Optimistic Prospects for US Climate Policy in the Biden Administration

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1. Introduction

This briefing note considers the prospects for the Biden administration's climate policy. President Biden attracted global attention by prioritizing climate issues in a series of actions at the very beginning of his administration. On his first day in office, he completed the procedure for the US to rejoin the Paris Agreement and cancelled the Keystone XL pipeline. In his first week, he issued a series of executive orders indicating that his administration will prioritize climate policy throughout the government and integrate climate considerations into all relevant policy areas. The executive order of January 27, 2021 set an ambitious goal of "net zero" by 2050, bringing the US in line with other major countries and local governments, as well as "a carbon pollution-free electricity sector no later than 2035" (Biden 2021c).

After four years of the Trump administration's efforts to obstruct climate action, the world is wondering to what extent the Biden administration can get the US back on course to lead the international effort to achieve the globally agreed target to try to limit global heating to well-below 2 degrees and preferably 1.5 degrees Celsius. How ambitious will Biden's climate policy be? Can it be successful?

This briefing note surveys the main elements of the Biden administration's climate policies in his first month in office, as well as what is not included. It speculates on the potential for these policies to be adopted and implemented. It does not systematically analyze whether the policies can achieve "net zero," and it does not explore the actions of other stakeholders such as businesses, local governments, and individual citizens.

Overall, this briefing note concludes that the main direction of Biden's climate policies seems relatively ambitious, and the Biden administration is likely to emphasize substantial concrete domestic policy actions, not just declarations of abstract principles. In the short term, these will focus on regulations, especially on transportation, energy, and financial reporting, as well as government procurement. Fundamentally, Biden's climate policy is intended as a giant jobs program (Biden 2020a, 2020b), aiming to create 10 million jobs with USD 1.7 trillion in investment over 10 years (leveraging additional private, state, and local investments totalling over USD 5 trillion), but this requires funding from Congress, which is not assured. In international negotiations, Biden's presidential campaign plan called for binding agreements on enhanced climate ambition, including shipping and aviation. Future trade agreements may be conditioned on climate agreements, and Biden may support the adoption of a carbon border adjustment. The US will also reengage with the many climate-related international cooperation initiatives.

However, at this stage, most policies are not very concrete, so it is too early to estimate their potential impact on actual greenhouse gas (GHG) emissions. If ambitious policies are adopted and implemented then there could be potential to achieve significant GHG reductions in the medium to long term, although it might still not be enough to achieve "net zero by 2050." At least Trump administration policies will be reversed, and Biden's policies are likely to be more ambitious than those of the Obama administration.

The rest of this briefing note explains the key personnel and structure of Biden's climate policymaking process, main initial priorities and strategies, and possible policy directions in several specific areas, both domestic and international, including the carbon border adjustment. It explains the difference between executive orders, regulations, and laws. It highlights the intended strong linkage between climate policy, jobs, and the overall economy. Finally, this briefing note considers several cabinet agencies and regulatory bodies which are not usually part of climate-related discussions, but which will be very important for climate action. The main sources used are Biden's early executive orders, personnel appointments, and news reports, supplemented by his climate plans issued during the 2020 presidential election campaign.

2. A Whole-of-Government Approach: Cabinet and White House Appointments and the New White House Organization

The strongest evidence for optimism is the new White House structure and the key cabinet and White House appointments. President Biden and his new White House Chief of Staff, Ron Klain have created a new level of coordinators in the White House to integrate policymaking using whole-of-government approaches in key areas, including climate, COVID-19 response, etc.

Climate policy now has two top coordinators with cabinet rank, one each for international and domestic climate issues. Former Secretary of State John Kerry was appointed Special Envoy for Climate in charge of international climate diplomacy, while former EPA Administrator Gina McCarthy is the domestic "climate czar" heading the new Office of Domestic Climate Policy at the White House. Neither position is subject to Senate confirmation, so they started working immediately. Both are Obama administration climate policy veterans, McCarthy as EPA Administrator, and Kerry as Secretary of State. Kerry played an important role in the negotiations leading to the Paris Agreement, and has a deep knowledge of climate diplomacy. Both McCarthy and Kerry have considerable Washington experience and were appointed earlier than their counterparts at the State Department and EPA, giving them a bureaucratic head start. Kerry was Secretary of State Antony Blinken's boss during the Obama administration, when Kerry was Secretary of State, and Blinken was the Deputy Secretary of State. This ensures that climate will be a top US diplomatic priority.

Michael Regan, the nominee for Environmental Protection Agency (EPA) Administrator, is North Carolina's top environmental regulator. He previously worked at the EPA and the Environmental Defense Fund.

To implement the whole-of-government approach, the January 27 executive order established a National Climate Task Force chaired by the National Climate Advisor (Biden 2021c). Members are listed in Table 1 and include most cabinet rank officials, top presidential advisors, and heads of the key White House offices.[1] The Task Force held its first meeting on February 11, 2021 (Friedman 2021).

Table 1: Members of the National Climate Task Force

Cabinet and Agency Heads	Presidential Advisors
Secretary of the Treasury	National Climate Advisor (Chair)
Secretary of Defense	Chair of the Council on Environmental Quality
Attorney General	Director of the Office of Management and Budget
Secretary of the Interior	Director of the Office of Science and Technology Policy
Secretary of Agriculture	Assistant to the President for Domestic Policy
Secretary of Commerce	Assistant to the President for National Security Affairs
Secretary of Labor	Ass't. to the Pres. for Homeland Security and Counterterrorism
Sec. of Health and Human Services	Assistant to the President for Economic Policy
Sec. of Housing and Urban Development	
Secretary of Transportation	
Secretary of Energy	
Secretary of Homeland Security	
Administrator of General Services	
Administrator of the EPA	

[1] Non-members are the Director of National Intelligence, Secretary of Veterans Affairs, United States Trade Representative, Ambassador to the UN, and the head of the Small Business Administration. Nevertheless, it can be assumed that these departments and agencies will also be involved in climate related issues. It is possible that additional members could join the Task Force later.

Each agency is required to submit to the Task Force and Federal Chief Sustainability Officer draft "Climate Action Plans and Data and Information Products to Improve Adaptation and Increase Resilience" within 120 days to strengthen adaptation and resilience to climate impacts, including the use of procurement policies. Annual progress reports are required to be posted on agencies' websites.

Another key point is that the major top economy-related cabinet members and top presidential advisers are also committed to prioritize strong climate action. Therefore, the major economic departments and agencies should strongly support or lead climate action rather than obstruct it or remain neutral, as often happened in the past. The key economy-related nominees are highlighted in Table 2.

