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CONNECTICUT
GREEN BANK

Memo

To: Connecticut Green Bank Board of Directors

From: Bryan Garcia (President and CEO), Brian Farnen (General Counsel and Chief Legal Officer), and Alex Kovtunenko (Associate General Counsel, Financing Programs)

CC: Bert Hunter (EVP and CIO), Sergio Carrillo (Director of Incentive Programs), and Mackey Dykes (VP of Financing Programs and Officer)

Date: December 16, 2022

Re: Inflation Reduction Act – Dream Big including Navigating the Incentive Maze and Greenhouse Gas Reduction Fund

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On August 16, 2022, President Biden signed the Inflation Reduction Act ("IRA"), creating the largest investment in the history of the United States to confront climate change by enabling public and private investment, including fulfilling a campaign promise focus on environmental justice, just transition, and domestic manufacturing. Within the IRA are a number of tax credit provisions that provide project developers and end-use customers with a myriad of opportunities to stack and receive federal incentives. Helping developers and customers navigate these federal tax credits, alongside the various state incentive programs, represents an extraordinary opportunity that the staff calls the "Incentive Maze".

In addition to the tax credits, the IRA includes the creation of the Greenhouse Gas Reduction Fund ("GHGRF") – a $27 billion allocation through Sec. 134 of the Clean Air Act to simultaneously reduce GHG emissions and air pollution, while increasing investment in and benefits to low income and disadvantaged communities. The deployment mechanism of the GHGRF is modelled after the Connecticut Green Bank ("Green Bank") with a key priority to leverage private capital. It should be noted that on September 13, 2022, several staff members of the Green Bank were invited to the White House for the celebration of the signing of the IRA, and its inclusion of the GHGRF.

This memo provides a short overview of the IRA that the staff of the Green Bank believe is a once in a generation opportunity for the Green Bank to unleash its mission to "confront climate change by increasing and accelerating investment in Connecticut's green economy to create more resilient, heathier, and equitable communities." This is part of our developing efforts to "Dream Big" with a proposal we intend to bring to the Board of Directors for consideration in January of 2023.

Incentive Maze – Tax Credits
The IRA includes tax credits that have the potential to increase investment in and deployment of clean energy, especially in vulnerable communities.[1] If the complexity of these federal tax incentives, when combined together with Connecticut incentives (e.g., Home Energy Solutions, Residential Renewable Energy Solutions, Energy Storage Solutions), can be simplified to help project developers and end-use customers navigate the Incentive Maze, then there is the potential for Connecticut to realize significant benefits as a result of the IRA.

These tax credits come in many forms, including additional requirements and adders to promote the Biden administration's values towards climate change and environmental justice (e.g., support for low income and disadvantaged communities (DACs)), and the ability to transfer value (e.g., investment tax credits).

Additional (Labor) Requirements
Reflecting President Biden's commitment to a just transition, in order to receive maximum tax credit value for certain provisions of the tax code (e.g., Section 48 – Energy Investment Credit), prevailing wage and apprenticeship requirements must be included within projects:

- **Prevailing Wage** – With respect to any qualified facility, a taxpayer must ensure that any laborers and mechanics employed by the taxpayer or any contractor or subcontractor in: (i) the construction of such facility, and (ii) the alteration or repair of such facility (for a 10-year period after the facility is placed in service), are paid wages at rates not less than the prevailing rates for construction, alteration, or repair of a similar character in the locality in which such facility is located as most recently determined by the Secretary of Labor. There are also correction and penalty mechanisms for a taxpayer's failure to satisfy these requirements.

- **Apprenticeships** – With respect to the construction of any qualified facility, not less than 10-15% (depending on when construction began) of the total labor hours of the construction, alteration, or repair work (including such work performed by any contractor or subcontractor) must performed by qualified apprentices, subject to any applicable requirements for apprentice-to-journey worker ratios of the Department of Labor or the CT Department of Labor. Each taxpayer, contractor, or subcontractor who employs four or more individuals to perform construction, alteration, or repair work with respect to the construction of a qualified facility must employ one or more qualified apprentices to perform such work. A taxpayer to satisfy these requirements by a "Good Faith Effort Exception". There are also alternative payments for compliance ($50/h) and increased payment for intentional disregard ($500/h).

