

Just Transition in the United States

Opportunities and Challenges for the Biden Administration
Plans for Displaced Fossil Fuel Workers

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CLIMATE
ADVISERS

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Executive Summary

The energy transition now underway in the United States, and in economies throughout the world, is expected to accelerate in the coming years and decades. The increase in renewables in the electricity sector will bring about declining use of fossil fuels, with coal the most vulnerable. Likewise, as vehicles that run on electricity or other alternative fuels become more common, the petroleum sector will face repeated existential threats. Against this backdrop, governments will have to ensure that this energy transition is equitable for the workers who are most adversely affected. Without a just transition – when affected workers and communities receive the support they need to transition to new jobs and find new sources of revenues – economies could see massive labor disruptions, civil unrest, long-term unemployment for certain segments of the population, deepening political polarization, and a backlash against climate-friendly policies.

In the United States, President Biden, who ran on the most ambitious climate platform in American history during the 2020 election, is seeking to decarbonize the entire economy and reach net-zero emissions by 2050. To achieve this goal, the energy transition will support investment, growth, and job creation in renewables and transportation, along with other sectors. In order to successfully realize the administration's climate goals, there needs to be a framework in place to provide a just transition for fossil fuel workers who have been or could be left behind. Even though President Biden has already made this a priority through his executive orders and infrastructure agenda early in his presidency, he has yet to establish a robust, long-term just transition plan. While the Biden administration has said it will prioritize funding for environmental justice measures, clean energy infrastructure, and support for unions, it has yet to detail the specifics on how President Biden will establish trust with fossil fuel workers, develop a safety net for transitioning workers, work with local stakeholders, and provide enough resources for a program to work long-term. Once fully developed, the Biden administration's policies on just transition will likely be incorporated into its messaging and strategy in international fora, as discussions and programs on just transition are taking place in countries around the world, with varying approaches and results. As part of their broader effort to reassure the international community that the United States is once again committed to climate action, President Biden and administration officials plan to emphasize their efforts to end coal financing and make coal use unacceptable globally. At the same time, the administration recognizes the difficulties these efforts will create for countries that are heavily dependent on coal and the need to reassure such countries to ensure a positive outcome in Glasgow.

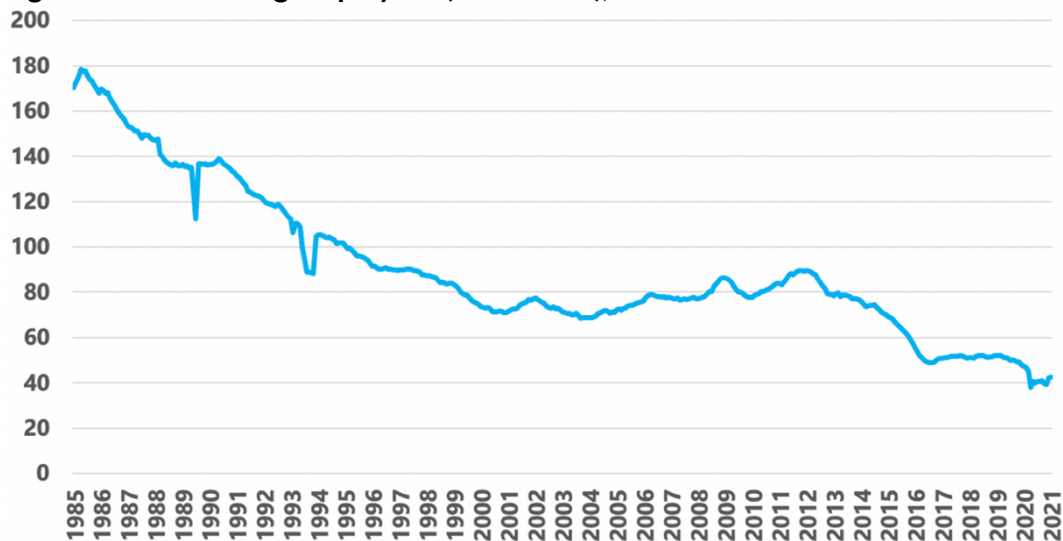
Although the Biden administration has made tackling climate change and supporting a just transition to a clean economy a priority, there will be inevitable hurdles, many of which could derail plans the administration puts in place. The United States has not historically taken care of displaced workers very well, and the country as a whole does not yet have a consensus on just transition as an idea, let alone what policies are needed. Local communities will need sufficient funding from the federal government to put robust programs in place, but the nation's high debt levels could limit spending and undercut ambition for major initiatives. Also, with climate change a contentious issue between the two parties, it is unlikely that the Biden administration will receive bipartisan support for programs that transition away from the fossil fuel industry. Moreover, for a successful transition to effectively work and be equitable, it needs continued long-term support, but future

changes in Congress or the White House could hinder any progress that President Biden makes early in his administration.

Introduction

The energy landscape in the United States is changing dramatically amid increased environmental regulation at the state and federal levels, declining costs for renewables, persistently low oil and gas prices, and the negative reputation of fossil fuels. In just the past decade, the coal industry has been impacted the most by these changes, seeing its market share in the electricity sector dropping from 51 percent in 2001 to 23 percent in 2019.¹ Since 2011, the number of job losses in the coal mining sector has accelerated, falling by more than half, part of a sharp downturn that began in the mid-1980s (see **Figure 1** below).² With the sector expected to continue to decline, more and more communities that have depended on coal for their local economies will see numerous disruptions, particularly an increase in unemployed workers, not to mention the loss of businesses that are connected to the coal industry. Moreover, state and local governments dependent on the fossil fuel sector for tax revenue will see declines and strained budgets. In the coming decades, there will be even more shifts, with renewables gaining more share of the electricity market, further undermining coal and also weakening the natural gas industry, while increased electrification in the transportation sector may bring about stranded assets in the oil and refining sectors, causing worker layoffs.

Figure 1: Coal Mining Employees (Thousands), 1985-Present



Source: [US Bureau of Labor Statistics](#)

The dilemmas that the United States is now facing are a reflection of what is happening worldwide. In the few countries where the energy transition is occurring relatively quickly, there have been labor disruptions and protests. As leading countries move from their dependence on fossil fuels to

¹ "What is U.S. electricity generation by energy source?" Energy Information Administration, November 2, 2020, <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>.

² U.S. Bureau of Labor Statistics, March 6, 2021, <https://data.bls.gov/timeseries/CES1021210001>

decarbonize their economies in line with the Paris Agreement, governments, industry, and labor are taking steps to ensure that the transition is fair but having mixed results. In France, for instance, the Yellow Vest movement that took off in late 2018 sparked months of street protests as workers criticized the government's increase in fuel taxes. Germany, meanwhile, is pouring billions of euros into coal-dependent areas to phase out the fuel by 2038, a date that has been criticized by some in the international climate community.³ Other countries, such as Poland and Canada, are also grappling with transitioning away from coal. But for the most part, coal demand remains high globally and governments have yet had to grapple with mass layoffs of fossil fuel workers.