Table 2: Major Top Economy-related Cabinet Members and Presidential Advisers

Position	Nominee	Remarks
Treasury Secretary	Janet Yellen	• Will prioritize climate action, supports a carbon tax and independent climate policy councils (Moshin and Dlouhy 2020). • Will appoint a climate coordinator and a departmental task force to manage Treasury's climate-related policies (Warmbrodt 2021a; Lane 2021).
Energy Secretary	Jennifer Granholm	• As Governor of Michigan, strongly promoted renewable energy and clean automotive technology (Clark 2020). • She "has centered her nomination around clean-energy employment and manufacturing" (Merchant 2021).
Interior Secretary	Deb Haaland	• First Native American cabinet secretary. • Before her nomination, "Haaland told the *Guardian* that as secretary of the interior she would 'move climate change priorities, tribal consultation, and a green economic recovery forward'" (Guardian 2020). • She believes fracking endangers air and water quality and opposes fracking on public lands (Puko 2021).
Secretary of Transportation	Pete Buttigieg	• Competed with Biden for the Democratic presidential nomination before finally endorsing him. • Advocated strong climate policies during the primary campaign, including achieving "net zero" by 2050, a zero-emission electricity system by 2035, and "a bold and achievable Green New Deal" (Banerjee 2020).
Secretary of Agriculture	Thomas Vilsack	• Former Agriculture Secretary under President Obama. • The Agriculture Department will play a key role in climate policy. • *Inside Climate News* reported optimistically that "climate hawks mostly applaud Agriculture Secretary nominee Thomas Vilsack's eight-year tenure at the agency" as Agriculture Secretary under President Obama, although some climate groups are less enthusiastic (Gustin 2021). • The *New York Times* reported Vilsack "pledged to use his full executive authority to meet the administration's goal of a net-zero carbon economy by 2050" (Cullen 2021).
Director of the National Economic Council	Brian Deese	• Deese was former head of sustainable investments at investment giant BlackRock, so some progressive groups are wary of his Wall Street background, but he was also a senior climate advisor in the Obama administration and helped negotiate the Paris Agreement (Ordonez 2020).
US Trade Representative	Katherine Tai	• Former head of China enforcement at USTR before joining the House Ways and Means Committee staff where she helped to push for the inclusion of stronger environment and labor standards in the US-Mexico-Canada Free Trade Agreement (USMCA) (Bade, Pager, and Rodriguez 2020). • Considered aligned with progressive Democrats (White and Case 2020).

Some climate NGOs raised concerns that a few of Biden's top advisors and nominees for cabinet positions have not demonstrated enough climate ambition. Nevertheless, many of them have strong environmental credentials and experience, and nearly all have at least some kind of climate or environment-related past record or made public statements supporting climate action.

3. Climate Policy and the US Governance Framework: Executive Orders, Regulation, Laws, and Budgets

3.1 The Need to Move Quickly

Many policies are often delayed at the beginning of new US presidential administrations. This is partly because the administration needs to appoint several hundred top officials, not just cabinet secretaries, and the required Senate confirmation of these officials is increasingly delayed due to acrimonious partisan divisions. Cabinet departments and agencies are managed by temporary acting leaders while top officials await confirmation. Unlike previous administrations, the Biden team was able to start its work expeditiously because it started with a strong White House staff under the experienced leadership of Kerry and McCarthy who have the knowledge and ability to effectively direct the acting leaders in the departments and agencies. Even though the Democrats have a small majority in the Senate, the Republicans can still significantly delay the confirmations. It may take weeks or months to approve the deputy and assistant secretaries who supervise the substantive work of the departments and agencies.

The highly experienced Biden team fully understands the need for quick action. Their strategy is influenced by the different types of policy measures in the US governance framework and legal system. Each type of policy has different possible speeds of adoption and implementation, and different decision-making procedures. This briefing note addresses executive orders, regulations, laws, and budgets.

3.2 The First Step: Executive Orders

Executive orders can be issued quickly and sound impressive. However, their legal effect in the US is limited. They mainly provide direction for officials in the executive branch, and they cannot contradict existing laws and regulations, although they often initiate development of proposals for new laws and regulations, as many of Biden's executive orders do. Other orders mandate direct actions which can be taken by departments and agencies under existing laws and regulations, for example government procurement policies. Presidents Obama and Trump demonstrated that much can be accomplished through executive orders, although they can be easily reversed by the next president.

Biden's climate-related executive orders and early actions can be collectively summarized as follows:

- Overall prioritization of climate, including in US foreign and national security policy;
- Organizational measures to implement a whole-of-government approach, integrating climate into all policy areas, and establishing new presidential climate advisors, departmental climate offices, interagency task forces, and requiring departments and agencies to develop climate and environmental justice plans;
- Reversing Trump's executive orders, freezing pending regulations, initiating procedures to reverse Trump administration's regulations and create new regulations;
- Mandating various reports making concrete recommendations to advance the climate agenda;
- Using the federal government's buying power, property, and asset management to promote the climate agenda, including procurement of clean electricity and vehicles;
- Elimination of fossil fuel subsidies from budget requests;
- Direct departments and agencies to restrict new fossil fuel leasing and related permits on public lands, including the Arctic Refuge and various national monuments;
- A strong focus on "empowering workers" by "rebuilding infrastructure," "advancing conservation, agriculture, and reforestation," and "revitalizing energy communities";
- Strengthening environmental justice;

- Strengthening the role of science in decision making; and
- Stating that climate jobs should include decent wages, the right to join unions, and meet fair labor standards.

The early executive orders propose few specific initiatives, major new policies, regulations, or budget proposals. These will take some time to develop. The executive orders mainly set up some administrative structures and procedures as well as guide the overall direction of departments and agencies.

3.3 Urgent Priority: Undoing Trump's Regulations and Developing New Regulations Under Existing Laws

3.3.1 Why the Regulatory Process Should Be Prioritized

The Biden administration's urgent priority is to work as quickly as possible to undo the Trump administration's climate regulations as well as issue new regulations under existing laws. This is because the regulatory process takes a significant amount of time, usually at least a couple of years, but sometimes they take longer and cannot be completed in one presidential term. In the US legal system, broad laws (like the Clean Air Act) delegate detailed regulatory power to departments and agencies, but they need to follow strict procedures and timelines (established by separate laws) to create new regulations or amend existing ones such as detailed analyses of costs and benefits and allowing time for public comment. Draft regulations may need to be revised in response to the comments received. Regulatory changes also need to be vetted by the Office of Management and Budget (OMB) Office of Information and Regulatory Affairs. Failure to follow these procedures, or just cutting corners, could make a proposed regulation vulnerable to court challenges, and courts could invalidate the regulation or require it to be revised. If the regulatory process takes too long, there is a risk that it will not be finished by the end of the administration.

3.3.2 The Congressional Review Act

Moreover, regulations which are finalized in the last few months of the President's term are vulnerable to the Congressional Review Act (CRA). The CRA enables Congress to invalidate a regulation by a simple majority vote within 60 legislative days of the regulation's effective date. Use of the CRA is usually not considered during a president's term because the President can veto it. Using the CRA is usually considered at the start of a new presidential term if the new President and Congress are of a different political party than the previous President. In that case, the regulations may be easily repealed, since the CRA needs only a simple majority in the Senate. After Trump unexpectedly won the Presidency and the Democrats failed to retake the House or Senate, several of the Obama administration's late regulations were repealed using the CRA.