In the context of renewable energy generation, these labor requirements are only applicable to projects above 1MWac. In most instances if these labor requirements are not met, then project developers will not receive full value of the tax credit (e.g., 30%), but instead a reduced amount (e.g., 6%) creating an incentive to enable a just transition to the clean energy economy. It should be noted, that per Public Act 21-43 "An Act Concerning a Just Transition to Climate-Protective Energy Production and Community Investment," that the threshold for labor requirements for Class I projects in Connecticut is 2 MW.[2]

On November 30, 2022 IRS published Notice 2022-61 which (1) provides general guidance on the prevailing wage and apprenticeship requirements, (2) establishes the 60-day period described in those

[1] As defined by Public Act 20-05. Within its Comprehensive Plan, a goal of the Green Bank is to direct no less than 40 percent of investment and benefits in vulnerable communities by 2025.
[2] https://www.cga.ct.gov/2021/act/Pa/pdf/2021PA-00043-R00SB-00999-PA.PDF

provisions of the IRA with respect to the applicability of the prevailing wage and apprenticeship requirements, and (3) provides guidance for determining the beginning of construction or installation of projects which is necessary for credit calculation and applicability of requirements.[3]

Adders

Reflecting President Biden's commitment to environmental justice and manufacturing in the United States, there are additional incentives for some project developers and end-use customers, including:

- **Energy Communities** – 10% adders for projects located on: (i) a brownfield site; (ii) a metropolitan or non-metropolitan statistical area which (A) has, or had any time during the period beginning in 2010, 0.17% or more direct employment or 25% or more local tax revenues, in either case related to the extraction, processing, transport, or storage of coal, oil or natural gas, or (B) has an unemployment rate above the national average for the previous year; or, (iii) a census tract, or a census tract that is adjoining to a census tract, in which a coal mine has closed after 1999 or a coal-fired electric generating unit was retired after 2009.

- **Low Income** – 10% adder for a qualifying project (less than 5MWac) in a low-income community (as defined in the IRA) or on Indian land, 20% adder if the project is part of a qualified low-income residential building project (as defined in the IRA) or qualified low-income economic benefit project (as defined in the IRA).

- **Domestic Content** – 10% adders for qualifying facility if (i) 100% of any steel or iron that is a component of the facility was produced in the United States, and (ii) 40% of manufactured products that are components of the facility were produced in the United States. The required percentage of domestic manufactured products for offshore wind facilities is 20%. The required percentage of domestic content included in a facility increases each year.

Project developers and end-use customers that are able to take advantage of both the additional requirements and adders, can stack federal tax credit incentives. For example, a commercial, nonprofit or third-party owned residential solar PV project in the South End of Bridgeport, CT, has the potential to receive a federal tax credit of up to 60% by meeting prevailing wage and apprenticeship requirements (i.e., 30%), being located in an energy community next to a former coal fired power plant (i.e., 10%), and on the roof of a low-income household (i.e., 10-20%) – a significant opportunity to enable federal investment in and deployment of clean energy towards vulnerable communities of Connecticut.

Many provisions of the IRA, such as for labor requirements noted above, require guidance from IRS before they can be implemented, estimated or priced by the various market participants. The adders described in this section are among the most critical sections that require IRS guidance. On October 5, 2022 IRS Treasury/IRS published general request for comments on different aspects of extensions and enhancements of energy tax benefits in the IRA.[4] Green Bank submitted comments to IRS, focusing on elective payment ("direct pay") provisions, the "energy communities" adder definition, and the "low-income" adder definition. Green Bank's submitted comments were shared with the Board together with this memorandum. As of the date of this memorandum, subsequent IRS guidance (other than the labor requirements guidance discussed above) has not been issued.

[3] IRS Notice 2022-61

[4] October 5, 2022 IRS Notices

Tax Credits

There are a number of tax credits within the IRA that provide incentives for project developers and end-use customers for buildings, vehicles, and other types of projects that are relevant to the Comprehensive Plan of the Green Bank, including:

- **Energy Efficient Home Improvement Credit** (25C) – 30% credit for building envelope components and qualified energy property to a residence by the taxpayer, regardless of whether the taxpayer owns the dwelling unit or is the taxpayer's principal residence. Annual limit of $1,200 (and a $600-per-item limit, with exceptions, heat pumps limit is $2,000).

- **Residential Clean Energy Credit** (25D) – 30% credit to homeowners who install eligible technologies (i.e. solar, geothermal, fuel cells, storage) on their own home, whether it is their principal residence or a vacation home. Standalone storage now qualifies.

- **Previously Owned Clean Vehicles** (25E) – Credit for used EVs and fuel cell vehicles, lesser of $4,000 or 30% of the sale price. MAGI limits and other restrictions.

- **Alternative Fuel Vehicle Refueling** (30C) – 30% credit for qualified alternative fuel vehicle refueling property, subject to annual limits, placed in service in low-income census tracts or non-urban locations. Subject to labor requirements.

- **Clean Vehicle Credit** (30D) – $7,500 credit for new EVs and fuel cell vehicles. No per-manufacturer cap, as previously existed. MAGI limits and other restrictions.

- **Renewable Electricity Production Credit** (45) – Production credit for 10 years, for wind solar and other technologies, up to 2.5¢/kWh (plus inflation adjustment, published each year by the IRS, with a base year of 1992) for projects meeting labor requirements.

