Connecticut Fund for the Environment
Save the Sound®

Testimony of Connecticut Fund for the Environment
Before the Committee on Energy & Technology

In Support of if Significantly Modified
***S.B. No. 9,* AN ACT CONCERNING CONNECTICUT'S ENERGY FUTURE**

Submitted by Claire Coleman
Climate & Energy Attorney
March 1, 2018

Connecticut Fund for the Environment (CFE) is a non-profit environmental organization with over 4,700 members statewide. The mission of CFE, and its bi-state program Save the Sound, is to protect and improve the land, air, and water of Connecticut and Long Island Sound. We use legal and scientific expertise and bring people together to achieve results that benefit our environment for current and future generations.

Dear Senators Winfield and Formica, Representative Reed, and members of the Energy and Technology Committee:

I. General Comments on SB 09

CFE appreciates the hard work of DEEP and the Governor's office to create legislation that sets forth strategies to mitigate climate change and meet the state's greenhouse gas (GHG) reduction policies. While CFE shares DEEP's climate pollution reduction goals, we believe SB 09 falls short of setting forth the ambitious policies needed to achieve these climate goals, and some of the policy mechanisms proposed in SB 09 – particularly the proposal to eliminate net metering – are actually counter to these stated goals. CFE's positions on SB 09 include:

- **RPS Extension** (Section 1): **CFE supports** the proposed extension and increase to Connecticut's RPS, but believes it should be strengthened to 50% Class I renewables by 2030 to keep us on track to meet our GHG reduction mandates, and to deliver greater economic and health benefits to the state. CFE opposes reducing the alternative compliance payment to four cents per kilowatt hour.

- **Net Metering** (Section 4 & 5): **CFE strongly opposes** the proposal to eliminate net metering and transition to a buy-all sell all system with a fixed rate for residential solar, which will cripple the in-state solar growth needed to meet our climate goals. Net metering is a proven policy that has helped families' and small business owners' lower energy bills. Any changes to Connecticut's net metering program must protect the right to consume and store self-generated clean energy and preserve the future of smart homes with storage and energy management capabilities.

- **Energy Efficiency Mandates** (Section 6): **CFE supports with revisions.** CFE supports setting annual minimum energy efficiency savings mandates, but these targets should be stronger. Energy efficiency programs that lower energy use save consumers money on electric bills, save lives by reducing alliance on fossil fuels, and grow the state's economy. Connecticut currently lags behind neighboring states like Rhode Island and Massachusetts on our energy efficiency investments, and as a result we have less bill savings. Section 6 of SB 09 should double the annual savings levels from the proposed 1.6 million MMBtu to a 3% annual savings level for electric energy efficiency and an additional natural gas energy efficiency annual savings level of 1.2%. Massachusetts has demonstrated that such savings targets are achievable and also lower total electric costs.[1]

- **Energy Efficiency Funding Investments** (Sections 7 & 8): **CFE opposes unless modified.** CFE supports efforts to ensure future ratepayer contributions toward energy efficiency are protected, but DEEPs proposal needs modification. Since energy efficiency investments result in total electric bill savings as well as myriad health, economic, and environmental benefits, the proposed increases to the funding through the Conservation Adjustment Mechanism (CAM) from three to six mils should be in addition to, not in place of the current 3 mil ratepayer charge. Additionally, CFE opposes changing to a procurement process for choosing projects. Such a change would create uncertainty for the energy efficiency business community, and reduce transparency around the selection of energy efficiency programs. To ensure projects have been fairly evaluated based on the most up-to-date cost-effectiveness standards and support the state's overall energy efficiency and emission goals,[2] the multi-year Conservation and Load Management plan process – which includes beneficial input and oversight by the energy efficiency board – should not be replaced with a procurement process.

- **Clean Energy (Green Bank) Funds** (Section 9): **CFE supports** the minimal, time-limited ratepayer contribution increase through 2025 that will help remedy the devastating raids of Green Bank funds in 2017 budget, and allow the CT Green Bank to continue supporting critical clean energy programs and become self-sustaining without future ratepayer support.