Similarly, now that the Democrats control the Presidency and both houses of Congress, the Biden administration may consider using the CRA to repeal some of the Trump administration's late regulations. However, using the CRA involves some risk because the Act prohibits new regulations which are "substantially the same" as the previous ones, and the courts have not ruled on what this concept means. In many cases, the Biden Administration will want to revise or create a new regulation, so it may choose to use the regular regulatory process rather than the CRA (Brugger 2021). Moreover, the CRA would consume Congressional floor time, so Democratic leaders will need to prioritize their crowded Congressional agenda (Beitsch 2021). Possible candidates for CRA action include an Interior Department relaxation of a rule limiting methane leaks and the EPA's "science transparency" rule which prohibits the use of studies which do not publicize their data in making regulations (Stone 2021).

3.3.3 Reversing the Trump Administration's Regulatory Actions

On day one of the Biden administration, departments and agencies were ordered to freeze all the Trump administration's last regulations nearing finalization (Klain 2021) and conduct a review of existing ones to determine the best way to undo them. The January 20 executive order included a prioritized list (Biden 2021a). Some of President Trump's executive orders modified the regulatory process itself to obstruct future climate and environmental regulation; these were also immediately revoked (Biden 2021b).

The Trump administration rolled back more than 100 environmental regulations, many related to climate (Popovich, Albeck-Ripka, and Pierre-Louis 2021),[2] and it enacted many other regulatory changes to obstruct climate action, promote fossil fuels, and undercut the role of science in policymaking. These regulatory changes negatively affected a wide range of areas including GHG emissions from power plants and motor vehicles, energy efficiency standards, promotion of renewable energy, methane emissions in the oil and gas sector, and fossil fuel extraction on federal land (including permits, leasing, and royalties). Some were procedural changes to make it more difficult to make more climate friendly regulations in the future. Many are specifically mentioned in Biden's executive orders.

The Trump administration often failed to follow the required procedures and cut many corners when creating new regulations, at least to some extent, which is one reason why its deregulatory initiatives progressed much faster than expected. As a result, however, many of its regulatory changes have already been invalidated by the courts (Sanger-Katz 2019; Potter 2018).

A major recent example is the effort to replace Obama's Clean Power Plan (CPP) with the much weaker Affordable Clean Energy (ACE). The litigation against the CPP was finally dismissed by the District of Columbia Appeals Court in September 2019 after the EPA finalized ACE (Gilmer 2019). However, ACE was also challenged in court, and the District of Columbia Appeals Court struck it down in January 2021. The court rejected the Trump administration's interpretation of the Clean Air Act and affirmed the EPA's authority to regulate GHGs under the Act. Therefore, the Biden administration can now make a fresh start to develop a new regulation. Other cases are still being litigated in the courts (Friedman 2021).

3.3.4 Future Climate-related Regulations

Future climate-related regulations will be supported by an initiative launched by the January 20 executive order to calculate a new social cost of carbon, as well as the social costs of nitrous oxide and methane (SCC, SCN, and SCM, respectively) (Biden 2021a). These will be used as the scientific basis for cost benefit analyses of all relevant proposed new regulations. Higher social costs of these pollutants will provide the legal justification for stronger regulations. This will strengthen Biden's new regulations against the inevitable court challenges. The order specified that the calculations should incorporate "changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services," and it established an Interagency Working Group on the Social Cost of Greenhouse Gases. The Working Group is directed to publish an interim SCC, SCN, and SCM within 30 days, which agencies should use until final values are published no later than January 2022. The Working Group is also directed to provide recommendations by September 2021 "regarding areas of decision-making, budgeting, and procurement" where these calculations should be applied, and recommendations by June 2022 on the methodologies for calculating them, "to the extent that current methodologies do not adequately take account of climate risk, environmental justice, and intergenerational equity."

A wide range of new regulations can be expected. These broadly include power plant emissions standards, automobile emissions and efficiency standards, air pollution standards, and energy efficiency standards. The January 20 executive order directs the EPA to propose "new regulations to establish comprehensive standards of performance and emission guidelines for methane and volatile organic compound emissions from existing operations in the oil and gas sector." The January 27 executive order specifically mentions

[2] For details see the deregulation trackers at Harvard Law School (https://eelp.law.harvard.edu/regulatory-rollback-tracker/) and Columbia Law School (https://climate.law.columbia.edu/climate-deregulation-tracker).

revising government procurement regulations as well as permitting processes for the production of renewable energy, oil, and gas (although not coal) on public lands and offshore waters.

In the case of auto emissions, General Motors, Fiat, Toyota, and other auto manufacturers dropped their previous opposition to California's proposed stricter fuel-economy standards and signalled their willingness to support Biden administration efforts to strengthen the national standards (Davenport 2021). General Motors also announced a target to sell only zero-emission vehicles by 2035.

Clearly, due to this extreme time pressure, the Biden administration needs to put its highest priority on starting these regulatory initiatives as quickly as possible. For the longer term, Biden plans to consider how to reform the regulatory review process to better address key challenges including climate change as well as the global pandemic, economic downturn, and systematic racial inequality. On his first day in office, Biden tasked OMB with making proposals for these reforms (Biden 2021d).

3.4 Limitations of the US System for Adopting New Laws and Budgets

Most kinds of climate policies which require changes in the law are highly unlikely to be adopted. This is because under current Senate rules, a supermajority of 60 votes is required to pass a new law in the Senate, unlike the House of Representatives where only a simple majority is required. Currently, the Senate is evenly split with 50 Democrats and 50 Republicans, and Democrats are the majority party since Vice President Kamala Harris has the power to decide tie votes. Therefore, any new law would require at least 10 Republican votes in the Senate, which is highly unlikely.

Passing new budgets is much easier, however, since they can be approved by a simple majority in the Senate. Therefore, in recent years, major policy changes could be achieved mainly through budget legislation. The procedural mechanism is called "budget reconciliation," and it has three major limitations, among others. First, any measure in the budget reconciliation bill needs to meet certain criteria to be considered as "budget-related," as well as other criteria. The Senate Parliamentarian assesses whether a bill meets the criteria. Some climate-related measures, such as a carbon tax, might qualify, but others, such as an emissions trading scheme, might not. Second, overall, the procedure can be used only once per fiscal year. Nevertheless, in 2021 it might be possible to use the procedure twice (for both FY 2021 and FY 2022) since no budget resolution for FY 2021 was passed in 2020. Climate infrastructure would likely be a key focus (Emma 2021). Third, climate may compete with other priorities like COVID relief for inclusion in the budget reconciliation bill.

Moreover, even a simple majority is not assured, as some Democrats might not support some climate policies, especially Senator Joe Manchin of West Virginia, who is the Chair of the Senate Energy and Natural Resources Committee, which has jurisdiction over many climate issues. Coal mining is a major industry in West Virginia, and Manchin is likely to oppose measures that might result in job losses in fossil fuel industries unless they are accompanied by credible plans for new jobs. In February, he sent a public letter to President Biden urging him to consider the importance of natural gas, and to reconsider the cancellation of the Keystone XL pipeline (Frazin 2021). Any Democratic opposition would have to be offset by a corresponding number of Republicans, which would be very difficult.