- **New Energy Efficient Home Credit** (45L) – Credits for a new construction residential subject to Energy Star Residential New Construction Program or the Energy Star Manufactured New Homes program requirements. Limits: Single family: $2,500 or $5,000, Multifamily: $500 or $1,000 per unit.

- **Qualified Commercial Clean Vehicle Credit** (45W) – 30% (limited to $7,500 for vehicles less than 14,000 pounds, and $40,000 for all other vehicles) credit for purchasing new commercial EVs and fuel cell vehicles.

- **Clean Electricity Production Credit** (45Y) – Starts in 2025, a technology-neutral production credit for generating facilities that have a greenhouse gas emissions rate of not greater than zero. Replaces section 45 credit. Credits for up to ten years. Subject to labor requirements.

- **Energy Investment Credit** (48) – 30% for solar, geothermal and wind energy property serving environmental justice populations for business taxpayers for projects beginning construction no later than December 31, 2024. Subject to possible adders. Projects above 1MWac are subject to labor requirements. Stand-alone storage and interconnection costs (below 5MWac) now qualify.

- **Advanced Energy Projects** (48C) – 30% credit, limited to $10 billion of new funding. Credits are competitively awarded by Treasury/DOE to 'qualified advanced energy projects' which (1) re-equip an industrial or manufacturing facility with equipment designed to reduce greenhouse

gas emissions by at least 20% through the installation of certain property; or (2) re-equip, expand, or establish an industrial or manufacturing facility for the processing, refining, or recycling of defined critical materials. Subject to labor requirements.

- **Clean Electricity Investment Credit** (48E) – Starts in 2025, technology neutral credit for generating facilities that have a greenhouse gas emissions rate of not greater than zero. Will replace the Section 48 credit. Subject to possible adders. Projects above 1MWac are subject to labor requirements.

- **Energy Efficient Commercial Buildings Deduction** (179D) – Up to $5 per square foot deduction for commercial buildings that achieve certain energy costs savings. Replaces lifetime cap with a 3 or 4-year lookback period. Now assignable and may be used by nonprofits. Subject to labor requirements.

And there are other tax credits that although not directly relevant to the Comprehensive Plan of the Green Bank, are potentially relevant to the State of Connecticut at large, including:

- **Carbon Capture and Sequestration Credit** (45Q) – tax credit for carbon oxide sequestration, computed per metric ton of qualified carbon oxide captured and sequestered. The amount of the credit, as well as various features of the credit, vary by year.

- **Zero Emission Nuclear Production Credit** (45U) – Production credit for electricity produced at a qualified nuclear power facility and sold by the taxpayer to an unrelated person in taxable years 2023 to 2033.

- **Clean Hydrogen Production Credit** (45V) – Production credit for clean hydrogen produced at qualified facilities for a 10-year period. Credit: $3/kg (subject to wage and labor requirements). The tax credit value is derated to the degree to which emitting resources are used to power the electrolysis used to create eligible clean hydrogen.

- **Advanced Manufacturing Production Credit** (45X) – Production credit for eligible components (e.g., solar, wind, storage, inverter comments and critical minerals), amount varies by component. Subject to labor requirements.

- **Clean Fuel Production Credit** (45Z) – Production credit bases on applicable fuel emissions factor, maximum $1.00/gallon ($1.75/gallon for aviation fuel). Subject to labor requirements.

In addition to the credits set forth above there are additional rebates that are going to be made available under the IRA, including:

- **Residential Efficiency and Electrification Rebates** (Sec. 50121) - DOE will disburse to energy offices (i.e., DEEP) to establish rebates for a variety of home energy upgrades under the Home Owner Managing Energy Savings ("HOMES") rebate program. Rebates for home energy retrofits up to the lesser $8,000 per home or 80% of project cost if the project saves at least 35%. Lesser amounts available if projects save less than 35%. Multi-family rebates are also supported with different rebate amounts. Caps can increase for low- and moderate-income families with approval of the Secretary.

- **High-Efficiency Electric Home Rebate Program** (50122) - DOE will disburse to energy offices (i.e., DEEP) for rebates to low-income single and multi-family homes which meet low-

income eligibility criteria. Limits set by eligible measures and limits rebates to no more than $14,000 per participant for either new construction, replacement of nonelectric appliances, or first-time appliance purchase.

Successfully navigating the tax credits and rebates within the IRA and coordinating these incentives with existing state policy, can bring extraordinary value to Connecticut, and advance and accelerate the mission of the Green Bank. For a "cheat sheet" of these additional requirements, adders, and tax credits – see Attachment A.

