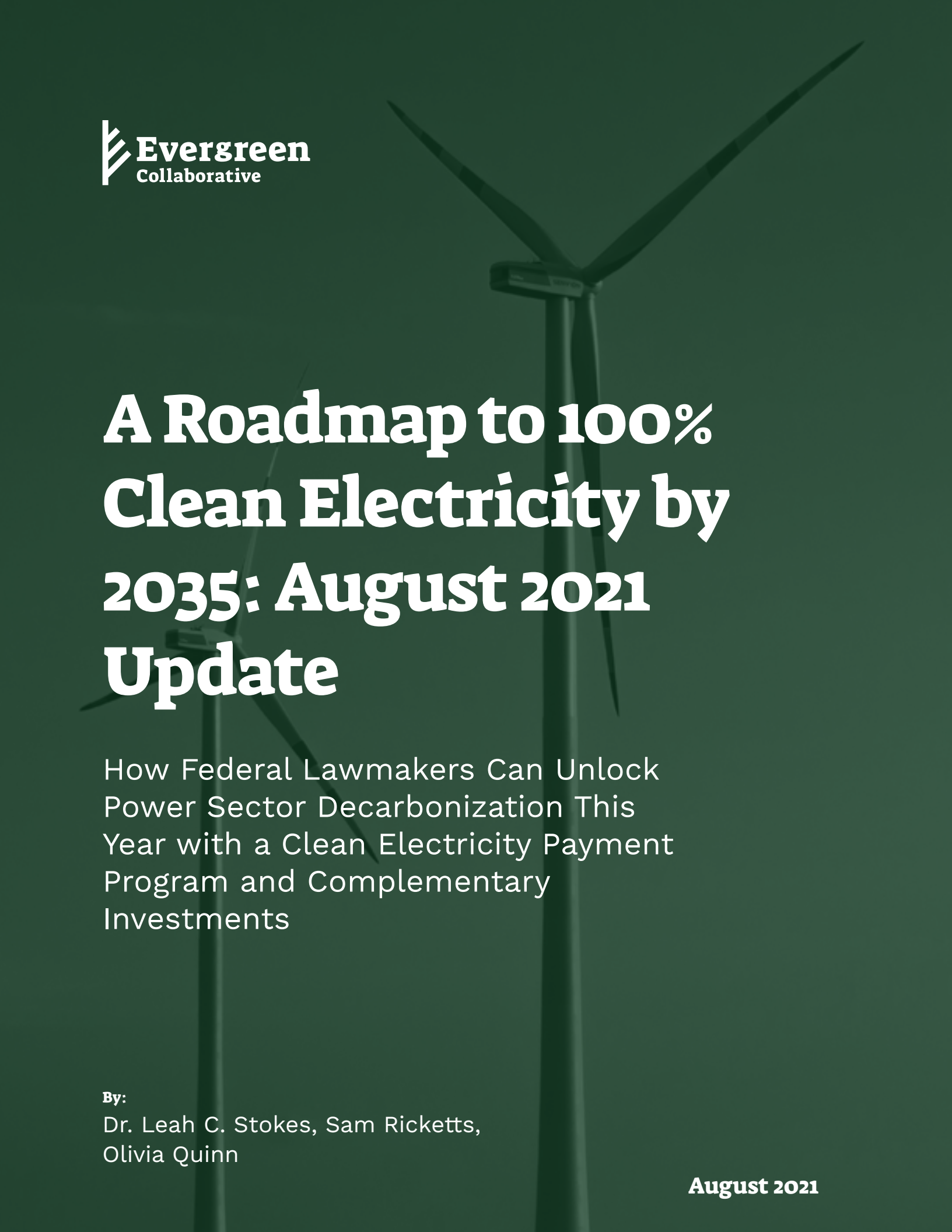

Evergreen Collaborative

A Roadmap to 100% Clean Electricity by 2035: August 2021 Update

How Federal Lawmakers Can Unlock Power Sector Decarbonization This Year with a Clean Electricity Payment Program and Complementary Investments

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Executive Summary

Cleaning up our power grid is essential to winning the fight against the climate crisis, and a federal policy that is modelled after successful state Clean Electricity Standards (CES), but made compatible with Senate budget reconciliation rules is the best policy to make it happen. This policy, known as a Clean Electricity Payment Program (CEPP), will create millions of new jobs, eliminate poisonous air pollution, and reduce utility bills for ratepayers across the country. **If federal lawmakers pass a well-designed CEPP and robust complementary investments this year, it will put the U.S. on a path to 80% clean electricity by 2030, and 100% by 2035**. This power sector transformation can achieve over half of President Biden's commitment for a 50-52% reduction in domestic greenhouse gas pollution by 2030. Coupled with simultaneous efforts to electrify buildings, transportation, and parts of heavy industry, this clean electricity can eventually drive 70-80% reductions in America's climate pollution, providing a real opportunity to avoid the worst impacts of climate change and to build a just and thriving clean energy economy.

In this update to the February 2021 report, *A Roadmap to 100% Clean Electricity by 2035*, from Evergreen Action and Data for Progress, we explain how action in the coming months is essential. Congress must pass bold investments in clean energy through budget reconciliation. The administration must also begin making important progress toward 100% carbon-free power under its existing authorities. We summarize the CEPP that's been proposed in Congress: an investment program that would mimic the impact of a traditional CES and achieve the goals of sustained, effective, and equitable power sector decarbonization. We also outline additional, essential investments that are critical to reaching 100% carbon-free electricity, creating millions of good-paying jobs, and driving greater health outcomes and economic opportunities in disadvantaged and energy transition communities.

Introduction

The power sector currently accounts for over one-quarter of U.S. greenhouse gas pollution, which can be effectively eliminated by the shift to 100% clean electricity. That clean electricity can also then be put to work slashing pollution throughout other sectors of the economy, with a broader federal (and state and local) policy agenda that aims to electrify our cars and transit, buildings and appliances, and parts of manufacturing and industry. Through clean electrification, the U.S. can eventually reduce domestic greenhouse gas pollution by up to 70-80%.

Clean and renewable electricity performance standards are already in place in over 30 states and territories, and momentum has been building for a similar federal policy for years. In 2019, Governor Jay Inslee released his 100% Clean Energy for America plan, which called for a 100% Clean Electricity Standard by 2035, with an interim target of 80% clean energy by 2030. The following year, President Biden embraced Inslee's standard in his own campaign climate platform. In February 2021, Evergreen Action and Data for Progress released the first version of this report, *A Roadmap for 100% Clean Electricity by 2035*, detailing several ways that a CES-like policy could be compatible with budget reconciliation. And as part of his American Jobs Plan released in spring 2021, President Biden has called on Congress to pass a CES that achieves 100% clean electricity by 2035, and an interim target of 80% clean electricity by 2030. **Now, Congress is poised to advance this policy in legislation this summer and deliver what could be the most consequential climate policy of the Biden era.**

The Clean Electricity Payment Program (CEPP) is distinct from state CES policies, but it mimics the impact of a traditional CES by providing federal investments to electric utilities to incentivize robust annual growth in their use of clean energy. The program would also include financial penalties, to ensure no utilities fall behind in the transition towards an average of 80% carbon-free power nationwide by 2030. Utilities would need to use their clean electricity payments to benefit consumers, by lowering customer bills, paying for clean electricity growth, reducing emitting generation, and increasing energy efficiency. And the clean electricity payments would take into account the diversity of utilities—including those that are just getting started with clean electricity and those that are further along. It would work for utilities in both regulated and restructured markets and those that are owned cooperatively, municipally, or by investors.