If the Democrats rush to focus their 2021 budget reconciliation bill on COVID-19 relief, and they do not include other climate-related measures such as a carbon tax or climate infrastructure, then these issues may be delayed until 2022 (Grunwald and Rayasam 2022). It is not clear whether the political environment will be favorable to climate issues in 2022, which is an election year. Elections will be held for all the seats in the House of Representatives and one-third of the seats in the Senate, so there is a risk that the Democrats could lose their majority in either the House or the Senate or both.

The budget resolution which passed on February 5, 2021, starting the budget reconciliation process, mainly focused on COVID-19 relief (Pramuk 2021). It is not clear whether or to what extent climate-related items will be included. It is possible that climate-related budget items will be postponed to the next budget reconciliation bill since the Biden administration may need more time to develop concrete proposals.

A key issue is what policies can be classified as "budget-related." This can be subject to interpretation. Nevertheless, it will have a large influence on future climate policy development.

The Biden administration may try to shape its climate policies in the form of budget measures as much as possible to enable them to be passed through budget reconciliation. It may be difficult to create entirely new climate infrastructure programs or add a new regulatory framework to existing programs. Instead, climate infrastructure may need to be implemented through expansion and incremental realignment of existing programs.

Climate-related infrastructure could be the main possibility for new laws or programs. During the Trump administration, it was thought that infrastructure might have potential for a bipartisan consensus, but no agreement was reached partly due to differences regarding the funding mechanism. The Republican concept was to essentially privatize the infrastructure, while the Democrats wanted to pay for it with government funds. It seems unlikely that most Republicans would change their views on funding during the Biden administration. Anyway, there could be a small possibility of attracting 10 Republican votes, but it may also be necessary to offset some opposing Democratic votes, so it would still be safer to propose infrastructure measures through budget reconciliation rather than in the form of new laws.

3.5 Scientific Reports, Research, and Provision of Information

The Biden administration can move quickly to revitalize and significantly strengthen scientific research and reports. There are many existing research programs and required reports which already have budgets, so quick action is feasible. Budgets could also be increased through the budget reconciliation process.

Scientific research and reports do not necessarily save large amounts of GHGs in the short term, but they certainly provide the basis for stronger medium- and long-term actions. Scientific reports and research also play an important role in policy making, especially for regulations and legal disputes in the courts regarding both laws and regulations.

Obstructing and undermining climate-related research and scientific reports was a Trump administration priority. For example, it tried to significantly reduce research for renewable energy, although the attempted budget cuts were mainly rejected by Congress, including by many Republicans (Natter 2019). More generally, the Trump administration tried to disrupt the conduct and publication of scientific climate research in various departments and agencies, including by hiring freezes, restricting research topics, refusing to publicize the research that was completed, and, in some cases by relocating agencies outside of Washington DC[3] (Plumer and Davenport 2019). The US Department of Agriculture's Economic Research Service lost about three quarters of its researchers when it was relocated from Washington DC to Kansas City (Dmitrieva 2019).

[3] Two agencies within the US Department of Agriculture, the Economic Research Service and the National Institute of Food and Agriculture were moved from Washington DC to Kansas City, Missouri, in July 2019.

The National Climate Assessment is one of the most important scientific reports. It is a legally required, comprehensive, peer reviewed study of climate knowledge, risks, and vulnerabilities conducted by the US government. Along with other related official assessments, it is an important foundation for a wide range of climate-related policies and regulations. These assessments provide essential evidence to support the legal justification of climate-related regulations against court challenges. The Trump Administration apparently did not interfere with the production of the National Climate Assessment, which was published in two parts in 2017 and 2018, although it publicly rejected the conclusions (Lavelle 2018). Near the end of his term, Trump unsuccessfully tried to disrupt the production of the next Assessment by replacing its leader with a climate denier (Flavelle 2021). The Biden administration will easily be able to facilitate and strengthen the production of the next National Climate Assessment, which is expected to be released in 2023.

It will also be relatively straightforward to revitalize climate research throughout the government. Research and personnel budgets are already available, so they just need to be mobilized. The Trump administration left many staff vacancies throughout the government. The Biden administration can easily hire many new researchers and administrative staff. Therefore, the US government can be expected to quickly resume its substantial contribution to global climate science.

There is also a commitment to provide detailed climate-related information to the general public to facilitate climate change adaptation. The January 27 executive order requires a report on "ways to expand and improve climate forecast capabilities and information products for the public," and a report "on the potential development of a consolidated Federal geographic mapping service that can facilitate access to climate-related information."

4. Climate and the Economy

4.1 Jobs and Climate

Biden's climate policy is intended as a "jobs" plan, as much or more than it is a "climate" plan. According to National Climate Advisor Gina McCarthy, "President Biden has often told us, when he thinks of climate change, his first thought is about jobs" (Psaki, Kerry, and McCarthy 2021). Biden's "climate" plans issued during the presidential campaign did not even use the word climate in their titles, which instead emphasized "sustainable infrastructure," "equitable clean energy future," "clean energy revolution," and "environmental justice" (Biden 2020c, 2020b). The January 27 executive order does have "climate crisis" in the title, but it still puts a high priority on "empowering workers" with special emphasis on the need "to revitalize the economies of coal, oil and gas, and power plant communities." It is not clear what is meant by "empowering workers" in the context of climate change; it seems to mean creation of jobs with worker protections, preferably with possible labor union membership.

In the short-term, the January 27 executive order suggests that jobs can be created to some extent through the "use of the federal government's buying power and real property and asset management." The order aims to use this buying power to purchase "clean and zero-emission vehicles for Federal, State, local, and Tribal government fleets including vehicles of the United States Postal Service" (Biden 2021c).

Ultimately, most of the jobs would have to be created through the order's concept of "rebuilding our infrastructure for a sustainable economy." However, this will require new funds appropriated by Congress, and the executive orders do not make any concrete funding proposals. Infrastructure projects will also need time for planning, design, feasibility studies, environmental impact assessments, and procurement. Therefore, it may be difficult to create these jobs quickly.

Moreover, the executive order does not provide detailed plans or a roadmap for infrastructure. Instead, for hints, it is necessary to refer to Biden's campaign plans. These plans call for USD 1.7 trillion in climate investments over ten years, which are expected to create 10 million "well-paying" jobs (Biden 2020b). The executive orders do not mention a specific total number of jobs. The campaign plan discusses various examples of types of jobs which could be created. These investments may be included in a future budget reconciliation bill; if this is the case, then detailed plans will need to be developed quickly. The climate plans and executive orders also make clear that workers involved in the climate investments should enjoy labor protections and have the opportunity to join unions.

One of the order's few concrete targets is listed under "empowering workers" – "conserving at least 30 percent of our lands and waters by 2030." The only concrete jobs program created by the executive order, the "Civilian Climate Corps," is related to this target, although the relevant departments and agencies are to consider additional possible strategies. The Corps should create jobs to "conserve and restore public lands and waters, bolster community resilience, increase reforestation, increase carbon sequestration in the agricultural sector, protect biodiversity, improve access to recreation, and address the changing climate." The Corps seems reminiscent of the Civilian Conservation Corps (CCC) established by President Franklin D. Roosevelt to create jobs during the Great Depression. However, the CCC had a substantial budget of new funds (Maher 2008), while the Civilian Climate Corps is expected to rely on "existing appropriations," but it is not clear to what extent existing funds could be reallocated. Without significant new funds, it might not be possible for the new Corps to create many jobs or make much progress towards the goal of "conserving at least 30 percent of our lands and waters by 2030," especially in the short term.

