

**Testimony before the  
BICAMERAL TASK FORCE ON CLIMATE CHANGE**

Hearing on  
“The Civilian Climate Corps”

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Thank you, Senator Markey, members of the Climate Change Task Force, and other members of Congress for the opportunity to speak with you today. My name is Mark Paul. I am an Assistant Professor of Economics and Environmental Studies at New College of Florida and a Fellow at the University of Southern California’s Berggruen Institute, where I research the economic and distributional impacts of decarbonization pathways. Part of my work focuses on the design and evaluation of direct employment programs. As an economist, I hope to provide some perspective on the economic, climate, and social benefits associated with the creation of a new Civilian Climate Corps.<sup>1</sup>

Right now, the nation is facing multiple interconnected crises: a climate crisis that is already destabilizing the environment and on pace to warm the planet by 1.5°C by as early as 2030;<sup>2</sup> an inequality crisis, driven in part by sustained high levels of unemployment and underemployment since at least 2008, that fuels poverty and threatens the very social fabric of the country; and most recently the global pandemic, which threw tens of millions of Americans out of work and claimed far too many lives.

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<sup>1</sup> I would like to thank Leila Lorenzo and Dr. Yakov Feygin of the Berggruen Institute for their wonderful research assistance.

<sup>2</sup> Nina Chestney and Chung Jane, “Temperatures to Rise 1.5 Degrees Celsius by 2030-2052 Without Rapid Steps - U.N. Report,” *Reuters*, October 8, 2018, <https://www.reuters.com/article/climatechange-ipcc-idUSL8N1WM0JJ>.

While the public health crisis is winding down in the U.S., and the economy is beginning to heal from the recession, the labor market is still down an estimated 10.7 million jobs from where it should be.<sup>3</sup> Youth unemployment (16–24), especially when accounting for reductions in the youth labor force participation rate, remains in the double digits.<sup>4</sup> Unemployment for Black workers is 9.1 percent—nearly twice the rate for white workers. Forty-one percent of unemployed workers are classified as long-term unemployed, meaning they have been out of work for at least half a year.<sup>5</sup> And the structural crises of global heating and inequality have continued to intensify.

I come here today to discuss the positive role a Civilian Climate Corps could play in combating these interconnected challenges. The idea for a Civilian Climate Corps is not new; rather, the program has its origins in the Civilian Conservation Corps (CCC), a program created by President Franklin D. Roosevelt in 1933 at the height of the Great Depression and Dust Bowl. Much like the COVID-19 pandemic economy, the Depression worsened inequality and resulted in turmoil in employment markets where whole workforce segments—especially young workers from rural areas and underrepresented groups—were subject to long-term unemployment.<sup>6</sup> To put these millions of unemployed Americans back to work, President Roosevelt created a number of direct employment programs, including the CCC. The goal was to provide meaningful

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<sup>3</sup> “May Jobs Report Is a Promising Sign That the Recovery Is on Track: Initial Comments from EPI Economists,” *Economic Policy Institute*, accessed June 21, 2021, <https://www.epi.org/blog/may-jobs-report-is-a-promising-sign-that-the-recovery-is-on-track-initial-comments-from-epi-economists/>.

<sup>4</sup> Headline youth unemployment is currently 9.9 percent; however, this measure does not account for the sizable drop in the employment-to-population ratio for this group. U.S. Bureau of Labor Statistics, Unemployment Rate - 16-24 Yrs. [LNS14024887], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/LNS14024887>, June 20, 2021.

<sup>5</sup> U.S. Bureau of Labor Statistics, Unemployment Rate - Black or African American [LNS14000006], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/LNS14000006>, June 20, 2021; U.S. Bureau of Labor Statistics, Of Total Unemployed, Percent Unemployed 27 Weeks & Over [LNS13025703], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/LNS13025703>, June 21, 2021.

<sup>6</sup> Gabriel Mathy, “Hysteresis and Persistent Long-Term Unemployment: Lessons from the Great Depression and World War 2,” SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, March 6, 2015); Michael A. Bernstein, *The Great Depression: Delayed Recovery and Economic Change in America, 1929–1939*, Studies in Economic History and Policy: USA in the Twentieth Century (Cambridge: Cambridge University Press, 1987).

and remunerative employment while working to “conserve our precious natural resources.” In other words, to invest in the American people and environment.