In the United States, the climate community and the labor movement both understand the complications and dangers that come with recent and future trends, as communities could be devastated economically, and many workers could see extended periods of unemployment. Against this backdrop, the federal government under the Biden administration will have to work with local stakeholders, advocacy NGOs, and both the clean energy and fossil fuel industries, to outline and implement "just transition" initiatives that provide equity and opportunities for workers in coal communities, offering them retraining programs, adequate compensation, and well-paying jobs in more sustainable industries. The importance of an adequate just transition program matters not only for those hurt by the decline in coal; it also matters for other areas that are highly dependent on other fossil fuels, such as oil and gas, which will also likely decline in importance in the next couple of decades amid the country's efforts to decarbonize the economy. The Biden administration will attempt to pair decarbonization efforts with just transition initiatives to make his climate agenda more durable and get buy-in from a wide range of stakeholders.

This report will examine how President Biden's climate response programs will help to facilitate a just transition, as well as how they could be realized politically and be successfully implemented in fossil-fuel dependent areas. The report will also examine how the environmental justice movement in the United States is tied to the push for adequate programs for just transition. President Biden, during the presidential campaign, called for 40 percent of his \$2 trillion climate plan to go to environmental justice programs. Environmental justice, which aims to support communities -- chiefly those of color -- that have been disproportionately affected by polluted water and air, would include just transition programs. The report highlights the risks of articulating and implementing a just transition strategy, such as a polarized Congress, the country contending with the ongoing COVID-19 emergency, a soaring national debt, and the need for dedicated, long-term funding. The report also examines the Biden administration's foreign policy and the implications internationally for a just transition, including its plans for LNG exports and coal financing.

Defining a Just Transition

Whether from market forces, technology, trade, or government regulations, labor market disruptions can lead to widespread job losses and dramatic changes in local economies. If left to fend for themselves, these transitions can be devastating for affected workers and communities.

³ Florence Schulz, "Germany begins allocating 40 billion euros to coal regions to start phase-out," *Euractiv*, August 31, 2020, <https://www.euractiv.com/section/energy/news/germany-begins-allocating-e40-billion-to-coal-regions-to-start-phase-out/>.

As this term is widely understood, a “just transition” is one in which affected workers and communities get the support they need to transition to new jobs, find new sources of revenue, and otherwise do what is necessary to maintain a decent standard of living. For instance, just transition programs may seek to replace lost jobs with quality equivalent positions that provide sufficient wages, healthcare, working conditions, and retirement savings. In the United States, discussions of a just transition have typically -- but not always -- been connected to extractive industries, particularly coal, and concern efforts to help laid-off workers thrive in an evolving economy that emphasizes a cleaner environment and emissions reductions. A program that facilitates a just transition for these workers looks to best manage the fallout from changes of both the production and consumption of fossil fuels and can be replicated across communities.

Discussion of a just transition has a long history in the United States. In the 1980s and 1990s, workers losing their jobs from trade deals such as NAFTA or changes such as the federal Superfund law marked the realization that globalization, government regulation, and environmental laws can disproportionately affect certain communities in negative ways even if the policies have broader positive impacts.^{4, 5} The issue has garnered more attention in recent years and has taken on greater urgency, in large part because of the acceleration of energy market shifts and innovation. Moreover, a greater emphasis on environmental justice, deteriorating labor conditions from COVID-19, and job losses in major “swing” states have alerted policymakers, advocacy groups, and labor unions that just transition measures are necessary. Communities hurt in the past by sweeping policies or market shifts have not fully recovered from economic dislocations and labor losses. Recognizing this and seeing the displacement of coal over the past decade due to cheap natural gas and renewables, stakeholders realize that the time to plan for the transition is now.

Supporting a just transition is related to but distinct from the environmental justice movement in the United States, which grows out of concerns about pollution in urban areas associated with fossil fuel infrastructure. Low-income communities and people of color, in particular, have been hurt disproportionately by their close proximity to sources of pollutions such as coal plants or oil refineries.⁶

Environmental justice issues have come to occupy a more central place in the broader climate conversation in recent years as a result of two factors. First, in late 2018 and 2019, many prominent lawmakers and NGOs threw their support behind the Green New Deal, a comprehensive framework introduced in early 2019 to significantly cut emissions in the United States while also providing social justice measures such as a jobs guarantee, universal basic income, universal healthcare, and other measures to fight against poverty. The idea behind the Green New Deal is to structurally reform society and the overall economy while fighting the worst effects of climate change. Although President Biden has not embraced the entire Green New Deal package, he has endorsed parts of it, including its emphasis on environmental justice. The second is the heightened concern about racial justice issues more generally as a result of the murders of Breonna

⁴ Matthew S. Henry, Morgan A. Bazilian, and Chris Markuson, “Just Transitions: Histories and futures in a post-COVID world,” the National Center for Biotechnology Information, July 10, 2020, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7351418/>.

⁵ The EPA Superfund Program was set up in 1980 to clean up contaminated areas and respond to emergencies that harm the environment.

⁶ For details, see (e.g.) Michelle L. Bell and Keita Ebisu, “Environmental Inequality in Exposures to Airborne Particulate Matter Components in the United States,” *Environmental Health Perspectives* 120, no. 12 (December 2012): 1699-1704.

Taylor in Kentucky, Ahmaud Arbery in Georgia, and especially George Floyd in Minnesota. These events helped to focus attention on a variety of issues faced by people of color and provided the context for elevating issues including the negative health impacts from water or air pollution for “fence-line” communities living near fossil fuel infrastructure and coal-fired power plants. These inequities are a result of decades of discrimination and misguided and unequal regulatory policies. As a result of increased attention to these issues, Democrats including President Joe Biden made concerns about environmental or climate justice issues arising at the nexus of race, poverty, and pollution a crucial part of their campaigns.

Generally speaking, advocates for a just transition are concerned about somewhat different issues than are environmental justice advocates, but there is some overlap. Like fence-line communities exposed to heavy metals and particulate pollution from oil refineries, coal miners, other fossil fuel workers, and surrounding communities may be exposed to myriad health risks as a result of their proximity to fossil fuels and related infrastructure.⁷ In addition, the creation of well-paying clean energy jobs in fossil fuel-dependent communities helps not only to support a just transition but also to bring about the co-benefit of reducing localized pollution, which helps underserved communities.

Just Transition Programs in the United States

The United States has seen mixed success in transitioning workers and communities from reliance on fossil fuels to a growing sustainable economy with well-paying jobs. Past and current initiatives can help provide guidance for government-led programs that aim to formulate a long-term strategy for transitioning fossil fuel workers. This section will look at different programs in various parts of the country that support a just transition.

The Appalachian Regional Commission

The Appalachian Regional Commission (ARC) has been a program that has helped workers in coal communities – but its overall effectiveness has been uncertain as economic development in the region still lags the rest of the country. ARC, first established in 1965, is a multi-state initiative that is supported by federal funds. The main goal of ARC is to bolster the economies of Appalachian areas, which stretch from New York to Mississippi and have consistently fallen behind the rest of the country, experiencing high rates of unemployment, infant mortality, drug abuse, poverty, and other problems. Since coal production has been a major pillar of many Appalachian areas, ARC has focused on supporting laid-off coal workers in recent years to alleviate fallout from shuttered plants. ARC has provided funds earmarked for coal transition, laid important groundwork for a multi-state program, and, crucially, listened to feedback from workers and community members.

