DATA FOR *PROGRESS*

Economic Impacts of the Green New Deal for Cities Act

By Matt Mazewski and Adewale Maye

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Introduction and Summary of Findings

The Inflation Reduction Act of 2022 constituted a major milestone in the federal government's response to the climate crisis, authorizing around $400 billion for a wide variety of programs to bolster domestic clean energy production, encourage adoption of zero-emission vehicles, promote energy efficiency, and otherwise reduce greenhouse gas emissions. In addition, the law leverages hundreds of billions more through tax credits and incentives, loan guarantees, and public-private or intergovernmental partnerships to advance these same objectives.

Yet despite the fact that the IRA represents the biggest climate-related investment in U.S. history, the scale of the environmental crisis and the threats that it poses to the health, safety, and livelihoods of American communities demand that policymakers go even further in taking action to transition from the use of fossil fuels and toward sustainable and renewable energy sources. As progressives look toward new policy proposals that can serve to rally popular support for even bolder climate action, one measure that deserves a fresh look is the Green New Deal for Cities Act.

In this memo, we employ the Data for Progress Jobs Model to provide projections of the impact that an updated Green New Deal for Cities Act would have on economic output and employment across the country. Assuming that a new iteration of the bill were introduced that featured the same funding authorizations and allocation mechanisms as the original House version from 2021 (H.R. 2644), and that its spending provisions were to take effect in Fiscal Year 2024, we estimate that a Green New Deal for Cities Act would be responsible for an average of around 1.9 million jobs created or preserved over the period 2024 to 2027, and would contribute around $1.2 trillion to U.S. GDP over the same.

Allocation of Funding in the Green New Deal for Cities Act

Although calls for a "Green New Deal" are not new by any means, in recent years they have attained greater prominence and have increasingly become a focal point for the environmental movement and climate justice organizers. In February 2019, Rep. Alexandria Ocasio-Cortez (D-NY-14) and Sen. Ed Markey (D-MA) introduced resolutions in both the House (H.Res.109) and Senate (S.Res.59) outlining plans for a "10-year national mobilization" that would achieve a swift transition to 100 percent clean energy, as well as usher in a new era of broadly shared prosperity. Two years later, they reintroduced their resolution alongside more than a dozen co-sponsors.[1]

The Green New Deal for Cities Act of 2021, introduced by Rep. Cori Bush (D-MO-01) and more than two dozen co-sponsors (including Ocasio-Cortez) in April of that year, would give real legislative teeth to the aspirational goals of the nonbinding GND resolutions. This expansive legislation is designed to enable communities from across the nation to combat the effects of climate change while also providing economic security for American workers and their families.

The bill would prioritize the needs of historically marginalized groups as well as communities that depend heavily on the fossil fuel economy, both of which stand to be especially severely impacted by climate change and to experience significant economic dislocations from decarbonization. It aims to create new jobs and support workers through the inclusion of prevailing wage and apprenticeship requirements as well as equitable and local hiring provisions.

The Green New Deal for Cities Act would authorize $1 trillion in appropriations to a dedicated fund over a four-year period, with the spending heavily frontloaded toward the earlier years. This would represent a level of support equivalent to that offered by the HEROES Act during an earlier phase of the pandemic. The bill would direct the Treasury to make payments to state, territorial, Tribal, county, and local governments from this fund "in the same manner as amounts appropriated" to the Coronavirus State and Local Fiscal Recovery Funds, which were created by the American Rescue Plan Act (ARPA) that was signed into law by President Biden on March 11, 2021.

In Table 1, we show how these funds would be spent over time if the authorizations were to begin in Fiscal Year 2024.