II. Detailed Comments on Two Critical Sections of SB 09

A. CFE Supports RPS Extension but Recommends Strengthening Targets to 50% by 2030.

The state's Renewable Portfolio Standard (RPS)—which requires electric utilities to provide an increasing percentage of their electricity from renewable sources—is the foundation for clean energy markets and a proven tool for supporting renewable energy development. By setting targets for renewable energy generation, RPS policies diversify our electric supply, spur

[1] *See* Acadia Center, *Connecticut: Pathways to 2030*, 2017.

[2] *See* Draft Comprehensive Energy Strategy at 18, recommending DEEP reform its cost-effectiveness test for energy efficiency to align with the National Standard Practice Manual issued by the National Efficiency Screening Project in 2017. *See also* https://nationalefficiencyscreening.org/national-standard-practice-manual/.

local economic development, and save consumers money in the long run.[3] The RPS drives investments in renewables by guaranteeing that there is a market for that energy as well as by helping those renewables become more competitive with fossil fuel-based energy that currently has a market advantage.[4] Because RPS policies create competition amongst renewable technologies, they incentivize cost reductions and technology improvements in renewables. Solar is a prime example of this effect. As numerous policies and programs in Connecticut and elsewhere have driven the deployment of more photovoltaic installations, the cost of solar energy has declined significantly.[5]

Strong RPS programs are fundamental to renewable growth in Connecticut. According to a report published by the Lawrence Berkeley National Laboratory assessing the status of state RPS programs thus far, **62% of growth in US non-hydro renewable generation and 58% of all new renewable energy capacity since the year 2000 was developed to meet RPS demands**.[6]

Recent studies show that **cumulative RPS benefits do outweigh the costs, even according to conservative estimates.**[7] To summarize, the article states in relevant part that:

> "[T]he analysis suggests that, even under conservative assumptions, the benefits of RE used to meet RPS demand growth will exceed the costs. Under the Existing RPS policy scenario, the net cost to the electric system over the 2015−2050 period is estimated to be no greater than $31 billion, and could be negative in the case of higher- than-expected natural gas prices. By comparison, the *lower-bound* estimates of human health benefits associated with increased air quality total at least $48 billion, plus an additional $37 billion in benefits from reduced climate damages. Under the High RE scenario, the lower-bound estimates of air quality benefits ($303 billion) and climate demand benefits ($132 billion) again exceed the upper-bound cost estimate ($194 billion). In both scenarios, additional benefits associated with reduced water usage, which are quantified in physical but not monetary units within our analysis, add further to the benefits tally and may be particularly salient in water-stressed regions."[8]

---

[3] CT DEEP, *Taking Action on Climate Change, 2014 Progress Report*, available at http://www.ct.gov/deep/lib/deep/climatechange/ct_progress_report_2014.pdf.

[4] Union of Concerned Scientists, *How Renewable Electricity Standards Deliver Economic Benefits* (May 2013), http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_energy/Renewable-Electricity-Standards-Deliver-Economic-Benefits.pdf.

[5] Galen Barbose and Naim Darghouth, Lawrence Berkeley National Laboratory, *Tracking the Sun IX, The Installed Price of Residential and Non-Residential Photovoltaic Systems in the United States* (Aug. 2017), https://emp.lbl.gov/sites/all/files/tracking_the_sun_ix_report_0.pdf.

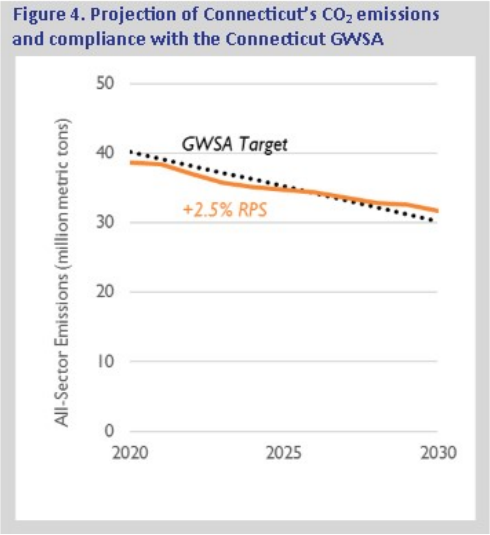
[6] Galen Barbose, *U.S. Renewables Portfolio Standards-Overview of Status and Key Trends*, Lawrence Berkeley Nat'l Laboratory-Enviro. Energy Tech. Division (powerpoint presentation, Nov. 5, 2015), https://www.cesa.org/assets/2015-Files/RPS-Summit/Galen-Barbose-11.5.15.pdf (hereinafter "Berkeley Lab Report").