Within just two months of the program’s creation, the CCC put 250,000 hungry youth to work planting trees, constructing trails and buildings across the country’s parks system, occupying fire towers, managing soils, building dams, and engaging in numerous other vital environmental tasks. In time the program would be increased to serve 500,000 workers at a time (though on average it employed roughly 300,000 people per year). Over the CCC’s nine year existence, its workers planted over two billion trees; improved soil quality and slowed erosion on forty million acres of farmland; assisted in the construction of eight hundred new state parks; constructed over ten thousand reservoirs, nearly fifty thousand bridges, and over ten thousand miles of hiking trails; and much, much more. Reflecting back on the work of the CCC, the program’s Director, Robert Fechner, noted in his 1939 annual report that Corps members had “constructively altered the landscape of the United States.” In all, the program helped transform near 120,000,000 acres.<sup>7</sup>

Beyond revitalizing the built environment, the CCC was a successful social program with long-term beneficial effects on its participants. First, the program provided economic opportunities for American youth, employing three million people over the course of the program’s existence. Workers not only earned income and were able to send money back to their struggling families, but their future earning prospects improved as well: One study of Latino and Native American enlistees in the American Southwest found Corps members experienced an increase in lifetime earnings of 4.6% compared to their peers.<sup>8</sup>

The CCC also integrated social services, among them nutritional, health, hygiene, and educational services, which led to dramatic life cycle improvements for its participants.<sup>9</sup> Workers

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<sup>7</sup> Neil M. Maher, *Nature’s New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement* (Oxford ; Oxford University Press, 2008); Michael Sherraden PhD, “Administrative Lessons from the Civilian Conservation Corps (1933-1942),” *Administration in Social Work* 9, no. 2 (May 1, 1985): 85–97.

<sup>8</sup> Eli, Lleras-Muney, and Lee, “Do Youth Employment Programs Work? Evidence from the New Deal,”

<sup>9</sup> Neil M. Maher, *Nature’s New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement* (Oxford ; Oxford University Press, 2008); Michael Sherraden PhD, “Administrative Lessons from the Civilian Conservation Corps (1933-1942),” *Administration in Social Work* 9, no. 2 (May 1, 1985): 85–97.

for the CCC, for example, gained half an inch in height and 8–14 pounds on average compared to their peers.<sup>10</sup>

While Roosevelt was proven right in his prediction that the CCC would “pay dividends to the present and future generations,” the program has a complicated—and at times troubling—legacy. The CCC largely excluded women and segregated its work camps. Frustrated by the CCC’s exclusion of women, First Lady Eleanor Roosevelt and Frances Perkins, the Secretary of Labor, created “She-She-She” camps for unemployed girls—but only 8,500 young women were able to participate. We can and will do better. But these failings should not detract from what the history of the CCC and other direct employment programs proves: that the government can employ large swaths of people in meaningful and remunerative work to address environmental needs—and fast.

***There is substantial economic and environmental need for the program***

Today there is substantial economic and environmental need for a *new* CCC: the Civilian Climate Corps. The daunting nature of the climate crisis and the intensification of extreme weather events, including the record-setting heat and droughts currently being experienced in the United States, can cause people to feel helpless. In 2018, extreme weather events resulted in the destruction of more than 1.5% of GDP, essentially eliminating more than 60% of the economic growth that year.<sup>11</sup> These events demonstrate a clear and present need for investments in climate resilience and reductions in fossil-fuel use. It is in these areas that a reimagined CCC would prove beneficial. Specifically, I believe a new CCC would stimulate the economy, provide dignified work and long-term career opportunities for unemployed and underemployed people, and provide vital labor to engage in essential mitigation and adaptation work.

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<sup>10</sup> John A. Salmond, “Chapter 7,” in *The Civilian Conservation Corps, 1933-1942: a New Deal Case Study* (Duke University Press, 1967), [https://www.nps.gov/parkhistory/online\\_books/ccc/salmond/chap13.htm](https://www.nps.gov/parkhistory/online_books/ccc/salmond/chap13.htm).