Creation of an "agricultural and forestry climate strategy" is also required, "voluntary adoption of climate-smart agricultural and forestry practices" should be encouraged, and "how to make fisheries and protected resources more resilient to climate change" should be considered. These are also listed under "empowering workers" although it is not directly explained how they are related to jobs.

The section of the executive order on "revitalizing energy communities" provides more specific examples of how jobs could be created. These include "projects that reduce emissions of toxic substances and greenhouse gases from existing and abandoned infrastructure … plugging leaks in oil and gas wells and reclaiming abandoned mine land," and turning "brownfields" into growth hubs. The executive order gives special consideration to coal and energy sector workers. It creates an Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization to be housed within the Department of Energy and co-chaired by the National Climate Advisor and the Assistant to the President for Economic Policy. Members include 13 cabinet secretaries and top presidential advisors. Still, the executive order suggests that the recommendations could mainly focus on "coordinating investments and other efforts" and mobilizing "existing programs"; it does not propose new budgets or programs, so its short-term scale and impact might not be very large.

The Biden strategy assumes that the newly created jobs will more than offset the job losses in fossil fuels and other climate sensitive industries, although it is not clear whether this will happen. Nevertheless, the Biden administration is acutely aware of the issue, and intends to make every effort to create jobs, especially in communities with significant risk of unemployment due to the loss of fossil fuel jobs.

Overall, however, the executive orders are not very specific about how to create jobs, except for using government procurement and creating the Climate Conservation Corps, and no major new funding has been proposed yet. Biden's campaign climate plan is more specific about the sectors in which new investment can create new jobs, not only in infrastructure, but also in transit, electric power, buildings, housing, and agriculture (Biden 2020c), but the executive orders to date do not include concrete proposals or specific strategies.

4.2 Environmental Justice

Environmental justice is a major priority of the January 27 executive order, although it mostly focuses on administrative organization, procedure, and data analysis rather than concrete actions. It establishes a White House Environmental Justice Interagency Council to be chaired by the Chair of the Council on Environmental Quality (CEQ). Council members include 18 cabinet secretaries and other top level presidential advisors. The Council is required to develop an environmental justice strategy within 120 days. The CEQ is required to create a "geospatial Climate and Economic Justice Screening Tool" within 6 months and publish related interactive maps to help assess the environmental justice impacts of policies, regulations, and budgets. A White House Environmental Justice Advisory Council will also be established within the Environmental Protection Agency. The EPA is directed to "strengthen enforcement of environmental violations with disproportionate impact on disadvantaged communities," and "create a community notification program to monitor and provide real-time data to the public on current environmental pollution." The Attorney General should "consider renaming the Environment and Natural Resources Division the Environmental Justice and Natural Resources Division" within the Justice Department, and "ensure comprehensive attention to environmental justice throughout the Department of Justice, including by considering creating an Office of Environmental Justice within the Department to coordinate environmental justice activities." The Department of Health and Human Services should establish an Office of Climate Change and Health Equity, and an Interagency Working Group to Decrease Risk of Climate Change to Children, the Elderly, People with Disabilities, and the Vulnerable. The Office of Science and Technology Policy should "identify climate strategies and technologies that will result in the most air and water quality improvements" within 100 days.

One concrete target relating to environmental justice is established: 40 percent of the overall benefits of the climate investments should flow to disadvantaged communities. Within 100 days, the CEQ, OMB, and the National Climate Advisor are required to publish recommendations for how this can be done, and how "benefits" could be defined. Moreover, within 60 days of publishing these recommendations, the "agency heads shall identify applicable program investment funds." Finally, an annual Environmental Justice Scorecard should be published on a public website to monitor agencies' progress on environmental justice.

4.3 Carbon Pricing/ Carbon Tax

Prospects for national carbon pricing (such as a carbon tax or emissions trading), at least in Biden's first two years, are not good, although there is a small possibility. The Treasury Department has no authority under existing laws to establish carbon pricing or a carbon tax, so Treasury Secretary Yellen's support for carbon pricing is not enough for it to be adopted. Emissions trading would probably require a complex new law, passed by Congress. Ordinarily, this requires a supermajority in the Senate (60/100), which means the support of 10 Republican senators would be needed. This is extremely unlikely. Carbon pricing by itself, as a budget measure, could probably be included in a budget reconciliation bill, which requires only a simple majority in the Senate. Therefore, a carbon tax may be the only practical option for nation-wide carbon pricing in the US. Still, a carbon tax might not necessarily be supported by all Democrats in Congress, (especially those from states with substantial fossil fuel production) who could prevent it from being included in a budget reconciliation bill.

Nevertheless, existing state level GHG emissions trading schemes will continue, and new ones could be developed. The Biden administration could try to bolster these initiatives in small but important ways through the regulatory process, or by modifying implementation of existing regulations. The Trump administration was considering various regulatory changes that would obstruct these schemes, so simply halting these obstructionist efforts would be highly beneficial.

US fossil fuel companies have now started to support carbon pricing in public, even during the Trump administration, since this would allow continued use of fossil fuels, even at a higher price, compared to other regulations that would directly reduce the use of fossil fuels, such as renewable power requirements for electric utility companies (Lavelle 2019; Green and Gangitano 2019; Dlouhy and Natter 2019). It is not possible to know what these companies are advocating privately, though. Many or most Republicans in Congress will probably oppose carbon pricing, even if some businesses support it.

An interesting implication of this discussion is that the US legal structure and the current US political situation make regulations to physically restrict the production and use of fossil fuels (drilling restrictions, emissions standards, vehicle and power plant regulations, etc.) much easier to adopt compared to carbon pricing. This is because various types of physical restrictions can be implemented unilaterally by the executive branch based on existing laws and regulations, and do not require new laws or budgets to be passed by Congress.

4.4 The Federal Reserve Board

Traditionally, central banks were not involved in climate policy issues. However, in recent years, "there is a growing consensus among central banks that the growing risks to financial stability must be addressed urgently" according to the *Financial Times* (Davies 2021), and central banks are starting to become more involved in climate issues (Campiglio et al. 2018; Tett 2019; AFI 2019). The Financial Stability Board (FSB), an international body which coordinates national financial authorities and international standard-setting bodies, established the Task Force on Climate-Related Financial Disclosures (TCFD) at the request of the G20 in 2015 to strengthen climate-related disclosures (TCFD 2018). In December 2017, eight central banks established the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), which had 83 members and 13 observers as of December 2019.[4]

Surprisingly, the US Federal Reserve Board (FRB) started to become positively involved in climate issues during the Trump administration, well before the 2020 election. In January 2020, FRB Chair Jerome Powell acknowledged that the FRB has a role in addressing climate change risk, and he said that it was studying US membership in the NGFS (Saphir 2020). Shortly after the election in November 2020, before Biden took office, Powell strengthened the Fed's engagement with climate change issues (Condon 2020), and the FRB voted unanimously to join the NGFS. The US formally became a member in December 2020 (Smialek 2020).