TABLE 1: AUTHORIZATIONS OF APPROPRIATIONS IN THE GREEN NEW DEAL FOR CITIES ACT (BILLIONS OF DOLLARS), 2024-2027

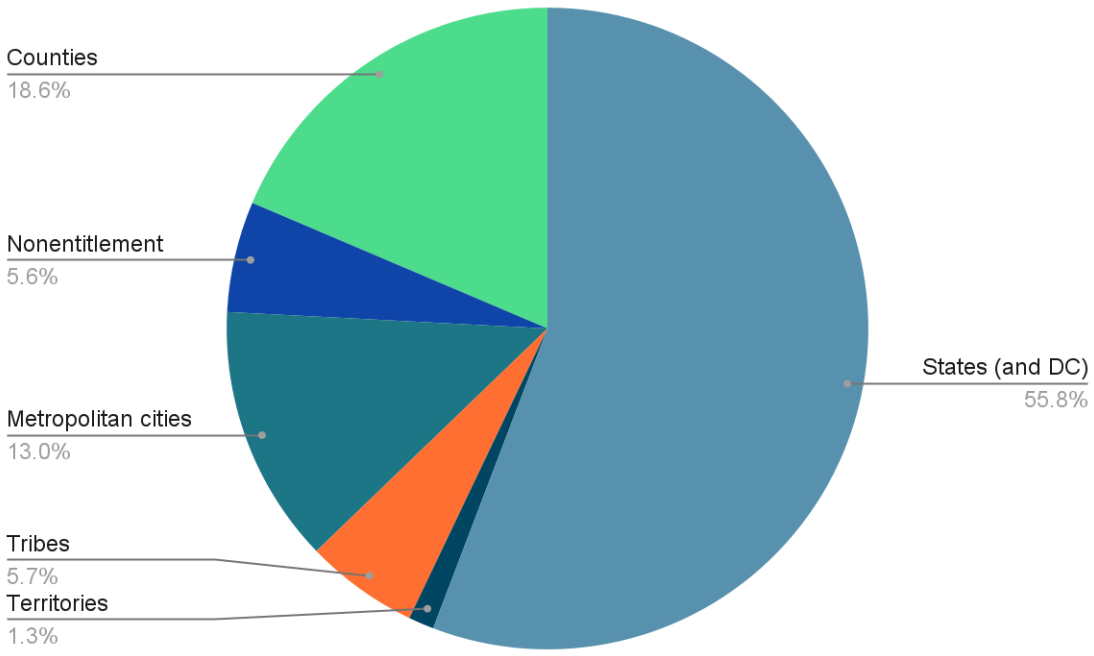
2024	2025	2026	2027	Total
400.0	300.0	200.0	100.0	1,000.0

These Coronavirus Fiscal Recovery Funds distributed $350 billion to the governments of the 50 states (plus the District of Columbia); U.S. territories; federally recognized Tribes; counties; metropolitan cities; and so-called "nonentitlement units of local government," or smaller municipalities. The grants are intended to be used for the purposes of replacing lost public sector revenue, providing bonus pay for essential workers, investing in infrastructure, and meeting other critical needs stemming from the pandemic.[2] Table 2 shows the breakdown of these monies across the different categories.

TABLE 2: APPROPRIATIONS TO CORONAVIRUS STATE AND LOCAL FISCAL RECOVERY FUNDS IN AMERICAN RESCUE PLAN ACT

	Appropriations (Billions of Dollars)	Percentage of Total
States (and D.C.)	195.30	55.8
Territories	4.50	1.3
Tribes	20.00	5.7
Metropolitan cities	45.57	13.0
Nonentitlement units of local government	19.53	5.6
Counties	65.10	18.6
TOTAL	**350.00**	**100.0**

FIGURE 1: APPROPRIATIONS TO CORONAVIRUS STATE AND LOCAL FISCAL RECOVERY FUNDS IN AMERICAN RESCUE PLAN ACT (BILLIONS OF DOLLARS)



In order to model the geographic distribution of the Green New Deal for Cities Act's impacts, we use this breakdown to estimate how the aggregate authorization of $1 trillion would be split among the different recipients. Appendix C provides greater detail on our methodology for using the American Rescue Plan Act data to calculate these allocations.