In 2015, the Obama administration established the Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative within ARC to focus solely on addressing worker dislocations along the coal supply chain and creating economic diversity. From 2016 to 2019, the initiative received

⁷ On health risks faced by coal workers, see <https://www.cdc.gov/niosh/docs/2011-172/pdfs/2011-172.pdf>. Regarding the impacts of fracking on drinking water, see <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990>.

\$150 million in Federal funding while raising almost \$800 million from private industry for the Appalachian region.⁸ Multiple government agencies have been involved in developing programs and allocating funds, which go toward supporting small businesses, developing workers, building infrastructure, investing in natural assets, and providing leadership in communities.⁹ One strength of the POWER Initiative is that it is a federal program that targets certain communities that have been reliant on a specific commodity -- coal. It was built off of an already existing program in ARC and it could be used as a model for other areas. However, despite the continued funding for the POWER program, it has yet to create widespread change in these areas and there have not been any comprehensive studies on whether it can reach its goal of alleviating long-term economic distress in the region.¹⁰

California Cases

On the opposite end of the country, California has also been dealing with a just transition, albeit mostly with different energy markets. Unions and environmental groups struck an agreement with utility PG&E to support workers and the local community as it planned to decommission its Diablo Canyon nuclear plants. The utility provided funds to the local community to offset lost tax revenue, while supporting job retraining and compensation for workers. Also, PG&E will be able to provide jobs by transitioning the plant into a renewables and storage facility.¹¹ The state now is looking to create similar programs for its oil sector amid a structural shift taking place. California has 15 oil refineries, down from 20 in 2010, and 32 in 1990.¹² The remaining refining capacity could shut down in coming decades as the state plans to aggressively transition to electric vehicles. Similarly, the California's crude oil production has fallen significantly over the decades and the state plans to phase out hydraulic fracturing by 2027.¹³ Against this backdrop, California has had to, and will continue to, contend with laid-off oil industry workers. Governor Gavin Newsom signed an executive order last year for a just transition roadmap to be completed by the middle of this year. This roadmap will focus on economic diversification; high-quality jobs; education and training; industry transition; social safety nets; and a process to include diverse voices.¹⁴ The state government realizes it has to work with industry to support dislocated workers. A successful transition for oil industry workers with efforts such as managed closures or converting facilities into renewable energy plants could ease hardships and provide opportunities for the workforce.¹⁵ If California succeeds, it has the potential to provide a blueprint for the rest of the United States, across various industries. However, since the state's just transition actions and plans are still relatively new, it is unclear how effective they will be long-term in supporting displaced workers with providing them what they need and whether other states that have fossil fuel industries would follow California's model.

⁸ Michael H. Cecire, "The POWER Initiative: Energy Transition as Economic Development," Congressional Research Service, November 20, 2019, <https://fas.org/sgp/crs/misc/R46015.pdf>.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Gavin Bade, "PG&E to close Diablo Canyon nuclear plant, replace it with renewables, efficiency, storage," *Utility Dive*, June 21, 2016, <https://www.utilitydive.com/news/pge-to-close-diablo-canyon-nuclear-plant-replace-it-with-renewables-effi/421297/>.

¹² "Petroleum & Other Liquids: California Number of Operable Refineries as of January 1," Energy Information Administration, https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=8_NA_800_SCA_C&f=A.

¹³ "Petroleum & Other Liquids: California Field Production of Crude Oil," Energy Information Administration, <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPCA2&f=A>.

¹⁴ Governor's Office of Planning and Research, <https://opr.ca.gov/economic-development/>.

¹⁵ Justin Gerdes, "California's oil industry could become a just transition model," *Energy Monitor*, September 21, 2020, <https://energymonitor.ai/policy/just-transition/californias-oil-industry-could-become-a-just-transition-model>.

Other Local Initiatives

Other areas have also brought the issue of just transition to the forefront. Both Colorado and New Mexico have underscored the importance of a just transition by passing legislation in 2019 to deal with the issue.^{16 17} These two states have not only coal-fired generation but also significant oil, gas, and mining activity. Colorado and New Mexico will have to contend with laid-off workers in these sectors for decades to come, and establishing advocacy in this area is a proactive step to offset future economic hardships.¹⁸ In Peoria, Illinois, meanwhile, local groups took legal action against the owners of a local power plant to guarantee a just transition for its workers and funding for low-income and communities of color as it shuts down by the end of 2022 -- an example of just transition and environmental justice without following a government framework.¹⁹

While the initiatives at the regional, state and local levels are welcomed by environmentalists, labor unions, and even some in industry, they do not fully compensate for the need for leadership at the federal level. The coal sector, and most likely the entire fossil fuel industry, will face steep declines in coming years, which will force both President Biden and Congress to expand their efforts and provide a national framework and necessary funding.

President Biden's Just Transition Plans

During the 2020 presidential campaign, the United States faced a number of crises, all of which were connected and have not ebbed. COVID-19 raging across the country caused a healthcare emergency, the economy and labor market were vulnerable to huge shocks, racial unrest spread to ongoing protests in major cities, and the fight against climate change had been neglected at the federal level. In order to combat these crises, President Biden, during the campaign, understood that he had to confront all at the same time. Shaping his agenda, President Biden saw various climate measures that addressed environmental and climate justice and a just transition as actions he and Congress could take to tackle these crises. Centering on clean energy jobs and other climate programs could help the labor market recover, provide stimulus in a post-COVID world, create good-paying jobs for various demographics, reduce pollution across communities, particularly those of color, and design a blueprint to decarbonize the economy while supporting fossil fuel workers in this transition.

In his initial round of executive orders to address climate change soon after he was inaugurated, President Biden established the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, an initiative to ensure a just transition in hard-hit

¹⁶ "Governor signs landmark energy legislation, establishing New Mexico as a national leader in renewable transition efforts," Office of the Governor Michelle Lujan Grisham, March 22, 2019, <https://www.governor.state.nm.us/2019/03/22/governor-signs-landmark-energy-legislation-establishing-new-mexico-as-a-national-leader-in-renewable-transition-efforts/>.

¹⁷ "Just Transition Action Plan," Colorado Department of Labor and Employment, December 31, 2020, <https://cdle.colorado.gov/press-releases/press-release-just-transition-action-plan>.

¹⁸ The Office of Just Transition, Colorado Department of Labor and Employment, <https://cdle.colorado.gov/the-office-of-just-transition>.

¹⁹ Brian Palmer, "This Is What a Just Transition Looks Like," Natural Resources Defense Council, March 2, 2020, <https://www.nrdc.org/stories/what-just-transition-looks>.

areas.²⁰ The executive order tasks all agencies across the federal government to develop plans to work with states, cities, and other stakeholders to revitalize areas that have seen declining economic conditions. The administration recognizes that multiple Federal agencies need to coordinate action for plans to be effective. This Group will send the President a report outlining a plan for grants, loans, technical assistance, financing, and other programs to support the communities that need Federal assistance for a just transition.