<sup>11</sup> <https://www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context>

There is no shortage of work to be done. Rewiring America estimates that 15–20 million new jobs associated with decarbonization will be created in the next decade alone.<sup>12</sup> Most of these jobs will be created from the major investments necessary to put the country on a sustainable path. After all, failing to limit global warming to 1.5–2°C above pre-industrial levels—as promised under the Paris Agreement—would mean unprecedented economic and human disasters, disruptions far more severe than the COVID-19 Pandemic or Great Financial Crisis. The U.S. Global Change Research Program estimates that climate change, if unabated, will permanently reduce U.S. GDP by 10 percent—a number I believe to be conservative.<sup>13</sup> Economic losses will result from harm to physical assets, reduced worker and agricultural productivity, rising morbidity and mortality, and an increasingly unstable world.<sup>14</sup> This is why Treasury Secretary Yellen calls climate change “an existential threat” and the biggest emerging risk to the U.S. financial system.<sup>15</sup>

These dangerous outcomes can be averted if green investments are undertaken at adequate scale and speed. To date, action on the climate front has been stunted by a set of misguided economic assumptions that effectively rule out vigorous action by the public sector to respond to the climate crisis. This framing is wrong. Contrary to traditional economic theory, responding to the climate crisis, including the associated investments, represents an opportunity more than a cost for the American people. This is because the economy is chronically operating below its maximum productivity potential. At nearly all times in this country, there are idle resources—workers, factories, capital—that a major public investment program could mobilize. Green investments, often wrongly portrayed as at odds with growth, are actually some of the most potent economic policies Congress can consider. International Monetary Fund economists estimate green spending yields broader economic benefits that are two to seven times larger than those associated with non-eco-friendly spending.<sup>16</sup>

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<sup>12</sup> <https://www.rewiringamerica.org/jobs-report>

<sup>13</sup> 2018 (GWC report)

<sup>14</sup> Hsaing 2017; Paul et al. 2019.

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<sup>16</sup> Batini, Nicoletta, Mario Di Serio, Matteo Fragetta, Giovanni Melina, and Anthony Waldron. 2021. “Building Back Better: How Big Are Green Spending Multipliers?” *IMF Working Paper WP/21/87*. March.

Direct employment programs like the CCC are particularly necessary and beneficial when the economy fails to reach *true* full employment, when everyone who wants a job can find one. While headline unemployment dipped to 3.5 percent prior to the pandemic, tepid wage growth and a still depressed employment-to-population ratio suggested that the labor market had significantly more room to tighten. Over the past year and a half, it goes without saying, the labor market has been disrupted considerably. While the recovery is underway, a return to a pre-pandemic labor market is not sufficient to provide full employment and strong wage growth, especially for workers of color, young workers, and workers that are classified as long-term unemployed or who have fallen out of the labor market entirely. For instance, young workers had an unemployment rate of roughly 8 percent prior to the pandemic, a rate more than twice as high as the general population.<sup>17</sup> Further, young workers that are employed, especially those without a college degree, are concentrated in low-income work with limited upward mobility.<sup>18</sup>

### ***A Civilian Climate Corps would generate immense and enduring benefits***

A new CCC has the potential to generate millions of new well-paying jobs across the United States economy. An estimated 15–23 jobs would be created per million in spending on the CCC, with the exact number of jobs depending on the types of employment undertaken by the program. I estimate that a \$100 billion investment in the CCC would yield an average of 1.9 million jobs, including indirect and induced jobs.<sup>19</sup>

These employment opportunities are essential to improve the long-run economic health of unemployed and underemployed workers. Economic research has documented sizable and long-lasting scarring associated with bouts of unemployment, especially for those who graduate into an economic recession. Entering the labor market during a recession is associated with a 9 percent decline in annual earnings, a reduction which can last decades and is permanent in some instances. These declines are concentrated among less advantaged groups, including Black and

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<sup>17</sup> <https://fred.stlouisfed.org/series/LNS14024887>

<sup>18</sup> Martha Ross and Nicole Bateman, “Meet the Low-Wage Workforce” (Brookings Institute, November 2019) <https://www.brookings.edu/research/meet-the-low-wage-workforce/>, accessed June 21, 2021.