A typical CES requires all covered utilities to meet the same ambitious clean energy targets by ramping up the percentage of carbon-free power sources in their portfolio over time. By contrast, the CEPP would set annual targets for growing clean electricity on a utility-by-utility basis. In a traditional CES, the cost is carried in electricity rates, and therefore by utility customers. By contrast, the CEPP, which is an investment program, includes the federal government as an essential partner in rapidly cleaning up the power sector, shielding Americans from electricity bill rate impacts.

In addition, there are a suite of complementary investments that federal lawmakers must make in the coming months, alongside a CEPP, to equitably transform the power sector over this decade. There are also numerous steps that the Biden Administration must take using its existing authorities, without waiting on Congress, in order to continue to drive progress on confronting power sector pollution.

CES Policies are Proven in States

Leadership at the state level has already demonstrated that CES policies are an effective way to propel new clean energy development, create jobs, and drive down costs for consumers. Over 30 states and territories have already implemented CES-like policies that have helped grow clean energy industries that now employ over three million Americans. Already 11 states and territories have adopted a 100% CES or carbon-free electricity requirement. A federal policy will build on this success in those states, without pre-empting their efforts, and multiply state policies' impact.

CES Policies are Popular with the Public

The American people support a federal CES. Polling from Data for Progress has found that nearly two thirds of voters support transitioning to 100% clean electricity by 2035. And a clear majority of voters in every state in the country—including key states like West Virginia, Arizona and Georgia—are on board, according to research from Third Way.

Figure 1. States with 100% Clean Electricity Policies

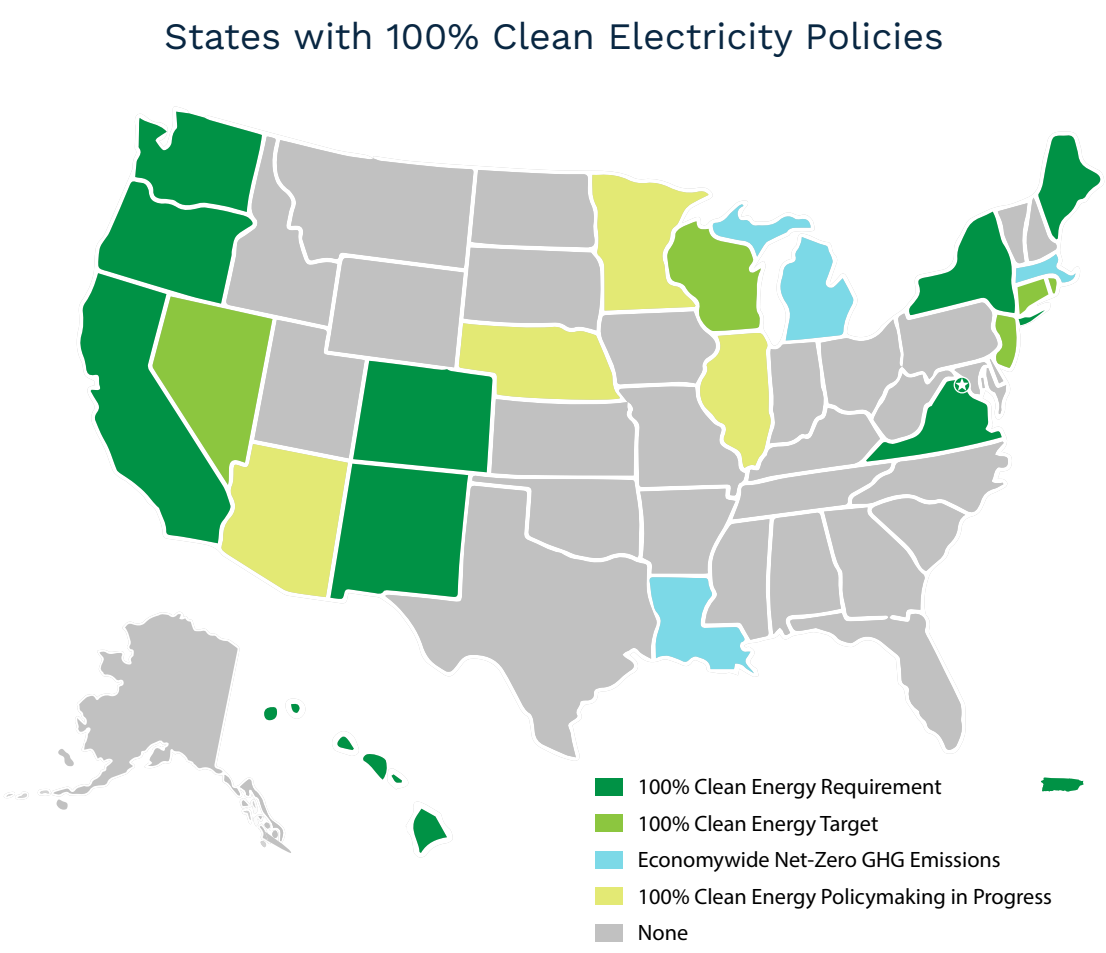


Figure 2. National Likely Voter Support for 100% Clean Electricity by 2035

Question: Would you support or oppose the government moving the country to a 100% clean energy electricity grid by 2035 (State Level)