The Working Group's ability to design measures to support a just transition for fossil fuel workers will depend on the following: establishing trust, developing a safety net for transitioning workers, working with local stakeholders, and providing enough resources for the program to work. Still, despite the Biden administration elevating the importance of environmental justice and seeing the opportunity – and necessity -- to move fossil fuel workers to clean energy, the current political environment is tilted toward polarization which may weaken or fully derail President Biden's plans.

Establishing Trust

Many in fossil fuel-dependent communities look at just transition programs with suspicion. Some see the term as essentially meaningless given failed efforts to help dislocated workers in the past. Even though the U.S. economy's dependence on fossil fuels, particularly coal, is forecast to decline, many workers in these sectors do not believe the shift will be “just,” no matter how much policymakers suggest they support them. This is particularly sensitive for Democrats such as President Biden who want to accelerate the decline of fossil fuel consumption and production through new policies. As a result, the anger toward fossil fuel plant closures, whether from market forces or government regulation, can spark backlash in hard-hit areas. In Wyoming, for instance, where towns are dependent on revenue from coal, oil, and gas, workers have “contested” the idea of just transition, arguing that they do not accept the phasing out of their respective sectors.²¹ The sentiment is reflected throughout fossil fuel and extractive industries. The leader of the United Mine Workers of America, for instance, asked: “How do you think we're going to believe that you're going to be able to give us a just transition from the coal industry to some other employment?”²² The Biden administration has already faced criticism from labor unions and fossil fuel workers after he signed an executive order to halt the construction of the Keystone XL pipeline. Despite these concerns, workers in these industries are expecting to find a partner in the Biden administration to turn the inevitable market changes they're facing into a just transition.²³

The Biden administration, along with local officials and NGOs, can gain trust from industry workers by gathering feedback from various stakeholders about their needs to come up with potential solutions. Sustainable development in these communities would require ongoing dialogues and

²⁰ Executive Order on Tackling the Climate Crisis at Home and Abroad,” The White House, January 27, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>.

²¹ J. Minjin Cha, “A just transition for whom? Politics, contestation, and social identity in the disruption of coal in the Powder River Basin,” *Energy Research & Social Science*, November 2020, <https://www.sciencedirect.com/science/article/abs/pii/S2214629620302322>.

²² Ohio Valley ReSource, “Just Transition: Amid Climate Debate and Coal's Decline West Virginia Considers Its Future,” *West Virginia Public Broadcasting*, February 17, 2020, <https://www.wvpublic.org/news/2020-02-17/just-transition-amid-climate-debate-and-coals-decline-west-virginia-considers-its-future>.

²³ Kate Yoder, “America's largest coal miners' union supports clean energy (with conditions)” *Grist*, April 20, 2021, <https://grist.org/energy/americas-largest-coal-miners-union-supports-clean-energy-with-conditions/>.

the understanding that climate policies will continually have social impacts, which brings about the need to be proactive to develop solutions for those affected. With the issue of establishing just transition measures now more urgent as the energy transition accelerates, an increasing number of stakeholders have made and will continue to make their voices heard. For instance, a number of environmental, coal, Indigenous, and labor groups sent a letter to President Biden in January to follow through on his campaign promise to support coal workers as he implements a clean energy agenda.²⁴ This group published its own National Economic Transition platform that it hopes the administration will follow.²⁵ A long list of influential stakeholders, led by labor unions, the BlueGreen Alliance, and the Just Transition Fund, will continue to exert pressure on the administration to target coal and other communities that are in danger of being left behind with adequate economic support. Working with these groups can help build the necessary trust.

Developing Living Wages, Safety Net

In the fossil fuel industry, some jobs are temporary contracting positions, but a large number provide long-term employment, with stable pay and benefits. Plus, many in the industry take pride in their jobs -- they help provide their communities with energy sources and are part of the systems that keep the global economy growing. In order for workers who have been laid off to benefit from a just transition program, they would want to have long-term stability and work in positions that are seen as providing dignified experiences.

President Biden's plan looks to tackle these issues by focusing on union jobs. "The future rests in renewable energy," President Biden, who said that these jobs will provide "good union wages."²⁶ This is attractive to workers because union jobs secure benefits for workers and employers. Specifically, unions also allow for collective bargaining on health insurance and retirement funds, which provide a safety net for workers. Moreover, they can help support negotiations for wages, which pushes other employers to compete for quality workers. Union benefits allow for workers to take pride in their work and be more productive and efficient.

The insufficiency of the U.S. safety net creates insecurity for non-union workers, particularly since healthcare is usually provided by employers and most do not provide pensions. If workers leaving the fossil fuel industry benefit from new union jobs with an adequate safety net in another sector, the transition will be much smoother than moving to positions that are only temporary or do not provide adequate benefits. Currently, approximately 20 percent of workers in fossil fuel production are in unions, quadruple the amount in wind and solar.²⁷ For Biden's just transition plan to work, the number of workers in unions in the renewable sector would need to increase significantly in order to ensure permanent employment. Just as important, programs would not necessarily need to target the renewable energy industry for former fossil fuel workers -- not every community will necessarily have a burgeoning wind and solar industry to create a workforce to make up for lost jobs. Still, wind and solar PV plants can be built near coal plants that have retired

²⁴ Letter to President Biden and Vice President Harris, https://appvoices.org/images/uploads/2021/01/NET-Office-Cover-Letter-to-Biden-Admin_FINAL.pdf.

²⁵ National Economic Transition Platform, <https://nationaleconomictransition.org/>.

²⁶ Tim McDonnell, "The story behind Biden's plan to create climate jobs that pay 'good union wages,'" *Quartz*, October 15, 2020, <https://qz.com/1918202/the-meaning-behind-joe-bidens-job-creating-climate-plan/>.

²⁷ *Ibid.*

or will shut down in coming years, which could bring new job opportunities to areas that are impacted.²⁸ Researchers, policymakers, and business communities have identified where most job losses will occur, allowing for them to proactively develop strategies and legislation to manage transitions in those areas before a crisis occurs.²⁹

Local Stakeholders

The issue of just transition is a nationwide problem, but each city and state will have to handle the issue in its own way. Although there are basic principles that a just transition program can follow, there is no “one-size-fits-all” approach to the problem throughout the United States. As noted in the examples above, the situations in California, Appalachia, and Illinois were all handled differently. Still, the federal government plays a crucial role in spurring just transition through elevating the importance of the issue through communication efforts, providing funds for programs, and coordinating action among various partners. By convening multiple agencies and establishing a national plan, the Biden administration can align federal programs with local communities. Crucially, though, it would need to allow local stakeholders to take the lead as they are most knowledgeable about the wishes and demands of their communities.

The main areas that are seeing or will see layoffs from shuttered fossil fuel plants are key coal-producing states. These include Wyoming, West Virginia, Pennsylvania, Illinois, and Kentucky. These states combined account for about 70 percent of the country’s coal output and have already been hit by the industry’s downturn. It’s not only workers in the extractive industries that are of concern, but also businesses that are connected to them, such as service companies along the supply chain and local establishments like restaurants. The federal government would have to work with companies, civil society, state and city officials, and investors to ensure that there are tailored solutions for each state and a “bottoms-up” process takes place.