Stipulations on Use of Funds

The 2021 Green New Deal for Cities Act would afford a significant degree of flexibility to states, territories, Tribes, and localities in determining how to spend their allocations. It provides that funds should be used to:

- "[A]chieve zero greenhouse gas emissions, by 2030, through a fair and just transition for all communities and workers;
- "[C]reate … good, high-wage jobs and ensure prosperity and economic security for all people…;
- "[I]nvest in the infrastructure and industry of the [state, Tribal, or] local government to sustainably meet the challenges of the 21st century;
- "[S]ecure for all people of the United States for generations to come:
  - [C]lear air and water;
  - [C]limate and community resiliency;
  - [H]ealthy and sustainably produced food;
  - [A]ccess to nature; and
  - [A] sustainable environment; and
- "[P]romote justice and equity by stopping current, preventing future, and repairing historic oppression of Indigenous peoples, communities of color, migrant communities, deindustrialized communities, depopulated rural communities, the poor, low-income workers, women, the elderly, the unhoused, people with disabilities, incarcerated communities, and communities experiencing police violence[,] and youth."

The Green New Deal for Cities Act further requires that:

- At least 50 percent of an allocation be used for "climate mitigation," defined as "policies and activities intended to reduce the greenhouse gas forcing of the climate system;" and that
- When applicable, at least 50 percent (which may overlap with the first 50 percent) be invested in "frontline communities," or those that
  - Contain "significant representation" of Indigenous people, people of color, or low-income individuals;
  - Are located in deindustrialized areas or places dependent on a fossil fuel economy; or
  - Are at risk for "higher or more adverse climate change, human health, or environmental effects, as compared to other communities."

The bill is more specific in stipulating what funds cannot be used for. In particular, it restricts recipients from using any awarded monies for:

- Fossil fuel procurement and production, or repair of fossil fuel infrastructure "that would in any way extend lifespan or production capacity;"
- Carbon capture and storage or direct air capture;
- Nuclear power;
- Research and development;
- Establishment of carbon markets or cap-and-trade systems;
- Geoengineering;
- Expansion of highways or roadways or any "automotive infrastructure," with the exception of electric vehicle charging stations;
- Law enforcement, prisons, or immigrant detention centers; or
- "Renewable energy components and materials from mining projects where environmental reviews were fast-tracked."[3]

Modeling State, Local, and Tribal Spending Patterns Under the Green New Deal for Cities

Since the bill does not explicitly prescribe how funds are to be allocated across different allowable uses, we need to make certain assumptions about what these patterns of spending will look like in practice. To get a better idea of how the typical state, local, or Tribal government that receives grants under the Green New Deal for Cities might spend that money, we look to an example of a city that has already taken steps to act in the face of the climate crisis.

A recent analysis from the Brookings Institution identified Denver as one of a few "standout leaders in establishing long-term, flexible funding to address climate change."[4] In November 2020, Denver voters approved a ballot measure that increased the city's sales tax and earmarked the proceeds for a dedicated Climate Protection Fund that can invest in projects like e-bike libraries, green job training, and community solar farms. In 2021, this tax brought in over $40 million in revenue for the fund — even more than what had previously been forecasted.

Denver's Office of Climate Action, Sustainability, and Resiliency, which oversees and administers the Climate Protection Fund, published a five-year plan for 2021-2025 that featured the following projection of how spending would be distributed across allowable uses over that period[5]:

1. Buildings: 25 percent
2. Renewables: 20 percent
3. Workforce: 15 percent
4. Transportation: 15 percent
5. Environmental and Climate Justice: 10 percent
6. Adaptation and Resiliency: 10 percent
7. Administration: 5 percent

Given the similarities between Denver's efforts and the vision of the Green New Deal for Cities, we assume for our modeling purposes that the expenditures authorized by the latter would follow the same pattern (while assuming that no funds will be devoted to any of the restricted activities listed earlier). We then consider the various allowable uses stipulated in the bill to model in even greater detail how exactly the funds within each of these seven categories would be spent.[6]

Model Results

The following table displays the results of using our model to estimate the aggregate employment effects of the Green New Deal for Cities Act.[7] In total, we find that the bill would create or preserve an average of about 1.9 million jobs during each year from 2024 to 2027.[8] We disaggregate these effects into three categories, termed *direct, indirect*, and *induced* jobs.