In the first week of Biden's term, the FRB announced the creation of a new climate supervision committee "to assess the implications of climate change on the financial system." The committee will be chaired by a senior official, Kevin Stiroh, currently leading the New York Fed's supervisory work, who has previously advocated for greater consideration of climate impacts and has past related experience, including serving as co-chair of a climate risk task force of the Basel Committee on Banking Supervision (Ellfeldt 2021).

Lael Brainard, the only Democratic Federal Reserve Governor, also noted that "the Federal Reserve is co-chairing the Basel Committee on Banking Supervision's Task Force on Climate-Related Financial Risks (TCFR)," and "participating in the Financial Stability Board's (FSB) work on climate change" (Brainard 2021).

[4] See the NGFS website at https://www.ngfs.net/en/about-us/membership.

Thus, it is highly likely that the Fed will continue to strengthen its engagement with climate change issues under the Biden administration, even though Biden will not be able to significantly influence the Board's membership anytime soon. Powell's term as Chair does not expire until February 2022. Currently, there is only one vacancy on the seven-member Board, and 5 of the other 6 Governors are Republicans, including Powell, who was initially appointed by President Obama. Four of the current Governors were appointed by President Trump. In October 2021, Biden will be able to appoint a new Vice Chair for Supervision, and in September 2022, he will be able to appoint the new overall Vice Chair for new 4-year terms. There will be only one more vacancy in Biden's term, however, which will not occur until January 2022, unless someone resigns before the end of their 14-year term.[5]

4.5 Securities and Exchange Commission

Climate is expected to be one of the main priority areas of the Securities and Exchange Commission (SEC) under Gary Gensler, who was nominated to be its Chair (Goldstein, Hirsch, and Sorkin 2021). SEC Commissioner Allison Herren Lee stated that climate risk should be considered as a systemic financial risk and highlighted the need to strengthen climate-related financial reporting in a speech in November 2020 (Lee 2020). When Gensler is confirmed by the Senate, Democrats will have a 3 to 2 majority on the Commission. Until Gensler is confirmed, Democratic Commissioner Lee will serve as the Acting Chair.[6] *Politico* reported that the SEC is already adding climate experts, including one former SEC official who was an adviser to the Principles for Responsible Investment (Warmbrodt 2021b).

4.6 Federal Energy Regulatory Commission (FERC)

The FERC regulates interstate commerce relating to natural gas and oil pipelines and electricity transmission. Therefore, it will play a major role in climate-related energy policy (Dlouhy, Natter, and Malik 2021; Behr 2020). The FERC played a key role in the Trump Administration's efforts to support coal, and it proposed several regulatory measures to benefit coal fired power plants (Gearino 2019).

Surprisingly, though, the FERC started shifting in a somewhat more positive direction on climate change shortly before the 2020 presidential election. In September 2020, the FERC issued an order opening wholesale grid markets to distributed energy resources, with Chair Neil Chatterjee voting to support it together with Democratic Commissioner Richard Glick in a 2-1 vote[7] against Republican Commissioner James Danley (St. John 2020; Morehouse 2020). In October 2020, the FERC "issued a proposed policy statement saying the panel has the authority and willingness to consider potential grid operators' requests to incorporate a carbon tax into its rate structures," although Chairman Neil Chatterjee clarified that it did not mean a proactive or nationwide approach; *E&E News* explained that it meant that the FERC would not automatically reject state plans (Dillon and Skibell 2020). Chatterjee was removed as Chair by President Trump after these two actions, although he remained in his position as Commissioner (Gearino 2020).

President Biden selected Democratic Commissioner Richard Glick to be the Chair of the FERC. Senate confirmation is not required since he is already a Commissioner (Gardner 2021), so he can take office immediately. However, the Commission will have a 3 to 2 Republican majority until June 30 when Chatterjee's term expires, since Trump filled two vacancies (one Democratic and one Republican) in December 2020. Nevertheless, the new Chair will still have a major influence on the overall direction, since the Chair directly supervises the career staff, which can be reorganized, and he can put new items on the

[5] Federal Reserve Board Governors have 14-year terms, but the Chair and Vice Chairs have only 4-year terms.
[6] See the SEC's Press Release at (https://www.sec.gov/news/press-release/2021-13).
[7] At the time, there were 2 vacancies on the 5 member Commission.

agenda (Hulac 2020). Moreover, Chatterjee may be more receptive to some measures to support renewable energy than expected, considering his decisions in autumn 2020. Under Biden, the Commission could promote upgrading the electric grid, remove regulatory obstacles to renewable energy, facilitate state cooperation on emissions trading, and restrict permits for oil and gas pipelines.

4.7 Trade and a Carbon Border Adjustment

Strengthening US trade competitiveness was an important element of Biden's climate plan during the presidential election campaign. Biden promised to "lead America to become the world's clean energy superpower" and proposed that government procurement should buy more domestic products ("Buy American") (Biden 2020b, 2020d). The plan also states that "we can no longer separate trade policy from our climate objectives."

Biden also proposed the imposition of "carbon adjustment fees or quotas on carbon-intensive goods from countries that are failing to meet their climate and environmental obligations" during the presidential election campaign. This appears to be similar to the European Commission's proposed "carbon border adjustment" as part of its "European Green Deal" to protect the competitiveness of European industries against imports from countries with weaker climate policies. These measures were not included in Obama's signature trade initiatives, the Trans-Pacific Partnership (TPP) and the Trans-Atlantic Trade and Investment Partnership (TTIP).

Some major companies are supporting carbon border adjustment. A carbon tax linked to a carbon border adjustment is being promoted by the Climate Leadership Council, a group led by former Republican Secretaries of State James Baker and George Schultz (who passed away in February 2020) which includes many large corporations.[8] In contrast, Congressional Republicans, who generally support fossil fuel industries, are expected to oppose it.

Since the beginning of the Trump administration, the previous consensus on multilateral trade liberalization among US policymakers, both Democratic and Republican, appears to have dissolved. The Republican consensus surprisingly first eroded during the debate on tax cuts in 2017, when some Republicans (unsuccessfully) supported a "border adjustment" (not climate-related) to raise some revenue to offset the tax cuts (Pramuk 2017). Later, Trump engaged in multiple "trade wars" imposing various tariffs on China as well as close allies including Canada, Mexico, the EU, and others. US trade law gives the President wide powers to impose various kinds of tariffs for different reasons, but typically these were rarely used by past presidents, who strongly supported the multilateral trading system (Destler 1986).

Biden could also use these measures (Holzman 2020) to incentivize climate action by other countries, including as a carbon border adjustment, which in addition to tariffs, could also include reporting requirements for US companies on their carbon-related investments outside of the US, restrictions on carbon-related foreign investments by US companies, and sanctions or export controls on foreign companies (Harrell 2020).

Some Republicans in Congress unsuccessfully tried to stop Trump's unorthodox use of these laws, as other Republicans supported Trump (Everett and Levine 2019). This set a precedent for broad presidential discretion to unilaterally reinterpret how the trade laws should be implemented.