These federal incentives, in combination with the various state incentives, represent the Incentive Maze for Connecticut that we need to help project developers and end-use customers more easily and successfully navigate. If the Green Bank and its partners (e.g., DEEP, PURA, utilities, grassroots stakeholders) can simplify the process for project developers and end-use customers to access federal and state incentives, including access to capital to finance such projects, then significant benefits can be achieved for Connecticut, and its efforts to confront climate change, while increasing investment in and benefits to vulnerable communities.

Funding and Financing – Greenhouse Gas Reduction Fund
Within the IRA is a $27 billion appropriation to the Environmental Protection Agency ("EPA") for the GHGRF, which modifies Sec. 134 of the Clean Air Act, including:

- **Zero Emission Technologies** (Sec. 134(a)(1)) – led by Senator Sanders, $7 billion appropriation for zero emission technologies (e.g., residential rooftop solar) for low income and disadvantaged communities; and

- **National Climate Bank** (Sec. 134(a)(2-3)) – led by Congresswoman Dingell, Senator Markey, and Senator Van Hollen, ~$20 billion appropriation for qualified projects, including at least $8 billion for low income and disadvantaged communities.

Each of these sections has a political history with various leaders of Congress, and the involvement of the Green Bank along the way. The Green Bank continues to engage at the federal level, except now with the EPA.

Green Bank History with Sec. 134(a)(1)
In September of 2021, the Congressional negotiation team of Senator Sanders sought information from the Coalition for Green Capital ("CGC") on how green banks put solar PV on residential rooftops. At CGC's request, the Green Bank provided a two-page description called "Residential Solar and Green Banks – Towards an Inclusive, Just, and Resilient Green Economy in Connecticut," which featured an overview of the Residential Solar Investment Program ("RSIP"),[5] including its impacts[6] and effects from its financing programs – see Attachment B.

Subsequently, Senator Sanders led an effort to include $7 billion within the $27 billion GHGRF with the following features:

[5] CGS 16-245ff

[6] $1.4 billion of public and private investment reaching over 45,000 households, deploying nearly 370 MW of residential rooftop solar, creating over 16,000 job-years in our communities, avoiding the emissions of nearly 6 MMTCO2 over the life of the projects, avoiding $180 MM to $400 MM of public healthcare costs as a result of cleaner air, and reaching no less than 40% of investment in vulnerable communities.

- Making grants on a competitive basis to states, municipalities, and tribal governments, and eligible recipients;[7]

- Providing grants, loans, or other forms of financial and technical assistance as the purpose; and

- Focusing on low-income and disadvantaged communities.

Although the EPA is seeking public comment on the sorts of distributed technologies to include as "qualified projects" under the GHGRF, Senator Sanders has made his intentions clear to the EPA that Sec. 134(a)(1) of the GHGRF is to focus exclusively on residential solar PV by holding back his vote for presidential nominees to the EPA.[8] The Green Bank is aware of Senator Sanders public policy intentions because, as we note above, we were requested to provide information to his team over a year ago on Connecticut's RSIP.

Green Bank History with Sec. 134(a)(2-3)

On June 26, 2009, the American Clean Energy and Security Act ("ACES"), led by Congressmen Ed Markey and Henry Waxman, passed the House by a slim margin.[9] Within ACES, was a bipartisan-supported Clean Energy Development Administration ("CEDA") introduced by Congressman Chris Van Hollen within the Committee on Energy and Commerce – a provision that would have created a national climate bank. Although ACES passed the House, it was never voted on in the Senate, and thereby never became law.

The proponent of CEDA, within ACES, was Reed Hundt,[10] CEO of the Coalition for Green Capital ("CGC"), a nonprofit organization whose mission is to halt climate change by accelerating investment in clean energy technologies.[11] The concept of a "green bank" having failed to be supported at the national level through ACES, was introduced at the state level in Connecticut in 2011. In June of 2011, Governor Malloy and DEEP Commissioner Dan Esty, with legal support from CGC,[12] and nearly unanimous bipartisan support from the Connecticut General Assembly, created the nation's first state-level green bank (i.e., Connecticut Green Bank)[13] within Section 99 of Public Act 11-80 (i.e., CGS 16-245n).

The Green Bank would become the national example for smarter government using a limited amount of public funds to mobilize multiples of private investment in clean energy. For its innovation and impact, the Green Bank was awarded the "Innovations in American Government Awards" by the Ash Center of the Kennedy School of Government at Harvard University for "Sparking the Green Bank Movement".[14] Local (e.g., Montgomery County Green Bank, District

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[7] Eligible recipients means a nonprofit organization that is (a) designed to provide capital, including by leveraging private capital, and other forms of financial assistance for the rapid deployment of low- and zero-emission products, technologies, and services, (b) does not take deposits other than deposits from repayments and other revenue received from financial assistance provided using grant funds under this section, (c) is funded by public or charitable contributions, and (d) invests in or finances projects alone or in conjunction with other investors.