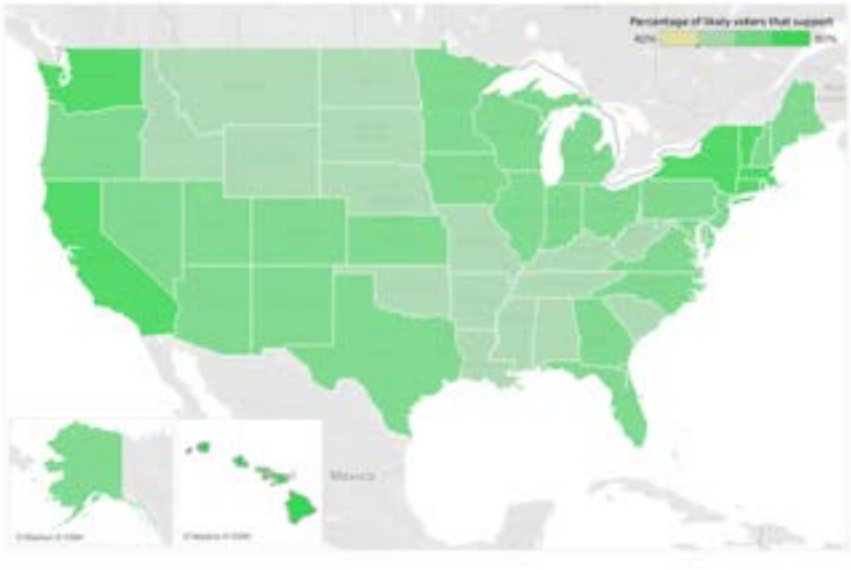
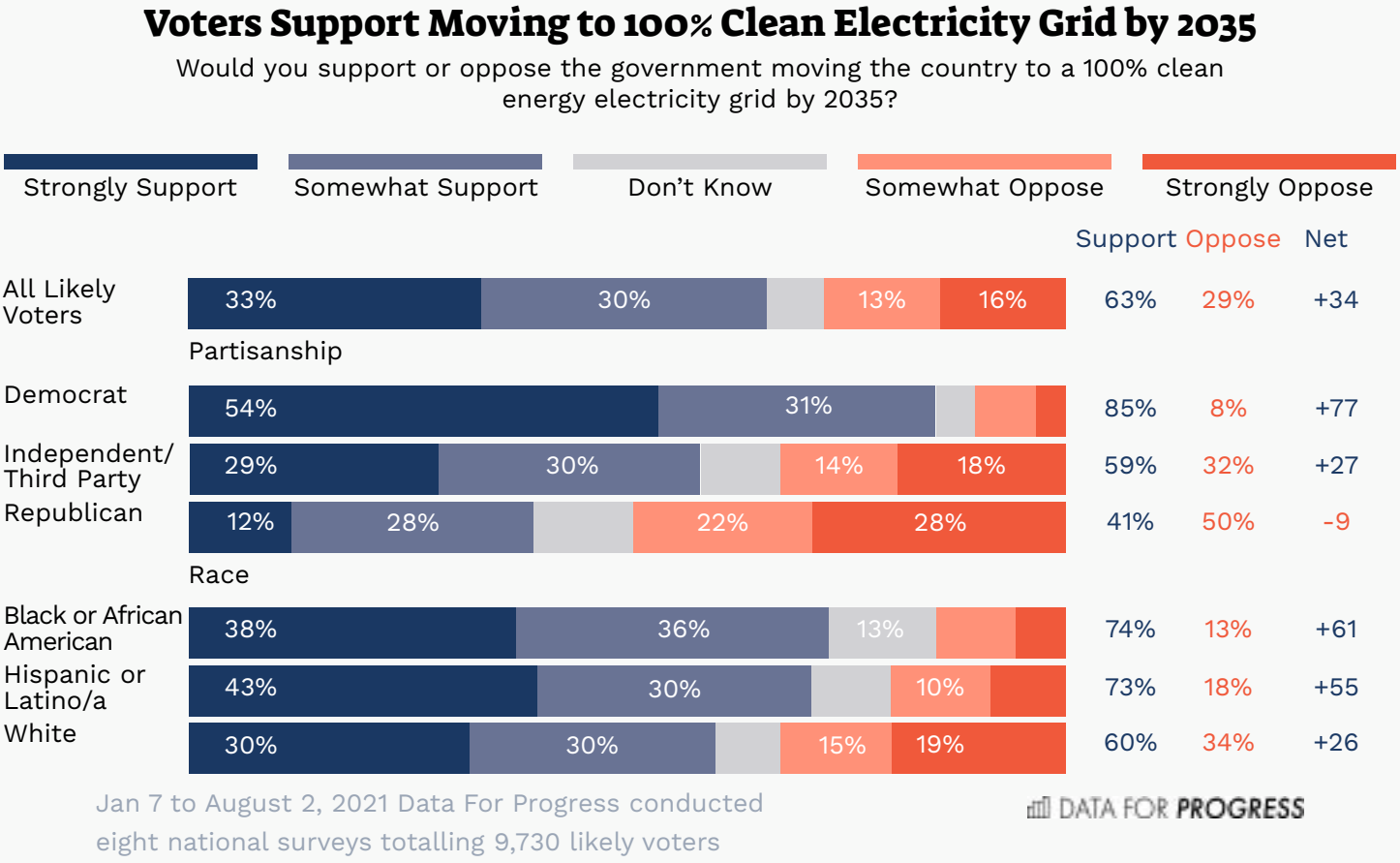


Figure 3. Data for Progress, Support for 100% Clean Power by 2035 by Party and Race, July 2021 Poll



CEPP is Part of a Broad Portfolio of Policies for a Clean Energy Recovery

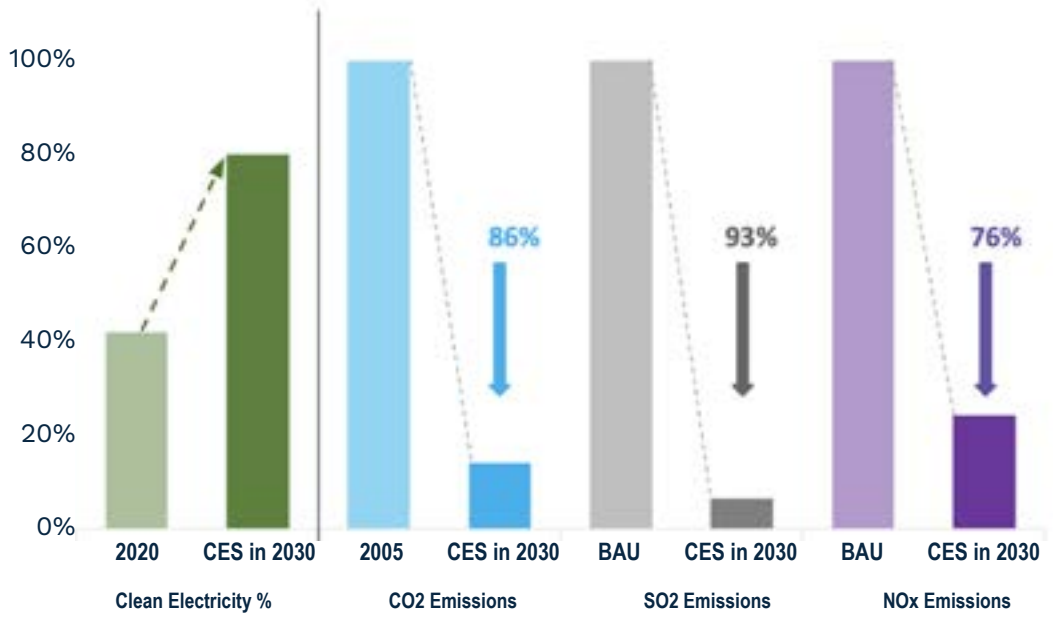
A CEPP is the cornerstone of deep decarbonization in the US, yet numerous other policies are necessary to deliver pollution reductions at the scale of the crisis and to build a just, equitable and thriving clean energy economy. In Section 3 of this report we outline several critical federal investments that must be passed by Congress alongside a CEPP. They include long-term and more accessible clean electricity tax incentives; funding for air pollution monitoring and for updating and enforcing *Clean Air Act* standards to drive targeted pollution reductions in overburdened communities; a Clean Energy Technology Accelerator; Clean Energy Challenge Grants for state, tribal and local governments; greater support for key federal programs that reduce energy burden; forgivable hardship loans for rural electric cooperatives to retire polluting power plants and reinvest in next generation rural electrification and economic development; funds to support a just and stable transition for energy workers; and investment in expansion of electric transmission lines.