In sum, there is some possibility that Biden may move forward with a carbon border adjustment, since it was in his campaign plan, and since the Trump administration has prepared the way to reinterpret the

[8] The plan is available on their website (https://clcouncil.org/our-plan/).

trade laws more broadly and use them much more aggressively. It is not clear whether Congressional Republicans would support a carbon border adjustment. On one hand, they are generally opposed to climate-related measures, and they have traditionally supported conventional trade liberalization. On the other hand, under Trump, many have supported Trump's unilateral unorthodox trade restrictions. If Biden succeeds in establishing a carbon tax, then some businesses may insist on a carbon border adjustment. Therefore, the possibility that some Republicans could support a carbon border adjustment cannot be ruled out.

A complex pending trade issue is Trump's tariffs on imported solar cells and modules. On one hand, the tariffs benefit domestic US solar producers, but on the other hand, they hurt importers and users of solar equipment by making them more expensive. One analysis explains the difficulty in predicting the Biden administration's decision: although Biden is expected to take a more multilateral approach to trade, he indicated that he would not make immediate changes to Trump's tariffs, and he may still adopt a strong stance towards China – the main source of solar cell and module imports – on trade issues (Merchant 2020).

5. National Security

The principle of "putting the climate crisis at the center of United States foreign policy and national security" is the first point highlighted in the January 27 executive order. The order states that "the United States will exercise its leadership to promote a significant increase in global climate ambition to meet the climate challenge." The top defense and foreign policy officials, the Secretaries of State, Defense, and Homeland Security, the National Security Advisor, and the Homeland Security and Terrorism Advisor, are all members of the National Climate Task Force. The order mandates an analysis of the security implications of climate change. The results of this analysis are required to be incorporated in the National Defense Strategy, Defense Planning Guidance, and other relevant documents and processes, and an annual progress update is required. The Secretary of Homeland Security is also required to consider climate change implications in the Department's strategies, planning, and other documents and processes, and annually report on the progress.

The US Department of Defense (DOD) will be involved in both domestic and international aspects of climate policy. It is now well understood that climate change has important national security implications. DOD's operations are both global and domestic, and so are their impacts and vulnerabilities. According to one analysis, using its huge annual budget of about USD 700 billion, DOD could play a large, direct role in scaling up markets for renewable energy and energy saving technology. It also has a large research budget which can contribute to developing climate friendly technology. DOD is the largest energy user in the federal government, and it "has long been a crucial customer for clean energy technologies" (Wolf 2021). DOD can be expected to play a strong, leading role in climate issues during the Biden administration.

DOD began to focus on climate issues during the Obama administration, when it issued a report calling climate change an immediate threat to national security, and it began to consider climate issues in its strategy development (Davenport 2014; Broder 2012). The Trump administration tried to reverse this policy and did not include climate in its national security strategy, but DOD did not change its departmental policies (Fountain, Friedman, and Plumer 2017). DOD issued another report during the Trump administration, mandated by Congress, on climate threats to national security, warning of major climate-related flooding and fire risks to US military installations (Capaccio, Dlouhy, and Natter 2019). Under Biden, the US military will be able to strengthen its climate-related efforts.

Defense Secretary Lloyd Austin issued a statement on 21 January that he “supports the President’s direction today to include climate considerations as an essential element of our national security and to assess the impacts of climate change on our security strategies, operations, and infrastructure,” and that DOD “will include the security implications of climate change in our risk analyses, strategy development, and planning guidance.”[9]

6. International Cooperation on Climate Issues

6.1 International Cooperation on Climate in General

Climate issues are discussed in many international forums such as the G7, G20, and all manner of UN bodies, programs, and projects, including on the Sustainable Development Goals (SDGs), and not just at the UNFCCC’s[10] global climate negotiations. The Trump Administration’s policy was to obstruct cooperation on climate issues in all international forums and avoid even mentioning the word “climate” in meeting outcome documents. This policy was implemented by the State Department, which has jurisdiction over US participation in many of these international meetings.

This situation will change completely and immediately in the Biden Administration. Secretary of State Antony Blinken has already been confirmed by the Senate, so he can immediately provide overall direction to the State Department. US involvement in all these international processes will also be strongly influenced by Special Envoy for Climate Kerry. Again, this will not necessarily reduce GHG emissions right away, but a return to strongly proactive US engagement in these international climate initiatives will substantially improve their progress.

6.2 The Paris Agreement and Biden’s Overall Strategy

President Biden’s policy on the Paris Agreement is naturally a key focus of global attention. On President Biden’s first day in office, the US deposited a new instrument of acceptance to the Paris Agreement, which entered into force on February 19, 2021 (UN 2021). Of course, this is an important symbolic step, but it will not reduce GHGs in the short run. President Biden will host a Leaders Summit on Climate Change on Earth Day, April 22, 2021, and the US is expected to announce its Nationally Determined Contribution (NDC) by then.[11] It will be a lot of work for Biden’s climate advisors in such a short time to calculate the potential emissions reductions from a wide variety of potential policy changes, many of which are uncertain. The NDC does not need to be approved by Congress. However, if the Biden administration includes policies which need Congressional approval, then there is a risk that the US would not be able to meet its commitment. Therefore, the administration may choose to include in the only policies such as executive orders and regulations in the NDC, although this may limit the NDC’s potential level of ambition.

Regarding the overall policy direction, the January 27 executive order states that the US “will exercise its leadership to promote a significant increase in global climate ambition.” The US will also “press for enhanced climate ambition and integration of climate considerations across a wide range of international fora” including the G7, G20, and others including those related to the Arctic, ocean, energy, aviation, and

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[9] The statement is available at: (https://www.defense.gov/Newsroom/Releases/Release/Article/2484504/statement-by-secretary-of-defense-lloyd-j-austin-iii-on-tackling-the-climate-cr/).

[10] United Nations Framework Convention on Climate Change

[11] Press Briefing by Press Secretary Jen Psaki, Special Presidential Envoy for Climate John Kerry, and National Climate Advisor Gina McCarthy, January 27, 2021, available at (https://www.whitehouse.gov/briefing-room/press-briefings/2021/01/27/press-briefing-by-press-secretary-jen-psaki-special-presidential-envoy-for-climate-john-kerry-and-national-climate-advisor-gina-mccarthy-january-27-2021/).

shipping. The US will also develop a strategy to "promote financing programs, economic stimulus packages, and debt relief initiatives that are aligned with and in support of the goals of the Paris Agreement" in international financial institutions, including the World Bank and International Monetary Fund. Other strategies to be developed include protecting "the Amazon rainforest and other critical ecosystems that serve as global carbon sinks," "ending international financing of carbon-intensive fossil fuel-based energy while simultaneously advancing sustainable development and green recovery," and innovation and deployment of clean energy.