It is not only coal-industry areas that the federal government will take into consideration. Although it is not yet in a dire situation like coal, the oil and gas sector is projected to see rapid changes due to market forces and technological innovation in coming decades, which would likely undermine job potential. Oil and gas are already cyclical, causing massive layoffs at times. For instance, when oil prices fell sharply in 2014-15 from overproduction and in 2020 from COVID-19, certain areas were hard hit.³⁰ In fact, at the end of 2020, the number of jobs in the oil and gas sector fell to the lowest level in decades.³¹ Oil-producing states such as Texas, North Dakota, Louisiana, and Oklahoma have seen perpetual volatility in job prospects in this sector, which has not only hurt workers in the state but also tax revenue from the industry that the states rely on. To facilitate a just transition, these areas would have to think long-term about transitioning workers out of the oil industry. Similarly, ongoing low natural gas prices and increased competition from renewable

²⁸ “2035: The Report,” Goldman School of Public Policy, University of California-Berkeley, June 2020, <http://www.2035report.com/wp-content/uploads/2020/06/2035-Report.pdf>.

²⁹ Molly Seltzer, “Big but affordable effort needed for America to reach net-zero emissions by 2050, Princeton study shows,” Princeton University, December 15, 2020, <https://www.princeton.edu/news/2020/12/15/big-affordable-effort-needed-america-reach-net-zero-emissions-2050-princeton-study>.

³⁰ Ben Geman, “Where U.S. fossil fuel companies are shedding jobs,” *Axios*, August 21, 2020, <https://www.axios.com/fossil-fuel-industry-job-losses-oil-c41dbe9c-9cc7-44a5-8279-faf2b1a0bf5f.html>.

³¹ Eric Rosenbaum, “Biden’s climate change plan and the battle for America’s most threatened workers,” *CNBC*, <https://www.cnbc.com/2021/01/31/bidens-climate-change-plan-and-americas-most-threatened-workers.html>.

energy threaten that sector. The states with the most gas production include Texas, Pennsylvania, Louisiana, and Oklahoma. By focusing on just transition initiatives early in his presidency, President Biden wants to be proactive for oil and gas, allowing local areas to plan cooperation with the federal government. Otherwise, all stakeholders may fall behind as a result of not having proper coordination and a long-term vision for vulnerable communities, similar to happened with the coal industry.

Sufficient Funding for Programs

For President Biden's just transition program to work and for his administration to avoid backlash from fossil fuel-dependent areas, the Federal government would need to provide sufficient funding. During the presidential campaign, President Biden said he would allocate 40 percent of his \$2 trillion climate plan to environmental justice initiatives, which could include just transition programs. "We're looking for a just transition. We're looking for an opportunity to bring those coal communities and transition them in, too, to make sure that they have jobs of the future," said Gina McCarthy, who is President Biden's National Climate Advisor.³²

President Biden estimates that his response to climate change can create 10 million jobs.³³ One opportunity for both climate action and just transition is in comprehensive infrastructure legislation, a major priority for the administration, as it can help generate union jobs with benefits and sufficient wages for workers. The ARC initiative presents a blueprint in this area as the Federal government provided direct funding for a hard-hit fossil fuel area that needed economic development. Jobs could be created through developing clean technologies, renewable energy, and electric vehicle infrastructure. Critically, clean energy jobs go beyond just wind and solar, also including public transit workers, electricians, architects, auto mechanics, and construction workers. Besides infrastructure, guaranteed funds would be necessary for adaptation and resilience initiatives to guard against climate threats, worker retraining, and energy efficiency programs such as retrofits. One specific initiative that President Biden has proposed is the creation of a Civilian Climate Corps. A Civilian Climate Corps, a voluntary program modeled off of a public works initiative from the Great Depression, would aim to create jobs through conservation and cleaning up areas that produce fossil fuels.

In order for these jobs to be realized, the federal government would have to provide direct funding to pay for them, allocate money to the states to carry out worker education programs, or give the private sector incentives such as tax breaks and subsidies to build projects and hire more personnel.³⁴ Sufficient levels of funding and targeted development can bring about sustainable development that provides long-term job opportunities.

³² Scott Waldman, "Gina McCarthy on crafting climate policy that endures," *Climatewire*, February 12, 2021, <https://www.eenews.net/climatewire/stories/1063725033/>.

³³ Joe Biden, "The Biden Plan for a Clean Energy Revolution and Environmental Justice," <https://joebiden.com/climate-plan/>.

³⁴ "Pathways for Just Transitions: Gender-Responsive and Place-Based Investment," Just Transition Initiative, February 3, 2021, https://justtransitioninitiative.org/wp-content/uploads/2021/02/210203_JTI_Pathways_Report_WEB.pdf.

Obstacles to Just Transition

There are three main factors that could inhibit the Biden plan to enact a just transition that sufficiently addresses the wide-ranging problem of dislocated workers in areas that are economically disadvantaged.

First, funding may end up being inadequate. The U.S. national debt is currently higher than the country's total GDP, for only the second time in history. It is expected to continue to rise, reaching \$35 trillion in 2031.³⁵ Although President Biden has embraced deficit spending to pay for his climate change initiatives, Congress may balk in supporting expensive programs and instead scale down funding over worries about the rise in national debt. The first priority of the Democratic-controlled Congress was the COVID-19 recovery act, which cost \$1.9 trillion, and the high price tag may lessen the appetite for for a \$2 trillion infrastructure plan that includes a clean energy standard, both of which would create jobs in the clean energy sector and provide opportunities for transitioning workers.

Second, political obstacles could inhibit ambitious just transition plans. Democrats currently control the Senate and the House, but their margins are slim, meaning legislation that aims to facilitate a just transition, including infrastructure, may be diluted or not pass at all. The key figure in the Democratic party in this area is Senator Joe Manchin of West Virginia. His importance stems from him being the most conservative Democratic Senator, and his vote will be crucial for bills to pass the Senate. Moreover, he represents a state where the coal industry is a major employer but has diminished in relevance in recent years. He has signaled that he may support infrastructure or clean energy legislation that reduces coal's market share so long as it also provides support for initiatives that help modernize West Virginia's economy, such as carbon capture projects, broadband development, and clean energy technology. In fact, he has proposed \$8 billion in tax incentives to spur domestic manufacturing initiatives, all of which could factor into helping West Virginia's coal communities – and similar communities in other fossil fuel states – achieve a just transition.³⁶ Another part of the current political reality that could derail programs that support a just transition is opposition to climate action by leaders in the Republican party. Although many of the workers affected by the phasing out of coal and volatility in oil and gas reside in Republican-leaning states, policymakers from those areas are skeptical of climate change programs and would prefer to support fossil fuel industries. Senate Minority Leader Mitch McConnell of Kentucky has not given any signs that he would work with Democrats on climate legislation or just transition measures. Similarly, the fossil fuel industry, which is a major contributor to the Republican party, is seeking to undermine climate action at the state and federal level in order to slow the energy transition by fighting efforts to phase out the production and consumption of its fuels.³⁷

Third, programs may not receive enough support over time. A just transition will require both durable investment and a long-term vision. The initiatives, including the Interagency Working

³⁵ Jeff Cox, "Deficit projected at \$2.3 trillion for 2021, not counting additional stimulus, CBO says," *CNBC*, February 11, 2021, <https://www.cnbc.com/2021/02/11/deficit-projected-at-2point3-trillion-for-2021-not-counting-additional-stimulus-cbo-says.html>.