CEPP will Drive Job Creation and will Advance Pollution Reductions and Equitable Economic Opportunities for Every Community

The pollution reductions driven by a CEPP won't just boost America's fight against the climate crisis, they'll also save hundreds of thousands of lives by eliminating toxic air pollution. Right now, fossil fuel power plants are a major source of the pollution that causes asthma, emphysema, strokes, premature death, and more. Communities of color have been hit hardest by that pollution and have suffered the worst impacts—Black children are twice as likely to develop asthma as white children. A recent study found that implementing one version of a CES that achieves 80% clean electricity by 2030 would save an estimated 317,000 lives and avoid more than $1 trillion in health care costs.

A CEPP will also power America's clean energy economic recovery by creating millions of good-paying jobs in the clean energy economy and having the federal government protect working families from rising energy bills as we transition to a clean grid.

Figure 4: CEPP and Pollution Reduction Outcomes



Source: NRDC modeling with IPM

Part 1. Action This Year is Essential for 100% Clean Electricity

The Biden Administration and Congress must make progress in 2021-22 towards 100% clean electricity. **100% clean electricity is the linchpin in economy-wide decarbonization**, which must be pursued urgently by federal lawmakers in order to avoid the worst impacts of accelerating climate change. The transition to carbon-free electricity also affords the U.S. an enormous economic opportunity to put people to work building new clean energy projects, and increasing energy efficiency, in every region and community.

This year, the largest policymaking opportunity—the generational opportunity—facing the country is legislative action in Congress on President Biden's Build Back Better agenda. This agenda includes a 100% Clean Electricity Standard (CES), or similar budgetary program, to achieve 80% carbon-free power by 2030 en route to 100% by 2035, along with bold investments in clean energy and sustainable infrastructure, and a central commitment to environmental justice. Also, this year the Biden Administration must begin to use its existing executive authorities—the *Clean Air Act*, in particular—to cut pollution from power plants.

In Congress, a federal CES should be a candidate for bipartisan support. Numerous current and former Republican senators have supported CES legislation in the past. Unfortunately, however, elected Republicans in Washington, DC, are unwilling to recognize the urgent demands of climate science and economic opportunities that sit plainly before them. And zero are willing to act on any meaningful policies to address them. In particular, Senate Minority Leader Mitch McConnell (R-KY) and his obstructionist caucus have shown us that they won't hesitate to abuse the filibuster—a parliamentary roadblock that gives a minority (41 of 100) senators the ability to block any legislation—to prevent climate progress in Congress. But luckily there's a way to advance effective power sector decarbonization with just a simple majority in the Senate: Budget Reconciliation. And passing a federal CES, or a similar investment program that achieves its goals, through budget reconciliation is not only possible, it is our best option to bypass partisan obstruction and deliver the clean energy economic recovery that the country needs.

Achieving the Goals of a Clean Electricity Standard is Compatible with Budget Reconciliation

The undemocratic idiosyncrasies of the U.S. Senate have led supporters of climate action to focus on the budget reconciliation process to achieve their legislative goals, with major legislative action now pending around the federal fiscal year 2022 (FY22) budget in the second half of 2021. This reconciliation process allows for passage of legislation with a simple majority in the upper chamber, rather than the supermajority that's needed to overcome the filibuster. (Fifty-one votes or, 50 votes plus the vice president's tie-breaking vote.) However, budget reconciliation can be used only for legislation that affects federal spending, revenues, and the debt limit—essentially, legislation that is focused on the budget. Any legislation that is advanced through budget reconciliation is subject to the constraints imposed by the Byrd Rule (named

after the late Sen. Robert Byrd (D-WV)), which is designed to ensure that all provisions of a reconciliation bill have budgetary impacts that are not "merely incidental" to broader changes intended in policy.

Rulings on whether a piece of legislation is "reconcilable" are subject to the discretion of the Senate parliamentarian. The process is opaque, and therefore it is not possible to guarantee any given legislation through reconciliation will be successful, but understanding the rules and how they are interpreted provides insight into how to design legislation so that it is optimized for congruence with the Byrd Rule.

According to a 2020 report from the Congressional Research Service (CRS), under the terms of the Byrd Rule, a legislative provision could be considered "extraneous" to the reconciliation instructions provided to committees in the budget resolution, and thus subject to removal from a budget reconciliation bill, if, among other things, it does not produce a change in outlays or revenues, if it produces a change in outlays of revenues incidental to the non-budgetary components of the provision, or if it would increase the deficit beyond the 10 year 'budget window.'

In Part 2, we discuss a newly proposed federal investment program—a Clean Electricity Payment Program (CEPP) championed by Sen. Tina Smith (D-MN)—that is congruent with reconciliation and would mimic the impacts of a CES upon the power sector to reach 80% clean electricity nation-wide by 2030. By passing this budget program, coupled with complementary investments, Congress could succeed this year in putting the country on the path to 100% clean power by 2035.

Use of Existing Executive Authority

In addition, the Biden Administration must also this year begin to use existing authorities to get started immediately in driving pollution reductions in the electricity sector, and providing more just and equitable outcomes for those communities that have been overburdened with years or decades of power plant pollution. These actions will be important on their own terms, regardless of legislative outcomes, and they necessitate immediate action.

First, the Environmental Protection Agency (EPA) must update and aggressively enforce stringent mercury and air toxics standards, and ambient air quality standards for existing and new power plants. Setting stronger multi-pollutant standards on power plants, immediately and under existing authority, is a public health and climate imperative. Second, the Federal Energy Regulatory Commission (FERC) should act to restructure electricity markets under existing authorities granted by the Federal Power Act. This includes encouraging competition and wholesale market expansion, integrating distributed energy technologies like batteries and EVs, and removing barriers to demand response. Third, the administration must aggressively and creatively employ existing federal financing authorities and funding mechanisms—including, but not limited to, the Department of Energy (DOE) Loan Guarantee Program and the Department of Agriculture (USDA) Rural Utilities Service—to leverage greater private investment into clean energy deployment. The administration has begun to make progress in a number of the areas, as part of a "whole-of-government" climate agenda. But much more remains to be done.