The Biden administration will also send the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer to the Senate for ratification. Treaties are not easy to approve since they require a two-thirds majority, 67 senators. President Trump refused to send the treaty to the Senate despite strong support from US businesses, including the US Chamber of Commerce, and some Republican senators (McKenna 2019). Nevertheless, the law to actually phase down the use of hydrofluorocarbons (HFCs), the American Innovation and Manufacturing Act (AIM), was included in the massive COVID-19 stimulus and omnibus spending bill which was passed by Congress and signed into law by President Trump on December 27, 2020 (Doniger and Hillbrand 2020). One US environmental think tank is optimistic about prospects for ratification, noting that 17 Republican senators cosponsored the AIM Act (Hillbrand and Doniger 2021).

Biden's campaign climate plan included several additional proposals on international climate policy which were not mentioned in the executive orders (Biden 2020b):

- "Enforceable international agreements to reduce emissions in global shipping and aviation"
- "Demand a worldwide ban on fossil fuel subsidies"
- "Create a Clean Energy Export and Climate Investment Initiative"
- "Significantly reduce the carbon footprint" of the lending portfolios of the Overseas Private Investment Corporation (OPIC), the Export-Import Bank, and the US International Development Finance Corporation, and prohibit them from financing coal-fired power plants.
- A new "Global Climate Change Report" to "name and shame global climate outlaws." The report will "hold countries to account for meeting, or failing to meet their Paris commitments and for other steps that promote or undermine global climate solutions."
- "Pursue a global moratorium on offshore drilling in the Arctic and reestablish climate change as a priority for the Arctic Council."

Biden's campaign climate plan also proposed a "comprehensive strategy" for the Western Hemisphere including (Biden 2020b):

- "A framework to limit greenhouse gas emissions related to land use, forests, and agriculture"
- "New common standards for the greening of manufacturing, mining, and tourism"
- "Major investments in clean-energy technologies"
- "A more integrated energy grid from Mexico through Central America and Colombia supplied by increasingly clean energy"
- "A special focus on the Caribbean and the Northern Triangle of Central America to promote transitions to clean energy as well as climate change adaptation and resilience."

Trade measures are the main means proposed for enforcing countries' climate commitments, according to Biden's campaign plan. The plan emphasizes the need for "strong new measures to stop other countries from cheating on their climate commitments," including "carbon adjustment fees or quotas" as mentioned above and conditioning "future trade agreements on partners' commitments to meet their enhanced Paris climate targets" (Biden 2020b). Regarding China, especially, future bilateral agreements on carbon mitigation will be conditioned on the elimination of coal export subsidies and reducing the carbon footprint of Belt and Road projects.

6.3 Climate Aid to Developing Countries

The January 27 executive order requires the development of a "climate finance plan, making 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." The plan will be developed within 90 days, led by the Secretaries of State and Treasury in coordination with Special Climate Envoy Kerry. There is no indication whether this may include technology transfer or loss and damage compensation.

Biden's campaign climate plan specifically recommits the US to contribute to the Green Climate Fund (GCF) (Biden 2020b). There are two possible ways to do this. One is through a budget reconciliation bill since it is a budget item. It is unlikely that Congressional Republicans would support it. The second option is that Biden could shift funds from other budget accounts. The Obama administration used this method to pay USD 1 billion of its USD 3 billion commitment before Trump took office. Congress, at that time controlled by the Republicans, did not agree to appropriate the funds, so the money was transferred from another fund. Republicans objected to the procedure, but they did not challenge it (Henry 2017). Moreover, Trump set a precedent for reprogramming funds from the military budget to build the border wall with Mexico through a national emergency declaration, which was not stopped by the Supreme Court, so it will be difficult for the Republicans to object to similar moves by the Biden administration (Liptak 2020).

Biden's campaign climate plan also states that "developing countries that make climate commitments" may be provided "green debt relief."

7. A National Climate Emergency?

Some, including Senate Majority Leader Chuck Schumer, have suggested that President Biden should declare a national climate emergency (Natter and Dlouhy 2021; Natter 2020). In the US, emergency declarations are not just symbolic since they give the President various legal powers to act unilaterally. This would enable President Biden to bypass Congress in some cases. President Trump used an emergency declaration to divert military funds to pay for the Mexican border wall, since Congress, even when it had a Republican majority before 2018, refused to appropriate the level of funds that he requested.

Advocates of a climate emergency declaration have identified several actions which it could enable (Millet 2020; Natter and Dlouhy 2021). These include (a) reallocating funds to support clean energy and other climate-related priorities, (b) using the Defense Production Act to mandate the domestic production of various types of renewable energy-related equipment, (c) suspending offshore drilling, (d) restricting the transportation of fossil fuels, and (e) reinstating the ban on export of crude oil.[12]

All these actions are very complex and would take time to plan. An emergency declaration might also reduce Republican willingness to cooperate on other policies, and it might also be opposed by some moderate Congressional Democrats. Therefore, it is probably not likely in the short term. But if the Republicans strongly resist and delay Congressional consideration of Biden's climate agenda, then an emergency declaration could become more likely.

[12] The longstanding ban on crude oil exports was lifted by Congress in 2015 with the support of the Obama administration.

8. Conclusion

Overall, Biden's climate policy seems more ambitious compared to the Obama administration's "all of the above" energy policy, which supported renewable energy but still promoted some fossil fuels. *Bloomberg* reported that Biden's early actions were much faster and more ambitious than expected, leaving the oil industry "stunned" and "aghast" (Baker and Natter 2021).

The Biden administration has prioritized climate and made a quick start on climate issues. A strong team is already in place, and all cabinet members – including the economic departments and agencies – will prioritize climate issues with a whole-of-government approach. Trump's anti-climate executive orders will be reversed. Some of Trump's anti-climate regulations have already been reversed, and the process of reversing the others is already underway. The US is back in the Paris Agreement, and its NDC is expected by April 2021. The US also will immediately restart proactive cooperation on climate issues with a wide range of international processes and programs.

Biden's strategy to gain political support for his climate policies is to package them as job creation policies. While this strategy sounds attractive, how many jobs will actually be created is an open question. Measures that are based on executive orders and regulations, and measures which rely on existing budgets, are likely to be implemented. This includes especially strengthening scientific research and reports and strengthening the role of science in decision making. However, a key limitation of the executive orders and regulations is that they cannot generate new funds or large new programs. Significant new investment, job creation, and corresponding actual GHG reductions will require increased funding and probably authorization of new programs from Congress. This will be much more difficult. Therefore, even if Biden's plans can be implemented, it is not clear whether they could achieve net zero.

Internationally, Biden promises stronger climate ambition and actions than have been taken so far, such as action on fossil fuel subsidies, coal financing, aviation, and shipping, to be enforced through trade measures including a carbon border adjustment. However, whether these can be achieved, and even if they are achieved, whether they will be enough to achieve "net zero" is not clear.

Nevertheless, Biden's climate policies are probably at the maximum feasible level of ambition, especially in the short term. They also will provide a solid foundation for longer term actions. Much will depend on whether Biden can persuade people that climate action can create good jobs, especially in areas with significant fossil fuel-related employment. If he can quickly and successfully create a significant number of visible good jobs, then it will be much easier to secure stronger political support for more ambitious measures, which need a stronger pro-climate majority in Congress. However, if opponents of stronger climate action gain a majority in the House or Senate or both in the 2022 midterm elections, then further action except on regulations will be blocked for at least another two years.

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