³⁶ Ben Geman, "Sen. Joe Manchin to propose \$8 billion in clean energy tax credits," *Axios*, March 2, 2021, <https://www.axios.com/manchin-climate-change-senate-policy-71e39539-d63c-4d81-b3f0-cfdb4a1ac338.html>.

³⁷ "Oil & Gas: Long-Term Contribution Trends," Center for Responsive Politics, <https://www.opensecrets.org/industries/totals.php?cycle=2020&ind=E01>.

Group on Coal and Power Plant Communities and Economic Revitalization, would need to continue beyond President Biden's time in office. If a Republican wins the presidency in 2024 or 2028, the new president may end the Working Group and other initiatives. Even sooner, if Republicans regain control of the Senate or the House in 2022, they could restrict funding on certain programs that help to facilitate a just transition. That is not guaranteed to occur, however. As noted above, many of the hard-hit states are Republican-leaning, so the party's leadership may evolve on its outlook on just transition efforts if they help laid-off workers find jobs with sufficient wages and benefits. The Republican party embracing just transition efforts would bode well for the implementation of a long-term strategy.

Electrification and Just Transition

While coal workers have been the focus of most just transition discussions, those within and associated with the natural gas and petroleum industries will also face similar dynamics as the climate communities and governments at the local, state, and national level look to “electrify” everything. The push for electrification centers mostly around reducing emissions from buildings and homes and increasing the use of electric vehicles, with the former impacting natural gas and the latter petroleum. The Biden administration's aim of carbon-free electricity by 2035 threatens natural gas use in the electricity sector over time, while actions at the local level such as the movement to ban gas hook-ups will likely accelerate a shake-up for natural gas use in the residential and commercial sectors. And as major auto company GM aims to sell only EVs starting in 2035 and others have launched aggressive EV strategies, policies provide incentives for consumers to make EV purchases, and EV charging infrastructure expands, the petroleum sector and its workforce will shrink over time.

The energy transition for natural gas and petroleum workers need not be as harsh as it has been for coal workers. Given that electrification of the economy is still nascent, industry, policymakers, and civil society have time and flexibility to put in place the proper programs to manage the transition for natural gas and petroleum. Currently, natural gas use in the residential and commercial sectors accounts for 27 percent of the U.S.' total gas consumption (compared to 36 percent used for electricity), mainly for heating, water, refrigeration, and cooking.³⁸ Petroleum is used for more than 90 percent of the transportation sector. Despite the massive foothold that oil and gas have in the U.S. economy, the combination of market forces and policy developments that promote electrification, such as mandating all-electric buildings in new construction, threaten their future and ultimately the livelihoods of the workforce. How fast the shift to electrification occurs depends on consumer preferences and the pace of policy changes and implementation.

For natural gas distribution workers, policymakers and industry have the potential to shift their skills and focus to jobs that are tied to electrifying buildings and homes. Against this backdrop, retraining programs are crucial. Currently, there are almost 100,000 workers in natural gas distribution in the United States, with about 10,000 in California alone, where policies to electrify buildings have the strongest foothold. With the shift to electrification, the market for heat pumps – an appliance to heat and cool buildings using electricity – will grow sharply. Estimates show that

³⁸ “Natural gas explained,” Energy Information Administration, November 30, 2020, <https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php>.

the HVAC market will see shortfalls in the coming years.³⁹ As a result, the growing demand for HVAC workers is one example that highlights opportunities for former natural gas workers as the economy moves to electrification. “Supporting contractors to specialize and become skilled at electrification and heat pump projects is crucial for success, as faulty installations will slow electrification progress,” said an analysis by Rocky Mountain Institute.⁴⁰ Besides the need for HVAC workers, the move to electrification for homes and commercial buildings stimulates demand for manufacturing energy-efficiency appliances, modernizing buildings and retrofits, and installing equipment. A study done by researchers at the UCLA Luskin Center for Innovation estimates that the electrification of California’s buildings would create more than 100,000 full-time jobs even when accounting for the loss of both construction and natural gas distribution positions.⁴¹ Slightly more than three-quarters of the job gains would be tied to building retrofits, while the rest could center on renewable energy construction, the manufacturing of electrical equipment and appliances, and the transmission and distribution of electricity. To electrify buildings in a way that brings about an orderly transition for workers, the researchers at UCLA Luskin Center for Innovation recommend the following:

- 1) Engage workers and unions to develop education and retraining programs:
 - Incorporate feedback from utilities, rate payers, and workers to minimize market and labor disruption.
 - Provide funds for gas worker retention and assistance in transition.
- 2) Invest in demand-side programs that prioritize electrification:
 - Provide incentives for contractors to develop skill standards that can be applied to decarbonization policies.
 - Create and advance training opportunities that prioritize decarbonization and electrification.
- 3) Target investments in supply-side training:
 - Support the “up-skilling” of workers through special training rather than broad programs.
 - In the specialized training, focus on creating electricians, HVAC workers, plumbers, and pipefitters.
 - Create opportunities for disadvantaged workers.

For the petroleum sector, the move to EVs will have a ripple effect all along the supply chain, from wellheads to terminals to refineries to fueling stations. Transportation accounts for approximately 70 percent of total petroleum demand in the United States, showing how dramatically the picture will change for the industry once EV uptake accelerates. Like building electrification, changes in transportation will occur over time and allow for proactive measures from policymakers to ensure proper training and that the jobs provide full-time work with competitive wages and benefits.

³⁹ “The HVACR Workforce: Demand Heats Up as Supply Melts Away,” HVACR Workforce Development Foundation, September 2015, <http://careersinhvacr.org/Portals/Appleseed/documents/Executive%20Summary.pdf>.

⁴⁰ Sherri Billimoria and Mike Henchen, “Regulatory Decisions for Building Decarbonization: Tools for Commissions and other Government Agencies,” Rocky Mountain Institute, July 2020, <https://rmi.org/wp-content/uploads/2020/07/Regulatory-Solutions-Framework-Report-070820.pdf>.

⁴¹ Betony Jones, et al. “California Building Decarbonization: Workforce Needs and Recommendations,” UCLA Luskin Center for Innovation, November 2019, https://innovation.luskin.ucla.edu/wp-content/uploads/2019/11/California_Building_Decarbonization.pdf.