Part 2. Clean Electricity Payment Program (CEPP): A Plan for Congress to Get on a Path to 100% Clean Electricity by 2035 in Budget Reconciliation

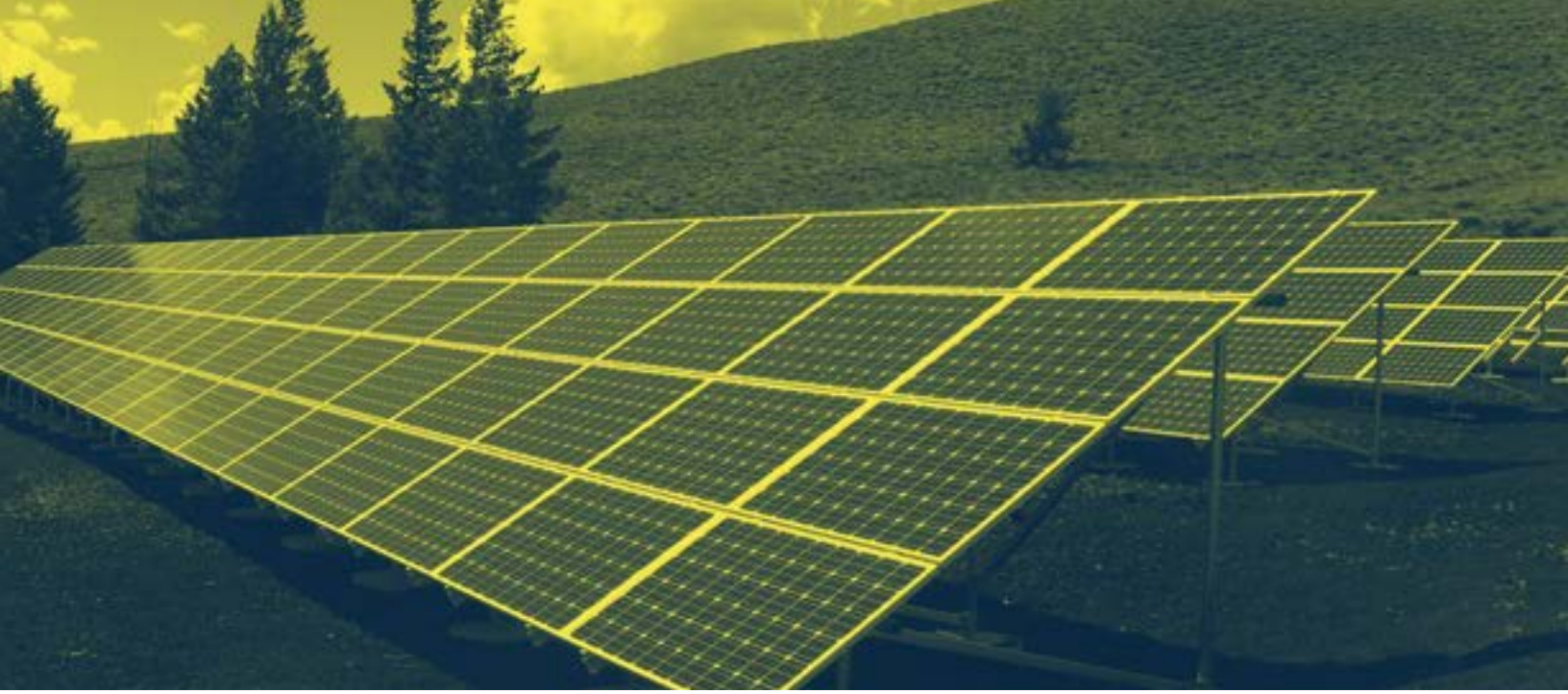
A federal policy that mimics the impact of Clean Electricity Standard (CES) but is compatible with budget reconciliation—a Clean Electricity Payment Program (CEPP)—would create hundreds of thousands of jobs and achieve an 80% clean electricity *nationwide* average by 2030. As proposed, it would provide incentive payments to electric utilities (load-serving entities, or LSEs) to increase clean electricity and reduce emitting generation. It would impose a fee on LSEs that are not making adequate clean energy progress. LSEs must use the payment to benefit consumers by paying for clean electricity growth and lowering customer bills. And the payment program would take into account the diversity among LSEs, including those that are just getting started with clean electricity and those that are further along. It would also work for LSEs in both regulated and restructured markets and those that are owned cooperatively, municipally, or by investors.

A well-designed, equitable clean electricity policy requires both a bold decarbonization target *and* the funds necessary to get there. A CEPP does both. By shifting the cost of the clean energy transition from consumers to the federal government's progressive tax base, a CEPP protects ratepayers from increased electricity bills, particularly low-income households that already bear a greater energy burden. Additionally, valuable co-benefits of decarbonization, like avoided premature deaths and growing clean energy employment, will accrue in states across the country, especially in red states. And, public support for a CEPP is significant and growing, with major businesses, utilities, labor and environmental advocates, and voters of both parties signaling that they are ready for a pollution-free power sector.

Clean Electricity Thresholds and Annual Determinations

CEPP provides a payment to LSEs for building or procuring clean electricity at the pace and scale necessary for an **80% clean nationwide average** by 2030. All LSEs start where they are and move forward at an equitable pace; those with lower levels of clean electricity are not expected to catch up to those that start with higher levels of clean electricity. By 2030, utilities starting with low amounts of clean electricity will end up much lower than 80% clean. For LSEs with extremely high levels of clean electricity, a smaller annual increase would qualify for the payment.

To determine the payment or penalty provided to an LSE, these entities must report the number of clean megawatt-hours (MWh) generated or procured in a given year and delivered to their customers, as a percentage of their overall demand load. A "clean" MWh



is defined as one produced from any new or existing source of electricity with zero or very low emissions. This includes wind, solar, and hydropower, as well as geothermal, nuclear, carbon capture, and other technologies as defined by their carbon-intensity. Each LSE must certify that no other entity is taking credit for the same MWh in their clean electricity determination. In restructured markets, grid operators may set up an accounting system for LSEs to certify that no other entity is taking credit for the same clean MWhs.

Performance Payments and Penalties

The payment formula provides a significant federal investment to help cover the incremental costs of accelerating the clean energy transition, and sufficient marginal incentive to encourage LSEs to achieve a historic level of growth in clean energy deployment for the next 10 years. LSEs that do not achieve a sufficient annual increase in clean electricity as a percentage of their overall portfolio must pay a penalty based on their shortfall, the difference between the clean electricity threshold for the year and the amount that the LSE achieved. The penalties are necessary to ensure that 1) the performance payments function as intended, 2) taxpayer dollars are used wisely, and 3) the sector does not engage in fraudulent activity to take advantage of federal dollars. The program outcome is that most utilities will decide to achieve the clean electricity growth to receive payments and avoid penalties.

Program Budget

Transitioning the power sector from a national average of 40% clean electricity to 80% by 2030 could involve an approximate $550 billion marginal capital investment, according to a number of models of power sector decarbonization. In a traditional CES, this marginal investment could fall on the shoulders of ratepayers. In contrast, CEPP would provide federal investment to drive the transition to 80% clean electricity, protecting ratepayers from bearing the cost of this essential transformation. Congress should provide the CEPP with $150-$180 billion in funding, and should simultaneously invest in long-term extensions of critical related clean energy tax incentives. This power sector investment will come with benefits that dwarf the costs. A Harvard/RFF study estimates that **an 80%-by-2030 CES would provide $1.8 trillion in climate and public health benefits**, more than six times the expected cost, avoiding more than 300,000 premature deaths.