The distinctions among these are explained in greater detail in Appendix A. In brief, direct jobs are those created through hiring by recipients of appropriated funds, indirect jobs are those created along the supply chains that support the work of the direct hires, and induced jobs are those stemming from the economic stimulus provided by the spending of workers in the first and second categories.

TABLE 3: AGGREGATE AVERAGE EMPLOYMENT EFFECTS (2024-2027)

Annual Number of Jobs Created or Preserved (Direct)	Annual Number of Jobs Created or Preserved (Indirect)	Annual Number of Jobs Created or Preserved (Induced)	Annual Number of Jobs Created or Preserved (Combined)[9]
242,579	1,115,458	543,215	1,901,251

The calculation of induced jobs is based on certain assumptions about the multiplier effect associated with consumer spending, the size of which is likely to fluctuate over the course of the business cycle.[10] For that reason, one could interpret the sum of the direct and indirect jobs as a lower bound on our overall estimates.

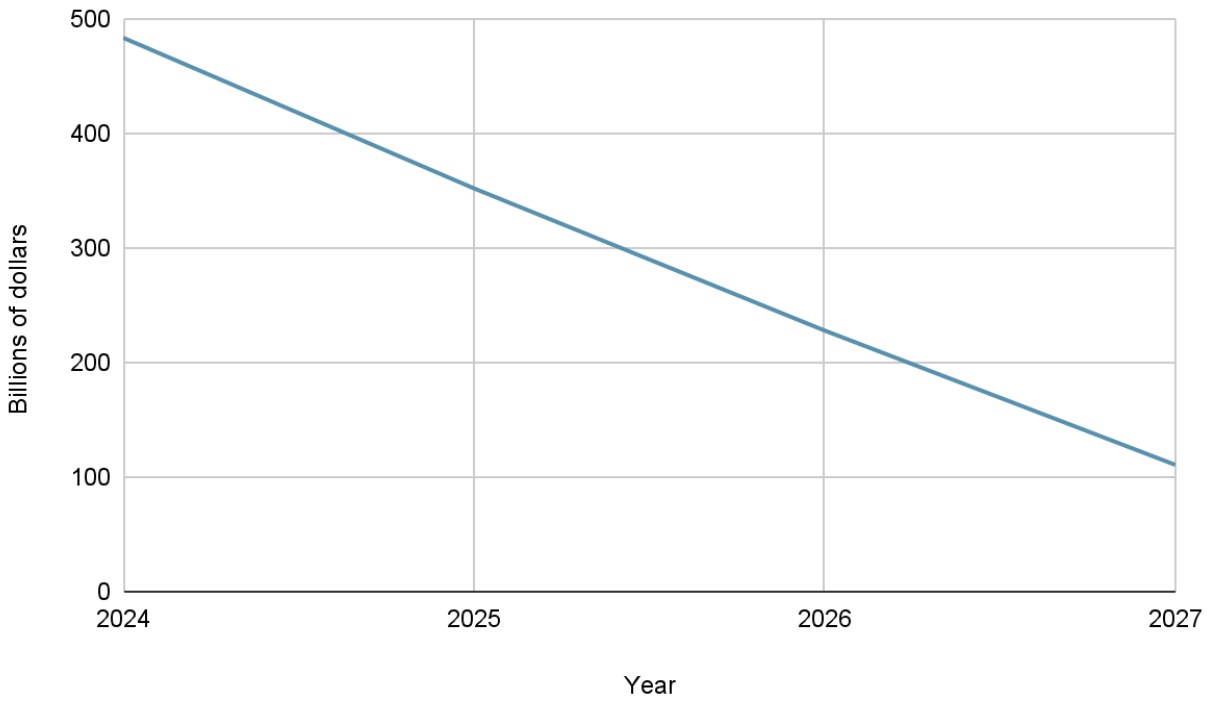
All in all, we find that **the GND for Cities appropriations would create or preserve an average of 1.4 million jobs in the direct and indirect categories, and of a total of 1.9 million jobs in all three, over the period 2024 to 2027.**