[8] "Struggle Over EPA Air Nominee Foreshadows Future Fights" in E&E News (December 2, 2022) – click here

[9] https://ballotpedia.org/American_Clean_Energy_and_Security_Act

[10] Yale University (BA, JD) and former Chairman of the Federal Communication Commission under President Clinton

[11] https://coalitionforgreencapital.com/

[12] Reed Hundt, Ken Berlin, and Alex Kragie

[13] Originally called the Clean Energy Finance and Investment Authority, but subsequently renamed the Connecticut Green Bank

[14] https://ash.harvard.edu/news/connecticut-green-bank-wins-top-prize-harvard%E2%80%99s-innovations-american-government-awards

of Columbia Green Bank), state (e.g., New Jersey, New York, Rhode Island), and national (e.g., New Zealand Green Investment Finance, Rwanda Catalytic Green Investment Bank) governments created green banks as a result of Connecticut's innovation and leadership. Bills were being introduced at the national level again, including by members of the Connecticut Congressional Delegation.[15]

The $20 billion National Climate Bank provision within the GHGRF was supported by Congresswoman Debbie Dingell, Senator Markey, and Senator Van Hollen,[16] and the White House,[17][18] but modified from its original form as the Clean Energy and Sustainability Accelerator ("CESA"), in order to meet the rules of budget reconciliation by the Parliamentarian. And, again, although the EPA is seeking public comment on Section 134(a)(2-3), Congresswoman Dingell, Senator Markey, and Senator Van Hollen have made their intentions clear to the EPA that these sections of the GHGRF are to focus on the creation of a single National Climate Bank – see Attachment C. The Green Bank is aware of their intentions because we have been involved in hearings and reviews of proposed legislation by Congressional leaders over the years.

Green Bank Engagement with EPA

Gina McCarthy – former Climate Advisor to President Biden, former Administrator of the EPA, former Commissioner of Connecticut Department of Environmental Protection, and former member of the Board of Directors of the Green Bank – is a supporter of the green bank model.[19] In support of President Biden's efforts to confront climate change and environmental justice, her team supported the green bank model from the White House by advancing the CESA.[20] And now, her predecessor, EPA Administrator Michael Regan, is responsible for implementing the GHGRF. The Green Bank is now engaged with the EPA to continue to position Connecticut, and its Green Bank, to receive funding through the GHGRF to support the successful achievement of climate change policies in Connecticut. It should be noted that in June 2021, a decade following the creation of the Green Bank, that Governor Lamont and DEEP Commissioner Katie Dykes, with a recommendation from the Governor's Council on Climate Change, and bipartisan support from the Connecticut General Assembly, expanded the scope of the Green Bank to include "environmental infrastructure," including the creation of an "environmental infrastructure fund," set up to receive federal funding through the GHGRF.

The EPA has initiated an extensive public comments process on the GHGRF, which the Green Bank has been actively engaged in, including:

- **National Listening Sessions** – verbal comments delivered on November 9, 2022;[21]

[15] For example, Congressman Jim Himes and Rosa DeLauro and Senators Murphy and Blumenthal sponsored or co-sponsored various bills in the House (i.e., Green Bank Act of 2014 (H.R.4522), Green Bank Act of 2016 (H.R.5802), Green Bank Act of 2017 (H.R.2995), National Green Bank Act of 2019 (H.R.3423), and National Green Bank Act of 2021 (H.R.2656)) and the Senate (i.e., Green Bank Act of 2014 (S.2271), Green Bank Act of 2016 (S.3382), Green Bank Act of 2017 (S.1406), National Green Bank Act of 2019, National Climate Bank Act of 2021 (S.283), and National Green Bank Act of 2021 (S.1208)).

[16] https://debbiedingell.house.gov/uploadedfiles/dingmi_120_xml_final.pdf

[17] https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/01/fact-sheet-president-biden-renews-u-s-leadership-on-world-stage-at-u-n-climate-conference-cop26/

[18] It should be noted that Gina McCarthy, White House National Climate Advisor, served on the Board of Directors of the Connecticut Green Bank. And, Jahi Wise, Special Assistant to the President (and Yale SOM and Law school graduate), is now overseeing the implementation of the GHGRF.

[19] Earth Day Remarks from Gina McCarthy (April 22, 2021) – click here

[20] https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/23/fact-sheet-biden-administration-outlines-key-resources-to-invest-in-coal-and-power-plant-community-economic-revitalization/

[21] https://www.youtube.com/watch?v=ppwMggfbXZg&t=1s

- **Environmental Finance Advisory Board Public Comments** – public comments submitted on December 1, 2022 (comments available upon request); and

- **EPA Public Comments** – public comments submitted on December 5, 2022 – see Attachment D.

The Green Bank staff[22] is working hard to successfully compete for and win federal resources for Connecticut through the GHGRF.