Workers in oil extraction have received the most attention, as they will face similar challenges as coal workers, but employees at refineries and fuel stations will also see dramatic changes. There are currently 174,000 workers at U.S. refineries, along with 150,000 at fueling stations, with 60 percent individually owned.^{42,43} So far, just transition efforts for refinery workers have had mixed results. In San Francisco, California, for instance, a refinery will produce renewable fuels after being retrofitted, allowing for the creation and retention of almost 1,000 jobs.⁴⁴ But when a refinery shutdown in Philadelphia, Pennsylvania in 2019, workers who had well-paying union jobs were abruptly put out of work with limited options, a circumstance that caused tension between the industrial workers and the climate community.⁴⁵ Situations like this will recur without proper planning, input from local workers, and sufficient funding, making the refining industry in danger of eventually becoming like the coal sector. For fueling stations, the key may center around building charging infrastructure at their locations. This not only creates opportunities for jobs through building the charging stations but also allows for motorists to shop for convenience items at the fueling station while their vehicles charge. Some European and Asian countries have already moved forward with plans to add chargers to gas stations, an example the United States will have to follow to both increase the uptake of EVs and support the transition for fueling station workers and owners.⁴⁶

The oil and gas industry and its advocates are set to fight the shift to electrification, which could undermine a smooth transition for workers. A report commissioned for the American Gas Association, for instance, says that the move to electrification will have only a minimal impact on emissions and increase costs for consumers.⁴⁷ Utilities that own natural gas assets will also likely oppose the acceleration of electrification. The American Petroleum Institute, meanwhile, argues that the energy transition is happening too quickly.⁴⁸ Some fossil fuel workers, particularly those in refining, see that the energy transition could affect their livelihoods quickly, and are calling for robust wages and benefits, the incorporation of local needs, a focus on clean-ups, a proper examination of transitioning to biofuels, and financial support from industry.⁴⁹

The Biden administration has incorporated just transition programs in its \$2 trillion American Jobs Plan, ones with “place-based strategies” to help distressed communities and support workers throughout the entire fossil fuel sector, not only coal. These programs include initiatives for workforce development, dislocated workers, capping oil and gas wells, land restoration, apprenticeships through education programs, revitalizing urban areas, modernizing the U.S. water

⁴² “Petroleum Refining,” Data USA, <https://datausa.io/profile/naics/petroleum-refining>.

⁴³ “Service Station FAQs,” American Petroleum Institute, <https://www.api.org/oil-and-natural-gas/consumer-information/consumer-resources/service-station-faqs>.

⁴⁴ Justin Gerdes, “California’s oil industry could become a just transition model,” *Energy Monitor*, October 9, 2020, <https://energymonitor.ai/policy/just-transition/californias-oil-industry-could-become-a-just-transition-model>.

⁴⁵ Juliana Feliciano Reyes, “Philly refinery shutdown pitted workers against climate activists. Did it have to be that way?” *The Philadelphia Inquirer*, March 6, 2020, <https://www.inquirer.com/news/south-philly-refinery-labor-climate-activists-just-transition-20200306.html>.

⁴⁶ Charles Morris, “Should Electric Car Chargers Be Installed At Gas Stations?” *Inside EVs*, December 2, 2020, <https://insideevs.com/features/457944/electric-vehicle-chargers-gas-stations/>.

⁴⁷ ICF, “Implications of Policy-Driven Residential Electrification,” American Gas Association, July 2018, https://www.aga.org/globalassets/research--insights/reports/aga_study_on_residential_electrification.pdf.

⁴⁸ James Osborne, “API president criticizes energy transition as moving too fast,” *Houston Chronicle*, January 13, 2021, <https://www.houstonchronicle.com/business/energy/article/API-president-criticizes-energy-transition-as-15866680.php>.

⁴⁹ Ann Alexander, “Refinery Communities Speak Out on Just Transition Reports,” NRDC, February 9, 2021, <https://www.nrdc.org/experts/ann-alexander/refinery-communities-speak-out-just-transition-reports>.

system, and building and upgrading public transit. While these programs -- if they are included in legislation that makes it through Congress -- would provide a commitment from the federal government to support fossil fuel workers that are displaced from electrification in the coming years, they would need to be enhanced over time in order to target the right communities in order to deal with the coming structural shift in the U.S. economy and allow oil and gas workers to avoid the same fate as those in the coal industry.

Ramifications of the Biden Administration's Foreign Policy for a Just Transition Abroad

Generally speaking, at the international level, the discussion of how to facilitate a just transition is both more inchoate and more closely linked to broader discussions of climate justice than in the United States. Nevertheless, there is considerable overlap. There is little emphasis in the United States on the idea of a "right to economic development," which has and continues to play an important role in the international context. Nevertheless, demands by fossil fuel workers and fossil fuel-dependent communities in the United States reflect a similar sentiment, namely, that these communities must not be denied the opportunity to achieve an acceptable standard of living or, worse, allowed to fall even further behind. In addition, it is widely recognized both in the United States and in the international context that a just transition will require diversifying the economies of fossil fuel-dependent communities, finding replacements for any revenues lost as a result of the transition away from fossil fuels, and involving communities throughout in planning processes and discussions so as to ensure what is sometimes called "procedural justice."

Nevertheless, there are also some significant differences in what will be required for a just transition in the United States and elsewhere. In the United States, only some communities' economies will need to become significantly more diverse as the country transitions away from coal and, eventually, other fossil fuels. But in some countries that are highly dependent on fossil fuels, such as in many Gulf countries, the entire country's economy must diversify. Similarly, while some local and state governments in the United States do stand to lose significant revenue as a result of the transition, the effects of revenue losses there will be far less disruptive than will revenue losses in countries like Venezuela, which uses oil revenues to fund public infrastructure and crucial social services. In addition, some countries that are highly dependent on fossil fuels have large migrant workforces, especially in the Middle East.⁵⁰ To the extent that it displaces these workers, the transition to clean energy could have significant transnational impacts by way of its impacts on the remittances migrants send home. As the authors of the *2020 Production Gap Report* note, "[a] transition that is just and equitable would address the impacts on these workers and the transnational economic consequences, including through international policy measures that provide safety nets, cash assistance, and offsets to the expected declines in remittances."⁵¹ Finally, there is a need internationally for technology transfer and technical assistance in countries like Vietnam, where government officials are hesitant about renewables in part because they are unsure how to integrate them into the existing electrical grid.

⁵⁰ SEI, IISD, ODI, E3G, and UNEP, *The Production Gap Report: 2020 Special Report* (2020), <http://productiongap.org/2020report>, p. 36.

⁵¹ *Ibid.*

Bearing in mind these similarities and differences between the just transition conversations in the United States and internationally, this section examines the implications of President Biden's foreign policy for a just transition abroad, as well as what pressures the administration's actions may place on other countries and what pressures the administration itself is likely to face.

Mitigation and Adaptation Finance and Technology Transfer

How other countries manage displaced fossil fuel workers and diversify their economies to adapt to the transition away from fossil fuels is not a primary concern for the United States except insofar as it creates instability or other security challenges or inhibits other countries from signing onto deals. It is therefore not surprising that the administration has only rarely addressed the potential disruptions to workers, communities, and states associated with decarbonization abroad. Indeed, it has so far said relatively little about climate justice in the international context. In President Biden's late January executive order on climate change, for example, justice and equity are mentioned frequently in the sections on domestic climate action, but in the section on foreign policy, President Biden speaks in terms of American leadership and national security rather than in terms of justice. Nevertheless, several of the administration's foreign policy goals and strategies bear on the prospects for a just transition abroad, foremost among them its plans for financing for international mitigation and adaptation measures.