Terms & Conditions on Performance Payments
LSEs must use their clean electricity performance payments for specified purposes. We propose the following: reducing customer bills; supporting clean electricity, including distributed generation and community solar; paying off debt on fossil assets; investing in distribution, transmission or storage; supporting energy efficiency programs; and/or worker paycheck protection.

Energy Efficiency under a CEPP
Increasing energy efficiency is critical in achieving 100% clean electricity—reducing pollution and consumer costs and holding down electricity demand growth while clean energy generation replaces polluting resources. A CEPP would promote energy efficiency in two important ways: first, by implicitly incentivizing LSEs to reduce their overall load via energy efficiency measures, thus shrinking the denominator against which their numerator (the relative amount of clean power generation) must make steep, continuous progress; and second, by explicitly incentivizing energy efficiency through the eligibility of LSEs to use of clean electricity performance payments for energy efficiency programs.

Although some advocates have been hopeful that a Energy Efficiency Resource Standard (EERS) could be combined with a CES into one federal standard that promotes both efficiency and clean resources (similar to a combined Renewable Energy & Energy Efficiency Standard in the 2009 "Waxman-Markey" climate legislation), we believe that the legislative constraints placed by the Byrd rule would jeopardize the passage of both. And, more importantly, that tying the two policies together into one standard would undermine the push for utilities to reach 80% then eventually 100% carbon-free power: Every "clean" MWh credit provided for energy efficiency is one that a utility does not need to generate in shifting from polluting to clean resources. Evergreen also supports an EERS that "requires utilities to achieve all cost-effective energy efficiency measures." But as a separate policy and one that would require deeper legislative development for inclusion in a budget reconciliation bill.

Nonetheless, energy efficiency is a critical part of this federal policy agenda—especially as we electrify more of our homes, cars and industries. There are a number of important complementary investments that Congress is poised to make in 2021 to promote greater energy efficiency and electrification, as part of a broader agenda driving at 100% clean electricity and economy-wide carbon pollution reductions.

Part 3. Additional Federal Investments Needed for 100% Clean Power

There are a number of complementary power sector investments that are necessary for a just, equitable and effective path to 100% clean electricity. These must be simultaneously advanced in reconciliation legislation, alonside a CEPP.

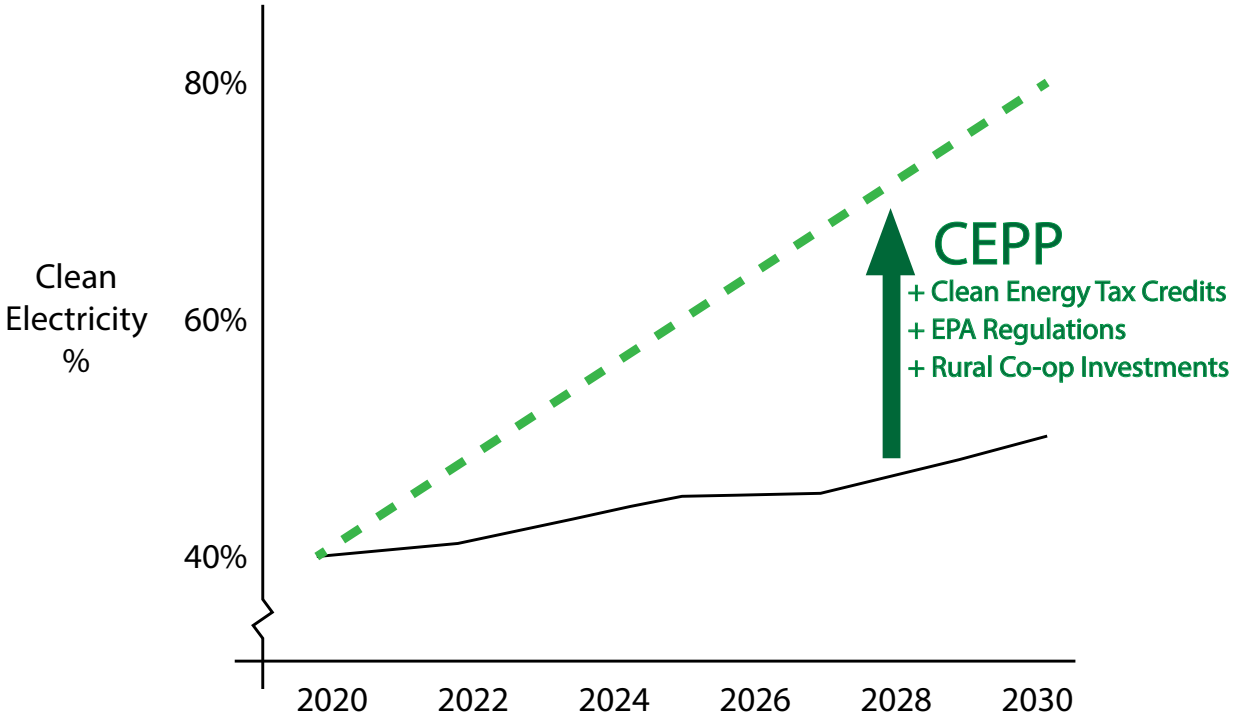
3.1 Clean Electricity Tax Incentives

Working in concert with a CEPP to drive the U.S. toward 80% clean power by 2030, clean electricity tax credits will ensure renewable energy remains a lowest-cost resource, and will incentivize deployment of other technologies necessary for this clean energy transformation. Congress must secure ten-year extensions of federal clean electricity investment and production tax credits (ITC and PTC), turned into a direct pay mechanism to allow more entities to participate in the program and reduce transaction costs—making federal dollars go further. Tax credits should be extended to additional technologies like energy storage and transmission, restored to their full original value, updated with optionality between the ITC and PTC, tied together with labor standards, and expanded for projects in disadvantaged communities. The latter key reforms were proposed in the February 2021 version of this report, and have been realized in the *Clean Energy for America Act* in the U.S. Senate.

These incentives, for clean generation, transmission and storage, are part of a larger agenda of full scale clean energy tax credits that Congress must secure in budget reconciliation legislation. These extend beyond the power sector, to include also the Electric Vehicle (EV) Tax Credit, made more accessible as a refundable credit or point-of-sale rebate, and expanded for vehicles made in America with union labor (as called for by Evergreen and Data for Progress in their 2020 Clean Jumpstart report and advanced in the *Clean Energy for America Act*); reauthorization of the 48(C) Advanced Energy Manufacturing Tax Credit and creation of an Advanced Solar Manufacturing Tax Credit; extension of the 45(Q) Carbon Capture Tax Credit, reformed to disallow its use for additional fossil fuel extraction and targeted for hard-to-decarbonize industrial sectors like steel and cement; among a number of other tax incentives for clean and emerging technologies.

The figure below illustrates the importance of both the CEPP, for LSEs, and clean electricity tax credits, targeted for generators. Both are necessary, and complementary, for getting to 80% clean power by 2030.