Dream Big

In order to successfully navigate the Incentive Maze of federal tax credits and incentives, and compete for and win additional resources for Connecticut through the GHGRF, the Green Bank team is thinking ahead about a "Dream Big" strategy to build onto the FY23 Comprehensive Plan and Budget. We are exploring the six (6) P's – including Products, Promotion, People, Place, Policy, and Politics – to identify what areas can be enhanced to increase and accelerate investment in clean energy and climate change projects in vulnerable communities to advance our mission. Working through the Budget, Operations, and Compensation Committee, we intend to bring a set of recommendations to the Board of Directors at the January 20, 2023 meeting.

[22] Bryan Garcia (President and CEO), Bert Hunter (EVP and CIO), Eric Shrago (VP of Operations), Sara Harari (Associate Director of Innovation and Senior Advisor to the President and CEO), and Ashley Stewart (Manager of Community Engagement)

ATTACHMENT A
"Cheat Sheet" of Federal Tax Credits Under the IRA
[see attached]

ATTACHMENT B

Residential Solar and Green Bank
Towards an Inclusive, Just, and Resilient Green Economy in Connecticut

BACKGROUND

Through CGS 16-245ff, the Connecticut Green Bank ("Green Bank") was assigned the public policy responsibility of enabling the deployment of 350 MW of residential solar by the end of 2022, while also fostering the sustained orderly development of a local solar industry. As the nation's first green bank, it has implemented the most successful residential solar program in the northeastern U.S. (see Table 1 in Appendix I). In so doing, it has also ensured that vulnerable communities (i.e., low-income families and communities of color), have had easy and affordable access to solar through innovative financing mechanisms[23] that have made Connecticut among the few recognized "solar with justice" states.[24]

IMPACT – SOCIAL AND ENVIRONMENTAL

As of June 30, 2021,[25] the Green Bank's efforts have resulted in the following social and environmental benefits:

- **Investment** – $1.4 billion of total investment, comprising $1.246 billion of private investment and $0.154 billion of public investment, a leverage ratio of 9:1
- **Deployment** – 45,530 projects totaling 368.9 MW of installed capacity, which will produce about 420,000 MWh of zero emission renewable energy per year, or about 1.6% of Connecticut's RPS
- **Jobs** – through the investment in and deployment of residential solar in Connecticut, there has been 16,060 job-years created, including 6,591 direct and 9,499 indirect and induced
- **Climate Change and Public Health**- through the production of zero emission renewable energy, 5.8 MTCO2 are estimated to be avoided over the life of the systems, and as a result of the avoidance of SOx, NOx, and PM, between $180.6-$408.4 MM of public health costs (e.g., hospitalizations, sick days) will be avoided
- **Vulnerable Communities** – with the goal of by 2025, no less than 40% of investment and benefits (e.g., projects, deployment) directed to vulnerable communities,[26] $640.7 MM of investment (i.e., 46%), 22,873 projects (i.e., 50%), and 169.1 of the installed capacity (i.e., 46%) has been achieved for such communities (see Table 2 – Appendix I), resulting in part from innovative financing that eliminates the energy affordability gap[27]

As a result of the successful implementation of public policy on residential solar in Connecticut,[28] including financing programs (see Table 3 – Appendix I), the Green Bank will be administering battery storage incentive and financing programs to improve resilience from the impacts of climate change, especially with vulnerable communities.[29]

TOWARDS AMERICA

In 2020, of the 19.2 GW of solar deployed in America, 3.2 GW (or over 400,000 projects and a $9.1 B market) was residential – the largest year on record despite COVID-19. Double-digit growth is expected, leading to 4.7 GW in 2023 and 7.0 GW by 2030 with 23% of those systems expected to include battery

[23] "Performance of Solar Leasing for Low- and Moderate-Income Customers in Connecticut" by Lawrence Berkeley National Laboratory (May 2021).
[24] "Solar with Justice: Strategies for Powering Up Under-Resourced Communities and Growing an Inclusive Solar Market" by the Clean Energy States Alliance (December 2019).
[25] Comprehensive Annual Financial Report of the Connecticut Green Bank for FY21 (forthcoming)
[26] Per PA 20-05, including Community Reinvestment Act Eligible and Environmental Justice Communities per CGS 22a-20a.
[27] "Connecticut Green Bank Low and Moderate Income Solar Program Savings Analysis" by VEIC (October 2020).
[28] Public Act 21-53 "An Act Concerning Energy Storage" and Docket No. 17-12-03RE03
[29] "Connecticut Powers into the Lead with Breakthrough Customer Battery Program" by the Clean Energy Group (August 2021)

storage. As installed costs for residential solar continue to decline, innovation in consumer finance inspired by green banks,[30] in collaboration with private capital will continue, making residential solar more affordable and accessible to all.