In Table 4 and the accompanying figure, we show our projection of the impact that the Green New Deal for Cities Act would have on U.S. gross domestic product over the same timeframe. The total contribution to GDP over this period is $1.2 trillion, or around $300 billion per year. To put this in context, the Federal Reserve's estimate of annual GDP from the fourth quarter of 2022 was about $26.1 trillion, meaning that the total contribution of the GND for Cities to U.S. economic output during this period would be on the order of 4-5 percent of current U.S. GDP.[11]

TABLE 4: AGGREGATE EFFECTS ON VALUE ADDED/GDP (2024-2027)

Year(s)	Annual Net Increase in Value Added — Baseline Scenario (Billions of 2023 Dollars)[12,13]
2024	483.7
2025	352.2
2026	228
2027	110.7
TOTAL:	$1,174.5

FIGURE 2: AGGREGATE EFFECTS ON VALUE ADDED/GDP (2024-2027)



In Table 5, we show a breakdown of average estimated job creation for the top 10 industries, which together account for more than 90 percent of the total by industry (full industry results are available in Appendix D). We find that manufacturing accounts for around 20 percent of these jobs, while administrative, support, waste management, and remediation services account for just over 10 percent, largely due to the bill's provisions related to pollution cleanup and environmental remediation. Other sectors that would see significant jobs impacts include public administration; professional, scientific, and technical services; and construction, which would each account for around 10 percent of the total.

To give a sense of the scale of these figures, we report the jobs impacts in the second column as a percentage of recent employment in each industry. For instance, we find that the manufacturing jobs created or preserved would represent over 2 percent of recent manufacturing employment in the U.S.

Given that the bill imposes Davis-Bacon prevailing wage requirements[14] and mandates that contractors receiving funds maintain a position of neutrality with regard to the rights of their workers to form unions, we expect that a significant portion of these jobs — at least those falling into the "direct" category — would constitute the sort of well-paid "good jobs" that progressive policy should aim to support.

TABLE 5: AVERAGE EMPLOYMENT EFFECTS BY INDUSTRY (2024-2027)[15]

Industry	Average Number of Jobs Created or Preserved	Jobs Created or Preserved as a Percentage of Recent Industry Employment
Manufacturing	345,522	2.27
Administrative, Support, Waste Management, and Remediation Services	217,607	3.09
Public Administration	214,057	2.20
Professional, Scientific, and Technical Services	192,259	1.37
Construction	171,051	1.45
Healthcare and Social Assistance	161,888	0.67
Educational Services	147,167	0.91
Agriculture, Forestry, Fishing, and Hunting	137,718	6.68
Transportation and Warehousing	87,054	1.39
Wholesale Trade	43,470	1.24

In addition to modeling the aggregate employment effects, we can also consider the likely distribution of jobs across states. To that end, we take the total estimates we obtain from our model and allocate them across states using the following procedure:

- Direct jobs are allocated in proportion to the shares of ARPA funds flowing to each state, as computed using data from the Treasury Department;
- Using industry-specific estimates of the indirect and induced jobs from our model, we allocate these in proportion to the observed geographic distribution of employment in each industry as measured by the 2021 American Community Survey (ACS);

The following table shows the breakdown of cumulative jobs created or preserved due to the Green New Deal for Cities Act provisions over the period 2024-2027 for the 10 states that see the largest impacts (full state results are available in Appendix E).