Figure 5: Tax Credits and CEPP Achieve 80% by 2030



3.2 Investments to Secure Greater Environmental Justice & Equitable Economic Opportunity

To build a more equitable and inclusive clean energy economy, Congress must fund efforts to **reduce pollution in environmental justice and overburdened communities**. These funds should be joined by a directive to the EPA, under existing authority, to expand air pollution monitoring, regulation, and enforcement to help address environmental racism and disproportionate pollution burdens in low-income communities and communities of color. These funds should enable the EPA to develop reporting requirements for *all* generation facilities over 1 megawatt (MW) that emit criteria air pollutants, hazardous air pollutants, and greenhouse gases. The EPA should verify, track and publish these emissions in a transparent and accessible format. Further, the EPA must update air pollution limitations and requirements for electricity generating facilities, including, but not limited to the New Source Performance Standards and the National Emission Standards for Hazardous Air Pollutants, as is required at least every 8 years.

To identify heavily polluted areas that should be prioritized in this work, funding should be directed to the Council on Environmental Quality (CEQ) to undertake **Equity Mapping**—collecting data on disproportionate negative environmental burdens and cumulative impacts of pollution, and other socioeconomic indicators. Special attention and funds must also be directed to the civil and criminal enforcement of new and existing regulatory requirements in low-income communities and communities of color, via both the EPA and the Department of Justice (DOJ). Resources should be provided to the EPA Office of Enforcement and Compliance Assurance, and to state grants and tribal grants. To prevent and control air pollution in overburdened communities, the EPA should increase the budget for grants to state and local air quality

agencies, enabling them to properly meet their responsibilities to the communities they serve. Targeted investments of this kind will provide public health and economic benefits from reduced pollution, and ensure overburdened communities do not get left behind in the clean energy transition.

The creation of a **Clean Energy Technology Accelerator**, aka Green Bank, in reconciliation is another vital source of low-cost financing for clean energy infrastructure projects in market segments in which the private sector is underinvesting— particularly disadvantaged communities. The accelerator—for which Evergreen has fought since its inception—could invest directly in job-creating projects throughout the country. It could also work with state and local green banks, clean energy funds, infrastructure finance authorities, and Community Development Financial Institutions (CDFIs), to leverage aggressive state and local leadership to deploy green projects and create jobs building pollution-free communities. Notably, the accelerator proposed in Congress would target at least 40% of its investment benefits into disadvantaged communities—contributing towards President Biden's Justice40 Initiative and the creation of a more just, equitable and inclusive American clean energy economy.

Congress should expand on the American Jobs Plan proposal for **State and Local Clean Energy Challenge Grants**, focusing on deploying distributed energy resources. State block grants should target clean electricity technologies, with a particular focus on existing publicly-owned and low-income residential housing including, but not limited to, the development of opportunities to participate in community solar. State block grants must assist with the development of: 1) resiliency and microgrid development in low-income, persistent poverty, and tribal communities; 2) community solar installations that enroll a majority of low and moderate income households; and 3) contract insurance for low and moderate income household community solar contracts. This effort would support energy justice, equitable economic growth, and resilience through distributed generation.

To achieve President Biden's goal of weatherizing at least two million homes during his first term in office and to **reduce energy costs and energy burden** for at least two million American households, Congress should increase funding to the Department of Health and Human Services's (HHS) Low-Income Home Energy Assistance Program (LIHEAP) and the DOE's Weatherization Assistance Program (WAP). Analysis shows additional funding is necessary to ensure the program can adequately support low-income households. LIHEAP funding should be administered in FY 2022 to provide immediate relief. WAP funding should be administered over the next 5-years to avoid a "boom-bust" cycle the industry witnessed during the American Recovery and Reinvestment Act. This funding will help American households pay off utility debt accumulated during the COVID-19 pandemic, and have the added benefit of improving the resiliency of households throughout the country to extreme weather conditions. Already the bipartisan *Infrastructure Investment & Jobs Act* included an initial down payment in WAP of over $3 billion.

3.3 Investments in Energy Workers & Communities

Alongside investments that will facilitate job creation in the deployment of carbon-free technologies, federal lawmakers must make additional investments that support fossil fuel workers and communities in a truly just transition into an inclusive new clean energy economy. Federal policy must ensure that fossil fuel communities and their workers are full participants in this new economic future. In his January 2021 executive order on "Tackling the Climate Crisis at Home and

Abroad," President Biden created a new Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization to "coordinate the identification and delivery of federal resources to revitalize the economies of coal, oil and gas, and power plant communities." Congress should follow on this initial groundwork by funding new programs that provide **paycheck protection** for impacted workers in the electricity sector, along with additional investments in workforce training and dislocation, as well as health care and educational benefits.

New clean energy manufacturing and deployment investments should also be prioritized for workers and communities currently involved in fossil fuel production and power generation. For example, Senators Joe Manchin (D-WV) and Debbie Stabenow (D-MI) have proposed a reauthorization of the federal Section 48(C) Advanced Energy Manufacturing Tax Credit that would award half of that program's total funding allocation to census tracts in which, or adjacent to which, a coal mine or power plant has recently closed. This targeted economic development incentive provides a potent policy model for linking new investment to historically fossil fuel-dependent communities and more systematically facilitating their economic diversification and role in the new energy economy. The "Manchin framework" for 48(C) can also be applied to other federal investments, as the initial version of this report pointed out. For example, this could include a bonus tax credit added to projects receiving federal clean electricity production and investment tax credits.

Federal clean energy investments can serve as an engine of urgently needed reinvestment in states, workers and communities that are currently dependent upon fossil fuels.
Funding should also be provided by Congress to support good work restoring lands degraded by fossil fuel extraction and processing. Here the *Infrastructure Investment & Jobs Act* makes a down payment with investments in cleanup of abandoned mine lands and orphaned oil and gas wells.

3.4 Investments in Next-Generation Rural Electrification & Economic Development

Congress should also allocate funding for **forgivable hardship loans for rural electric cooperatives (co-ops)** in exchange for retiring existing polluting assets and reinvesting in clean energy, energy efficiency, and electrification programs. This funding will help co-ops retire expensive, outdated, often heavily-polluting power plants, deploy new clean energy, and address their significant debt burden. This in turn will result in new jobs, greater economic opportunities, and lower energy burden in rural areas. This is part of a broader agenda that President Biden has championed for rural America—including through budget reconciliation as well as in the *Infrastructure Investment & Jobs Act*, which contained investments in things like expanding rural broadband access.

The Hardship Loan Program in the U.S. Department of Agriculture's (USDA) Rural Utilities Service (RUS) is a ready-made instrument for retirement and reinvestment that could serve electric cooperatives. Rural electric cooperatives rely on fossil fuels for the majority of the power that they deliver to more than 40 million people, and a majority of these cooperatives are federally financed. However, there are as yet no terms for forgiveness for federally insured RUS Hardship Loans akin to those that have made the Small Business Administration's (SBA) federally-insured loan program, which has been such an important vector for nearly $1 trillion in COVID-related stimulus funds in 2020.

