing resources for manufacturing analysis.
Critical Material Innovation, Efficiency, And Alternatives (41003)	\$600 million	Grants	Funds a program of research, development, demonstration, and commercialization to develop alternatives to critical materials, to promote their efficient production and use, and ensure a long-term secure and sustainable supply of them.
Carbon Capture Large-Scale Pilot Programs (41004)	\$937 million	Cooperative agreements	Establishes a carbon capture technology program for the development of transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities.
Carbon Capture Demonstration Projects Program (41004)	\$2.537 billion	Cooperative agreements	Establishes a carbon capture technology program for the development of six facilities to demonstrate technologies such as those developed in the Carbon Capture Large-Scale Pilot Programs. Two of the six facilities will be industrial and not purposed for electricity generation.

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