<sup>19</sup> Robert Pollin and Shouvik Chakraborty, “Job Creation Estimates Through Proposed Economic Stimulus Measures” Political Economy Research Institute (PERI) Working Paper, Amherst, Mass, April 21, 2010. <https://www.peri.umass.edu/component/k2/item/1297-job-creation-estimates-through-proposed-economic-stimulus-measures>, accessed June 21, 2021. The upper end includes direct, indirect, and induced jobs. Jobs are for “job years.”

brown workers and youth. Opportunities offered through the CCC can provide immediate employment, which is associated with increased lifetime earnings, well-being, and life-expectancy.<sup>20</sup> For example, on average, male job loss during slack labor markets is associated with 2.8 years in lost earnings. Avoiding this income shock may prevent an income loss of roughly \$100,000 for individuals that are employed rather than placed into the unemployment queue.<sup>21</sup>

And the economic benefits of the CCC would reach well beyond program participants. The economy never recovered from the Great Financial Crisis due to insufficient fiscal policy. As a result, the U.S. economy lost an estimated \$8.2 trillion in GDP over the ten-year period between 2010 and 2019. This amounts to \$32,317 in lost income per adult—for the median household with two adults, an amount roughly equivalent to losing one year’s income. A jobless recovery can be avoided through expansionary fiscal policy. The CCC is poised to provide substantial benefits given the labor-intensive work and persistent levels of unemployment and underemployment among target populations. Further, expenditures on programs such as the CCC can effectively pay for themselves by generating higher economic growth, lower energy costs, and avoided costs associated with the climate crisis.<sup>22</sup>

Economic benefits are enhanced when direct job creation provides good quality employment opportunities. Health care, education benefits, and access to childcare will ensure CCC jobs are good jobs. Prior to the pandemic, 53 million Americans worked for low wages, receiving a median hourly wage of just \$10.22. Student debt levels continue to rise, suppressing economy-wide purchasing power and limiting employment options. And health care remains unaffordable for tens of millions of Americans. By paying a living wage coupled with health care benefits,

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<sup>20</sup> Philip Oreopoulos, Till von Wachter, and Andrew Heisz, “The Short- and Long-Term Career Effects of Graduating in a Recession,” *American Economic Journal: Applied Economics* 4, no. 1 (January 2012): 1–29; Jesse Rothstein, “The Lost Generation? Labor Market Outcomes for Post Great Recession Entrants,” Working Paper, Working Paper Series (National Bureau of Economic Research, July 2020); Angus Deaton and Anna Case, *Deaths of Despair and the Future of Capitalism* (Princeton, N. J: Princeton University Press, 2020).

<sup>21</sup> Steven J. Davis and Till Von Wachter. 2011. “Recessions and the Cost of Job Loss.” *Brookings Papers on Economic Activity*. Fall, pp. 1-72.

<sup>22</sup> Adam S. Hersh and Mark Paul, “Room to Run: America has ample fiscal space—and should use it to tackle pressing economic and climate challenges” (Groundwork Collaborative, April 2021), <https://groundworkcollaborative.org/resource/room-to-run/>, accessed June 21, 2021; DeLong, J. Bradford and Lawrence H. Summers. 2012. “Fiscal Policy in a depressed economy.” *Brookings Papers on Economic Activity*.

education grants, and access to childcare, the CCC will ensure youth have access to high-quality employment. These benefits will not only support Corps members through reduced debt burdens and increased lifetime earnings, but can stimulate aggregate demand and improve childhood outcomes for dependents.<sup>23</sup>

Beyond these direct economic benefits, work conducted by Corps members will measurably reduce greenhouse gas (GHG) emissions. This will yield environmental and health benefits. The degree to which emissions and pollution are reduced will depend on the scale of the program and the type of work conducted by Corps members. Some of the largest emissions reductions can occur through the retrofit of buildings—with prioritization of public housing, low-income housing, and Title 1 schools—and renewable energy installation.<sup>24</sup> For example, retrofitting the US public housing stock alone would reduce emissions by roughly 5.6 million metric tons, the equivalent of taking over 1.2 million cars off the road.<sup>25</sup>

To achieve sizable economic and environmental benefits from the CCC, the program must be scaled appropriately. For comparison’s sake, the CCC of the Thirties employed an average of 300,000 people per year. Accounting for the growth in the US population, that would equate to roughly 750,000 Corps members per year today. Given the chronic slack in labor markets, the persistence of underemployment, and the dire need to put people to work retrofitting buildings, installing renewable energy, managing forests, and engaging in other meaningful climate mitigation and adaptation work as soon as possible, I believe a large program is warranted.

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<sup>23</sup> Martha Ross and Nicole Bateman, “Meet the Low-Wage Workforce” (Brookings Institute, November 2019) <https://www.brookings.edu/research/meet-the-low-wage-workforce/>, accessed June 21, 2021; Marco Di Maggio, Ankit Kalda, and Vincent Yao, “Second Chance: Life without Student Debt,” SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, March 2, 2020); Scott Fullwiler, Stephenie A. Kelton, Catherine Ruetschlin, and Marshall Steinbaum, “The Macroeconomic Effects of Student Debt Cancellation” (Levy Economics Institute of Bard College, February 2018) <http://www.levyinstitute.org/publications/the-macroeconomic-effects-of-student-debt-cancellation>, accessed June 21, 2021.