TABLE 6: AVERAGE EMPLOYMENT EFFECTS BY STATE (2024-2027)

State	Average Number of Jobs Created or Preserved (Direct)	Average Number of Jobs Created or Preserved (Indirect)	Average Number of Jobs Created or Preserved (Induced)	Average Number of Jobs Created or Preserved (Total)
CA	31,418	139,860	67,308	238,586
TX	18,590	90,731	44,791	154,112
NY	16,781	63,794	30,227	110,802
FL	11,525	65,555	32,087	109,167
IL	9,919	43,760	21,560	75,239
PA	9,490	43,007	21,228	73,725
OH	7,520	39,402	19,698	66,620
GA	5,901	35,380	17,406	58,687
MI	8,190	33,405	16,579	58,174
NC	6,358	34,132	16,695	57,185

Finally, given the important roles the bill envisions for city and local governments as the leaders of a green transformation, we additionally break down our jobs estimates by metro area using a similar allocation procedure to the one described for the state numbers. Table 7 shows employment impacts for the top 40 metro areas; Appendix F provides the model output for the top 250 metro areas.

TABLE 7: AVERAGE EMPLOYMENT EFFECTS BY METRO AREA, 2024-2027

Rank	Metro Area	Average Number of Jobs Created or Preserved (Total)
1	New York-Newark-Jersey City, NY-NJ-PA	110,569
2	Los Angeles-Long Beach-Anaheim, CA	76,952
3	Chicago-Naperville-Elgin, IL-IN-WI	56,678
4	Washington-Arlington-Alexandria, DC-VA-MD-WV	44,168
5	Dallas-Fort Worth-Arlington, TX	41,843
6	Houston-The Woodlands-Sugar Land, TX	39,003
7	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	35,602
8	Atlanta-Sandy Springs-Roswell, GA	33,967
9	Miami-Fort Lauderdale-West Palm Beach, FL	31,470
10	Boston-Cambridge-Newton, MA-NH	31,026
11	San Francisco-Oakland-Hayward, CA	27,760
12	Phoenix-Mesa-Scottsdale, AZ	27,295
13	Detroit-Warren-Dearborn, MI	25,723
14	Riverside-San Bernardino-Ontario, CA	25,576
15	Seattle-Tacoma-Bellevue, WA	25,233
16	Minneapolis-St. Paul-Bloomington, MN-WI	23,977
17	San Diego-Carlsbad, CA	19,812
18	Denver-Aurora-Lakewood, CO	19,224
19	Baltimore-Columbia-Towson, MD	17,202
20	Portland-Vancouver-Hillsboro, OR-WA	16,768
21	St. Louis, MO-IL	16,478
22	Tampa-St. Petersburg-Clearwater, FL	16,335
23	Charlotte-Concord-Gastonia, NC-SC	15,236
24	Sacramento--Roseville--Arden-Arcade, CA	15,073
25	Austin-Round Rock, TX	14,366
26	Pittsburgh, PA	13,343
27	Orlando-Kissimmee-Sanford, FL	13,066
28	Kansas City, MO-KS	12,932
29	San Antonio-New Braunfels, TX	12,669
30	Nashville-Davidson--Murfreesboro--Franklin, TN	12,494
31	Cincinnati, OH-KY-IN	12,397
32	Cleveland-Elyria, OH	12,172
33	Columbus, OH	12,057
34	San Jose-Sunnyvale-Santa Clara, CA	12,026
35	Indianapolis-Carmel-Anderson, IN	11,989
36	Milwaukee-Waukesha-West Allis, WI	11,460
37	Providence-Warwick, RI-MA	11,328
38	Las Vegas-Henderson-Paradise, NV	10,343
39	Virginia Beach-Norfolk-Newport News, VA-NC	9,780
40	Fresno, CA	9,192

Conclusion

Using the Data for Progress Jobs Model, we find that an updated Green New Deal for Cities Act would create or preserve an average of around 1.9 million jobs over the next four years and would contribute about $1.2 trillion to the U.S. GDP during the same time. Given the robust worker protections included in the earlier version of this legislation, we also anticipate that the jobs directly created by the unprecedented economic mobilization it would bring about would largely be the sort of well-paid "good" jobs that progressive policies should aim to promote.