Co-ops are uniquely vulnerable to stranded assets as they have long-dated debt for assets that must be retired and replaced before 2035. Further, as customer-owned organizations, they prioritize ratepayer protection extremely highly as a matter of public mission. According to analysis conducted by the Center for American Progress (CAP), retirement of the polluting power plants for which rural co-ops owe $7 billion in outstanding federal loans from the Rural Utilities Service could alone reduce as much as 44 million metric tons of carbon pollution.

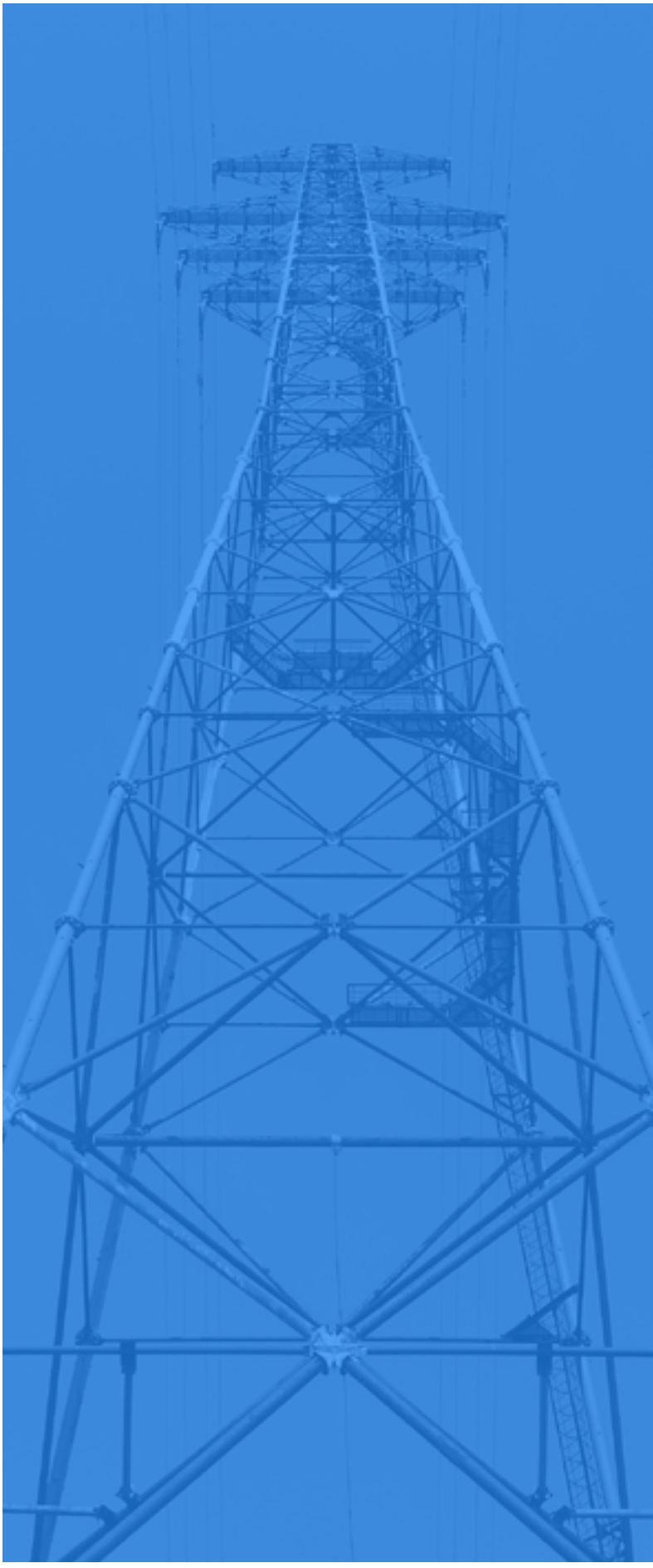
Furthermore, the Tennessee Valley Authority (TVA) is a federal agency that sells power into parts of six states, and more than 40% of its supply is currently polluting sources. It is financially constrained by a congressionally imposed $30 billion debt limit. In part because of its financial constraints, TVA has a plan to only achieve a five percent reduction in greenhouse pollution in the next decade. This requires greater ambition. Rather, by retiring federally-insured loans on the condition of reinvestment in fossil free energy solutions, the RUS borrowers as well as TVA would be able to redirect their debt payments towards a combination of bill relief and clean energy development, placing TVA and its ratepayers at the vanguard of the clean energy revolution. Further, as the Biden Administration and the Congress look to drive new job-creating and stimulative investments into community based projects that advance economic and environmental justice, the model of the TVA and RUS can serve as a useful framework for further regionally-based clean energy economic development initiatives.

3.5 Funding for Transmission

In addition, there are further federal investments that should be made in transmission. Some of these investments build upon those advancing in separate legislation. Critically, the aforementioned Transmission Investment Tax Credit (ITC) is necessary to ensure renewable energy supplies are able to meet growing clean electricity demand. Like the solar energy ITC before it, a transmission ITC would make a couple dozen major projects around the country move forward by reducing the cost of the lines to wholesale power customers.

To address the significant interconnection backlog for renewable energy projects across the country and enable the grid to reliably manage 80% clean power by 2030, additional funds should be directed to the DOE to **support transmission expansion**, including anchor tenant programs and partnerships with Power Marketing Authorities (PMAs). While the recent *Infrastructure Investment & Jobs Act* does provide more ability for the federal government to facilitate and permit large interstate transmission lines connecting clean energy resources with population centers, only $2.5 billion has been allocated for a loan program enabling the federal government to serve as the anchor tenant on large regionally significant lines. That level of financial support is insignificant relative to the total level of investment that is needed for transmission to decarbonize the power sector. In fact, $2.5 billion would successfully fund only a fraction of the approximately two dozen transmission projects identified as "ready to go."

With 150,000-200,000 GW-miles of transmission likely necessary for power sector decarbonization, a transmission ITC is critically necessary. Currently, the power sector does not have a functioning way to recover costs of large interstate-highway-type transmission lines. Including a tax credit for regionally significant lines in the reconciliation bill would make a big difference and could increase access to renewable resources so much so that renewable energy output in the country could increase by 50% as soon as those lines become operational. These investments in transmission are key to unlocking power sector decarbonization and the path to 80% clean power by 2030 and 100% carbon-free electricity by 2035.



Conclusion

This year President Biden and Congress have the opportunity—the best opportunity in over a decade—to take transformative action to confront the climate crisis and to invest in building a just, thriving and equitable clean energy economy. Putting the country on a path to 100% clean electricity by 2035 is critical to realizing this opportunity—a clean electric grid could itself reduce US greenhouse pollution by a quarter, and that clean electricity can also then be used to reduce pollution throughout other key sectors like transportation, buildings, and industry. To achieve this, Congress must pass budget reconciliation legislation that creates a Clean Electricity Payment Program (CEPP) that mimics a Clean Electricity Standard (CES) to reach 80% clean electricity nation-wide by 2030. And the CEPP must be accompanied by complementary investments in clean energy and transmission deployment, environmental justice, rural economic development, as well as funding to energy workers and communities. This is our moment to build a clean energy future—starting with 100% clean electricity.