<sup>24</sup> Buildings currently account for more than 30% of global energy-related GHG emissions. The International Energy Agency estimates that investments in building retrofits would generate upwards of 30 jobs per million in investment; “Sustainable Recovery” (International Energy Agency, July 2020), <https://www.iea.org/reports/sustainable-recovery/buildings>, accessed June 21, 2021.

<sup>25</sup> Daniel Aldana Cohen et al., “A Green New Deal for American Public Housing Communities” (Data for Progress, Socio-Spatial Climate Collaborative, and McHarg Center for Urbanism and Ecology at the University of Pennsylvania), <https://www.filesforprogress.org/reports/green-new-deal-public-housing-national.pdf>, accessed June 21, 2021.



### *There is widespread support for a Civilian Climate Corps*

Finally, I would like to touch on public support for a Civilian Climate Corps. Over the past decade, there has been a dramatic shift in public opinion around climate change and the energy transition, with an increasingly large share of the electorate supporting government action.<sup>26</sup> Direct employment programs, such as the CCC, enjoy some of the strongest support from the electorate. A poll from January found 93 percent of likely voters support the government creating jobs directly to address national and community needs, including 87 percent of Republicans.<sup>27</sup> When asked specifically about the CCC, polls find that 65–85 percent of likely voters support a new CCC, including a majority of Republicans.<sup>28</sup> Support from youth is particularly robust, with likely voters 18–29 supporting the CCC by an overwhelming 50-point margin.<sup>29</sup> Support like this is hard to come by in the era of polarization, especially on environmental issues.

### *Conclusion*

The great challenge of the 21st century is climate change. But this challenge is also an opportunity. It is the spur we may need to unleash our collective efforts to build a just and equitable society—one more focused on human flourishing and less on private profit. A new Civilian Climate Corps that offers a living wage, benefits, and career opportunities to its members can help set us on that path. The youth want to work. They want to contribute to

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<sup>26</sup> Cary Funk and Brian Kennedy, “How Americans See Climate Change and the Environment in 7 Charts,” Pew Research Center (Pew Research Center, April 21, 2020), <https://www.pewresearch.org/fact-tank/2020/04/21/how-americans-see-climate-change-and-the-environment-in-7-charts/>, accessed June 21, 2021; Ethan Winter et al., “In 2020, Climate Is a Winning Issue for Democrats” (Data for Progress), <https://www.filesforprogress.org/memos/climate-change-winning-issue-2020.pdf>, accessed June 21, 2021.

<sup>27</sup> Carnegie Corporation of New York and Gallup, Inc., “Back to Work: Listening to Americans” (Gallup, Inc, 2021), <https://www.gallup.com/analytics/329573/back-to-work-listening-to-americans.aspx>, accessed June 21, 2021.

<sup>28</sup> Data For Progress and The Justice Collaborative Institute, “Voters Support Reviving the Federal Civilian Conservation Corps Jobs Program,” accessed June 21, 2021; Yale Climate Communications, “Politics & Global Warming, December 2020,” [https://30glxtj0jh81xn8rx26pr5af-wpengine.netdna-ssl.com/wp-content/uploads/2020/12/Polling-Memo\\_-\\_Reviving-and-Expanding-the-Civilian-Conservation-Corps-2.pdf](https://30glxtj0jh81xn8rx26pr5af-wpengine.netdna-ssl.com/wp-content/uploads/2020/12/Polling-Memo_-_Reviving-and-Expanding-the-Civilian-Conservation-Corps-2.pdf)., accessed June 21, 2021.

<sup>29</sup> “Senator Markey and Rep. Ocasio-Cortez Introduce Civilian Climate Corps for Jobs and Justice to Rebuild America | U.S. Senator Ed Markey of Massachusetts,” accessed June 21, 2021, <https://www.markey.senate.gov/news/press-releases/senator-markey-and-rep-ocasio-cortez-introduce-civilian-climate-corps-for-jobs-and-justice-to-rebuild-america>.

averting the worst of the climate crisis. They want to leave this planet better off. We should not let this chance go to waste.

Thank you, and I look forward to your questions.