The Green New Deal has been a long-held rallying cry for progress in the environmental movement, but the Green New Deal for Cities Act of 2021 took a major step toward translating those aspirations into concrete policy goals. Reviving this legislation at the next available opportunity would help to ensure that every city and town across America can participate in transforming our economy and energy systems to deliver a zero-carbon future.

Endnotes

[1] "Ocasio-Cortez, Markey Reintroduce Green New Deal Resolution" (April 20, 2021). Available at https://ocasio-cortez.house.gov/media/press-releases/ocasio-cortez-markey-reintroduce-green-new-deal-resolution-0.

[2] U.S. Department of the Treasury, "Coronavirus State and Local Fiscal Recovery Funds." Available at https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/state-and-local-fiscal-recovery-funds.

[3] H.R. 2644 – "To provide direct funding to local, Tribal, and territorial governments to establish Green New Deal programs and initiatives, and for other purposes." Available at https://www.congress.gov/bill/117th-congress/house-bill/2644/text.

[4] Caroline George, Joseph W. Kane, and Adie Tomer (Brookings). February 22, 2023. "How US cities are finding creative ways to fund climate progress." Available at https://www.brookings.edu/research/how-us-cities-are-finding-creative-ways-to-fund-climate-progress/.

[5] Denver Office of Climate Action, Sustainability, and Resiliency. "Climate Protection Fund Five-Year Plan." Available at https://denvergov.org/files/assets/public/climate-action/cpf_fiveyearplan_final.pdf. For projected spending breakdown for 2021-2025, see pg. 7.

[6] The Green New Deal for Cities bill stipulates that at least 50 percent of a state, local, or Tribal government's funding allocation must be spent on projects related to climate mitigation, which it defines as "policies and activities intended to reduce the greenhouse gas forcing of the climate system." Aside from those initiatives that would fall under the heading of "Adaptation and Resiliency," we assume that this requirement would easily be met given the percentages allocated to Buildings, Renewables, Transportation, and Environmental and Climate Justice.

[7] Estimates of employment increases are obtained by using data from the Bureau of Economic Analysis (BEA) to calculate the ratio of gross output to employment in each industry in 2021 (the most recent year for which data are available), and then multiplying the output effects from our model by these ratios.

[8] To be precise, our model provides annual employment estimates of how many jobs will be created or preserved by the bill's spending in that year. Summing up these figures across years yields an estimate of the aggregate impact in terms of job-years, where a job-year denotes one job for one year. Since specific jobs may last for different lengths of time, and since converting job-years into a total number of jobs would require additional assumptions about the average length of employment in different industries and locations, we report our results as annual averages for the sake of simplicity and clarity.

[9] Note that direct, indirect, and induced categories do not exactly sum to total due to rounding.

[10] See Appendix A for more detail on the assumptions underlying the estimation.

[11] Federal Reserve Bank of St. Louis, Federal Reserve Economic Data (FRED): Gross Domestic Product, available at https://fred.stlouisfed.org/series/GDP.

[12] Inflation adjustments are made using annual GDP deflators from Federal Reserve Bank of St. Louis, Federal Reserve Economic Data (FRED), available at https://fred.stlouisfed.org/series/USAGDPDEFAISMEI. For future years, we assume a 3 percent annual rate of inflation.

[13] Note that annual figures do not exactly sum to total due to rounding.

[14] The Davis-Bacon Act of 1931 is a federal law that requires contractors and subcontractors performing public works projects that receive federal funding to ensure that all workers are paid the "prevailing wage" (and prevailing fringe benefits) for their occupations in the local area where the work is being performed. Determinations of what constitutes the prevailing wage for a given place, occupation, and year are issued by the Department of Labor. For more details see https://www.dol.gov/agencies/whd/government-contracts/construction/faq#23.

[15] The third column reports jobs created or preserved as a percentage of total employment in the respective sector as calculated from the 2021 American Community Survey (ACS). As of the time of writing, ACS data are not yet available for 2022.