APPENDIX I

Data

Table 1. Comparison of Residential Solar Deployment in the Northeast (2016-2020)[31]

	CT	MA	ME	NH	NJ	NY	RI	VT
Installed Capacity (MW)	311.2	527.7	29.5	63.2	736.0	716.7	53.8	49.5
Cumulative Watts/Capita	87.3	75.9	21.9	46.5	82.9	36.8	50.8	79.3

Table 2. Residential Solar Investment in Vulnerable Communities in Connecticut

Fiscal Year	Not Vulnerable	Vulnerable	Total	% Vulnerable
2012	$7,675,503	$2,226,008	$9,901,511	22%
2013	$27,476,228	$7,949,815	$35,426,043	22%
2014	$51,493,616	$22,622,847	$74,116,463	31%
2015	$137,616,423	$76,361,115	$213,977,538	36%
2016	$117,360,251	$100,049,058	$217,409,309	46%
2017	$53,452,499	$66,338,590	$119,791,089	55%
2018	$66,334,127	$80,613,565	$146,947,692	55%
2019	$93,396,871	$102,485,609	$195,882,480	52%
2020	$105,333,570	$101,566,914	$206,900,484	49%
2021	$99,770,722	$80,491,746	$180,262,468	45%
Total	**$759,909,811**	**$640,705,265**	**$1,400,615,076**	**46%**

Table 3. Connecticut Green Bank Financing Programs to Support Residential Solar

Product	Total Investment ($MM's)	Private Investment ($MM's)	Green Bank Investment ($MM's)	Projects	Installed Capacity (MW)	Energy Costs Avoided[32] ($MM's)
CT Solar Loan[33]	$9.1	$8.6	$0.5	279	2.2	-
CT Solar Lease[34]	$46.3	$36.8	$9.5	1,189	9.6	$3.9
Solar for All[35]	$118.3	$96.9	$21.5	4,292	28.5	$4.0
Total	**$173.7**	**$142.3**	**$31.5**	**5,760**	**40.3**	**$7.9**

[30] "Connecticut's Solar Lease Program Demonstrates High Borrower Fidelity" by Bethany Speers (October 2012)

[31] Solar data from "U.S. Solar Market Insight" (March 2021)

[32] To date, through June 30, 2021

[33] In collaboration with Sungage, a solar loan program that graduated in 2015. Resulted in Sungage receiving a $100 MM pool of capital to originate residential solar loans across the U.S. based on the success in Connecticut.

[34] In collaboration with US Bank, Webster Bank, and KeyBank, a solar lease program that graduated in 2016. The predecessor to the CT Solar Lease was done in 2007-2011 by the Connecticut Clean Energy Fund as the first public-private tax equity-backed residential solar lease program in the U.S. and recognized by CESA with the State Leadership in Clean Energy (SLICE) Award in 2012.

[35] In collaboration with PosiGen, a solar and energy efficiency lease program targeted at LMI families and communities of color

ATTACHMENT C
Letter from Congressional Leaders to Administrator Regan

Congress of the United States
Washington, DC 20515

September 9, 2022

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Regan,

As the lead sponsors of the *National Climate Bank Act* (S. 283) and the *Clean Energy and Sustainability Accelerator Act* (H.R. 806) in the Senate and House of Representatives, we worked to include the Greenhouse Gas Reduction Fund (GHGRF) in the *Inflation Reduction Act* (Pub. L. 117-169) to provide resources to fulfill the mission of our legislation. Therefore, we write to encourage you to rapidly invest maximum funding from the GHGRF to capitalize a national climate bank that will support an equitable transition to a clean-energy economy and fund a nationwide network of state and local climate banks, which will turn the challenge of climate change into an opportunity for prosperity. As the GHGRF intentionally dedicates $8 billion to the "purposes of providing financial assistance and technical assistance in low-income and disadvantaged communities," the swift and successful disbursement of this funding will further the Biden administration's environmental justice goals, which you have been a strong advocate for within the Environmental Protection Agency (EPA). An effective national climate bank program will build generational climate-friendly wealth in communities that have the least access to clean energy capital and are most at risk from environmental harm.

We have long championed the concept of a single, independent, non-profit national climate bank that would maximize the leveraging of private capital investment, ensure the efficient distribution of funds within a growing green bank network, and create opportunities for large scale, transformational investments—particularly in environmental justice communities – and it is critical to the country's ability to reduce emissions of GHGs at the levels called for by the President.. The GHGRF is poised to accomplish that goal as it intentionally includes as an eligible recipient a nonprofit organization that:

> *"is designed to provide capital, leverage private capital, and provide other forms of financial assistance for the rapid deployment of low- and zero-emission products, technologies, and services; does not take deposits other than deposits from repayments and other revenue received from financial assistance provided using grant funds under this section; is funded by public or charitable contributions; and invests in or finances projects alone or in conjunction with other investors,"*

The provision also instructs eligible recipients to use grant funding to make direct investments which:

> *"provide financial assistance to qualified projects at the national, regional, state, and local levels; prioritize investment in qualified projects that would otherwise lack access to financing; and retain, manage, recycle, and monetize all repayments and other revenue received from fees, interest, repaid loans, and all other types of*

financial assistance provided using grant funds under this section to ensure continued operability."