During the Obama administration, the United States pledged to contribute \$3 billion to the Green Climate Fund, the financial mechanism of the UNFCCC; however, the United States only contributed \$1 billion before President Obama left office. Contributions stopped during the Trump administration but are now set to resume. Special Envoy John Kerry has indicated that the United States will "make good" on its prior commitment, meaning that the administration aims to contribute the remaining \$2 billion. The administration's plans to achieve this goal are still taking shape. President Biden's late January executive order directs the Secretary of State and the Secretary of the Treasury to develop a climate finance plan in coordination with Special Envoy Kerry that would make "strategic use of multilateral and bilateral channels and institutions, to assist developing countries in implementing ambitious emissions reduction measures, protecting critical ecosystems, building resilience against the impacts of climate change, and promoting the flow of capital toward climate-aligned investments and away from high-carbon investments." Further details of this plan were announced at the U.S.-convened Leaders' Climate Summit on Earth Day, including plans to achieve net-zero in the Development Finance Corporation's portfolio by 2040 and channeling 50 percent of Millennium Challenge Corporation funds toward climate-related investments over the next five years.⁵² In addition, the executive order also directs the Secretary of the Treasury to "develop a strategy for how the voice and vote of the United States can be used in international financial institutions, including the World Bank Group and the International Monetary Fund, to promote financing programs, economic stimulus packages, and debt relief initiatives that are aligned with and support the goals of the Paris Agreement."

⁵² "FACT SHEET: President Biden's Leaders Summit on Climate," April 23, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-president-bidens-leaders-summit-on-climate/>.

While none of these plans are specifically addressed to the obstacles countries and workers may face as a result of the global transition away from fossil fuels, they may have significant implications for the prospects for a just transition abroad. For instance, the Biden administration could write into its finance plan that, where relevant, funds for clean energy projects will be paired with funding and technical assistance to provide support to displaced fossil fuel workers, as well as farmers displaced from agricultural lands by renewable energy development. In addition, Treasury Secretary Janet Yellen may specify that the United States should use its role in international financial institutions to offer debt relief or debt forgiveness to developing countries so that they might use those funds to support workers and fund social services, an idea heard mentioned in multiple interviews. This could be especially helpful for countries that are highly dependent on oil or other fossil fuel revenues to service their sovereign debts. Importantly, however, we expect the Biden administration to continue the Obama administration's policy of resisting calls for aid from fossil fuel producer countries, especially the Gulf states.

President Biden's executive order on climate also directs the Secretary of Energy to work with the Secretary of State and other agency heads to "identify steps through which the United States can intensify international collaborations to drive innovation and deployment of clean energy technologies." Further details were announced at the Leaders' Climate Summit, including a partnership with India and support for "ambitious renewable energy goals and pathways in Latin America and the Caribbean."⁵³ As these announcements make clear, these efforts will largely be focused on renewable energy deployment and technical assistance. In addition, they may involve measures to facilitate the sharing of technology, if needed. Finally, in addition to advising relevant actors on technical issues such as integrating renewables and storage into grids, experts could also advise governments on diversifying their economies and supporting displaced fossil fuel and agricultural workers.

LNG Exports and International Coal Financing

The administration's plans regarding financing for and export of fossil fuel also bear on the prospects for a just transition abroad. President Biden's nominee for Secretary of Energy Jennifer Granholm has expressed her qualified support for exports of liquified natural gas (LNG) and indicated that she sees gas as a way to reduce emissions in countries that would otherwise be using dirtier fuels. These remarks suggest that at the international if not at the domestic level, the Biden administration will regard gas as an acceptable "bridge" to less polluting energy sources and may present gas exports as a way to facilitate a just transition for coal-dependent countries. However, administration officials have indicated that the administration intends to work with Canada, the UK, and other nations to make coal use politically unacceptable globally, particularly for developed nations. They want all developed nations to set dates for eliminating domestic coal use and to pledge immediately to stop all public funding to promote the export of coal technologies and infrastructure. At the same time, the Biden administration intends to work with other nations to establish the proposition that all natural gas use must be defensible within the greenhouse gas emissions budget implied by the goal of keeping warming below 1.5 degrees Celsius.

⁵³ Ibid.

These actions by the administration will significantly increase pressure on other countries that have presented their international financing for high-efficiency coal plants and coal technology exports as a way of enabling coal-dependent developing countries to reduce their emissions as they transition to cleaner sources of fuel. In addition, they are likely to accelerate the decline of coal internationally, which will in turn increase pressure on the U.S. and other countries working to accelerate the global transition to clean energy to support displaced workers and offer coal-dependent countries the finance, technology, and expertise necessary to transition to clean energy.

These dynamics will shape messaging by President Biden and administration officials at international fora such as the G20 Summit and COP26. As part of their broader effort to reassure the international community that the United States is once again committed to climate action, President Biden and administration officials will continue to emphasize their efforts to end coal financing and make coal use unacceptable globally. At the same time, the administration recognizes the difficulties these efforts will create for countries that are heavily dependent on coal and the need to reassure such countries to ensure a positive outcome in Glasgow. We therefore also expect to see administration officials highlighting the United States' own efforts to look after its displaced workers and fossil fuel-dependent communities and presenting its commitments on finance and technology transfer as tools to help other countries do the same.

Conclusion

The Biden administration's ambitious climate agenda will encounter resistance, not just from politicians representing coal states and fossil fuel industry executives, but also from workers in the industry and the communities who depend on the revenues it generates, as well as from countries highly dependent on fossil fuels, especially coal. It is not clear that President Biden will succeed broadly in both creating a consensus on a just transition and determining what policies are needed. As affected workers, communities, and countries will want reassurance that they will not be left behind in the energy transition, this dynamic presents real risks for the Biden administration's climate agenda both at home and abroad. If President Biden cannot satisfy members of Congress representing coal states, unions representing fossil fuel workers, progressive NGOs, and other concerned parties that his administration will facilitate a just a transition for affected workers and communities, his agenda may not find the support it needs. Similarly, at the international level, securing the support of developing countries that are highly dependent on coal will be crucial to forging consensus.

In addition, any efforts the Biden administration makes to facilitate a just transition in the United States or to provide adaptation and clean energy development financing to other countries are liable to encounter political obstacles. For one, these programs will be costly. With the nation's high debt levels rising after enacting a series of COVID relief measures, Congress may be reluctant to spend yet more money. In addition, a just transition will require continued support over time, not just at the beginning. As a result, future changes in Congress or the White House could undermine any progress that President Biden makes early in his administration.

Even though the just transition issue presents President Biden an opportunity to lead, both domestically and internationally, the administration will more likely than not fall short of seeing its

goals realized. While a just transition will be factored into the crafting of his infrastructure and climate plans, President Biden will have particular difficulty in putting in place special programs to convince fossil fuel workers, unions, and other concerned stakeholders that his administration will provide sufficient support and funding for affected workers and communities. The administration's efforts to facilitate a just transition will have to face the hurdle of getting support from a constituency—fossil fuel workers—that has traditionally opposed it. Without winning over this constituency, any gains the administration makes may not remain durable. The approach that the United States has taken on just transition over the decades has been inadequate. This dynamic may not change even with President Biden wanting to prioritize the issue. In some areas in the United States, local governments, industry, and some unions are determined to resist the coming energy transition -- a political, social, and economic reality that the Biden administration will have to continually face as it maps out and articulates its just transition programs.



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