Furthermore, the GHGRF requires recipients to make indirect investments to promote climate finance efforts throughout the country by:

> *"provid[ing] funding and technical assistance to establish new or support existing public, quasi-public, not-for-profit, or nonprofit entities that provide financial assistance to qualified projects at the State, local, territorial, or tribal level or in the District of Columbia, including community- and low-income-focused lenders and capital providers."*

A national climate bank is uniquely structured to meet all of the requirements of the GHGRF. It will bring together a comprehensive, diverse, and inclusive network of state and local financing entities in the public and non-profit sectors. We have championed the effectiveness of a standalone national institution that is authorized to capitalize both current and newly formed state and local banks, along with all other entities eligible to receive indirect assistance through our legislation. This approach allows these subnational entities, nonprofits, and lenders to make their own investments tailored to the needs of their communities, with the financial and technical support of the national climate bank. In the aggregate, a national climate bank and its network is expected to produce $10 billion of public-private investment over a decade for every $1 billion in initial capital.[1]

The GHGRF will provide a national climate bank with the funding it needs to immediately begin investing in qualified projects that would otherwise lack access to financing on favorable terms. There are $200 million worth of projects targeting low-and-moderate income communities, nonprofits, public schools, and affordable housing that are shovel-ready, in addition to the $21 billion in clean technology projects that are in the larger pipeline.[2] With so many projects ready to go, it is vital that we establish an organized central entity that is able to fund qualified large-scale projects and coordinate downstream financial entities to implement a system that efficiently reduces emissions and supports disadvantaged communities in those efforts.

As a centralized institution, a national climate bank will reduce costs for financial entities, attract private capital investments, and support a more efficient project-financing pipeline, while also seeding and providing technical support to state and local climate banks, minority depository institutions, community development financial institutions (CDFIs), and other nonprofits. Green banks have already proven successful on the local and state level, and a national bank would support those efforts while providing additional coordination for larger projects at the regional and national level. Green banks have been established or are being considered for development in 37 states and in Washington, DC, and are supported by governors of both parties.[3] A national climate bank will optimize our federal investment and provide a unified national approach to climate mitigation, while supporting state and local banks' abilities to meet their individual needs. A green bank network will be able to rise to the challenge that climate change presents with the leadership and guidance of a national climate bank.

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[1] "Supporting a Clean Energy Recovery: Jobs and Emissions Impacts of a $100 Billion Clean Energy and Sustainability Accelerator" (Vivid Economics Limited, December 18, 2020).

[2] "National Green Bank: Project Ready Day One - Conversations with the American Green Bank Consortium," July 7, 2021, http://coalitionforgreencapital.com/wp-content/uploads/National-Green-Bank-Project-Ready-Day-One.pdf.

[3] Nevada's green bank, the Nevada Clean Energy Fund, was signed into law by Republican Governor Sandoval.

To carry out the requirement that 40 percent of funds within the GHGRF be dedicated in support of environmental justice communities, a national climate bank can use trusted community partners, such as local green banks and CDFIs, to target investments within disadvantaged communities. These partnerships will allow the benefits of clean technologies to reach communities that have been left behind for too long. Moreover, the national climate bank will lower costs for all consumers, including low-to-moderate income households, by deploying tested financial instruments that will reduce energy consumption, costs, and emissions for everyday activities.[4]

Capitalizing a national climate bank will provide long-term, comparatively low-cost solution to reduce our reliance on fossil fuels and greenhouse gas emissions, while decreasing families' energy bills and creating new clean energy jobs. As authors of the legislation upon which the GHGRF is based, we urge you to maximize the impact of these funds through the capitalization of a national climate bank which will have the capacity to make direct investments in qualified projects at the national and regional levels and provide funding and technical assistance to state and local financing entities. We look forward to working together as EPA establishes the implementation procedures for the GHGRF, per the statute and intent of the *Inflation Reduction Act*, and thank you for your efforts on this historic project.

Sincerely,

Chris Van Hollen
United States Senator

Edward J. Markey
United States Senator

Debbie Dingell
Member of Congress

[4] The Climate Access Fund of Maryland is developing, managing, and financing a community solar array on the rooftop of the Henderson-Hopkins School in Baltimore, MD. This project will be open to 175 low-to-moderate-income households in East Baltimore, and will save each subscriber an estimated $200 annually on electricity.

ATTACHMENT D

Connecticut Green Bank Comments provided to EPA on the GHGRF (December 5, 2022)