[7] David Roberts, *The most effective clean energy policy gets the least love,* Vox.com (Oct. 21, 2017) https://www.vox.com/energy-and-environment/2017/9/27/16365290/renewable-energy-standards-are-working

[8] *Id.* at 9 (emphasis added).

A strong RPS will also bring economic benefits to the state. The Governor's Council on Climate change prepared analysis showing that a 50% RPS by 2030 had the highest level of increase in revenues from the electric sector to support critical state programs (as compared to scenarios with lower renewable requirements).[9]

An RPS for Connecticut that increases by 3% per year starting in 2021, reaching a level of 50 percent by 2030 will create more renewable energy while simultaneously creating jobs and reducing the negative impacts of climate pollution. As the analysis conducted by Synapse Energy Economics demonstrates,[10] even with a 2.5% increase in the RPS, consumption-based emissions in 2030 will exceed the target by 3 percent. Thus, the Synapse RPS demonstrates that even an annual RPS increase of 2.5%, reaching a level of 40 percent by 2030, while putting Connecticut closer to a trajectory for meeting the 2050 GWSA reduction target, still is not strong enough to guarantee that Connecticut is on track to meet its legally required reductions (as Synapse finds the cap is still exceeded in 2028, 2029 and 2030). Rapid electrification of the heating sector, the most challenging sector to decarbonize in Connecticut, would also be required to have any chance of meeting the 2030 GHG-reduction target or longer-term 2050 target.



Synapse Economics, Inc., RPS Analysis 1

SB 09 should therefore be changed to include a target of 50% Class I renewables to ensure Connecticut stays on track to meet its GHG-reduction mandates and reaps the economic, environmental, and health benefits of a stronger RPS.

---

[9] *See* GC3 Slides, Oct. 19, 2017, *http://www.ct.gov/deep/lib/deep/climatechange/gc3/gc3_10_19_17/gc3_meeting_10_19_2017.pdf; See also* http://www.ct.gov/deep/lib/deep/climatechange/gc3/gc3_10_19_17/kresowik_(sierra_club)_11_8_17.pdf

[10] Synapse Energy Economics, *Increasing the Connecticut RPS* (Sept. 25, 2017), available at http://www.synapse-energy.com/sites/default/files/Increasing-the-Connecticut-Renewable-Portfolio-Standard-17-070_0.pdf.

i. CFE Opposes the Proposed Reduction of the RPS Alternative Compliance Payment.

CFE opposes the reduction of the alternative compliance payment (ACP) levied on utilities that do not meet the Class I Renewables RPS requirement from six and seven-tenths cents per kilowatt hour to four cents per kilowatt hour. Currently, all of Connecticut's neighboring states (*e.g.,* Maine, Massachusetts, and Rhode Island) have higher ACP rates for Class I renewables,[11] which makes it harder for Connecticut to compete for Class I Renewable Energy Credits (RECs) sold in a regional market.[12] Lowering the ACP further would only exacerbate Connecticut's uncompetitive position. CFE recognizes REC prices for renewables have dropped significantly, but they are also subject to increases in the future, particularly given the recently announced tariffs on solar panel imports. If the legislature were to change the ACP, CFE recommends the ACP be adjusted annually based on up-to-date REC pricing data to ensure a steady but adjustable cost gap between ACP rates and REC purchase prices. For example, the ACP could be set at 10% above REC purchase prices each year, as is done in New York.[13] This approach would ensure that regardless of REC price fluctuations, ACP rates would not be arbitrarily high, but would always remain higher than REC costs at a set differential. This approach would help ensure that REC market compliance remains the most cost-effective option for suppliers.

ii. CFE Supports Diverting ACP Funds to Support Energy Efficiency Programs.

While not included in current version of SB 09, should any changes be made the ACP, CFE believes it is appropriate to direct these funds to support energy efficiency programs that were gutted as a result of the 2017 Budget.[14] While the amount each ratepayer individually receives from the ACP refund is very small (CFE estimates under three dollars in 2014), the aggregate value of the ACP funds ($7,860,956 in 2014) invested in energy efficiency programs would have greater benefit for ratepayers and greater impact on our renewable economy. Directing the funds to energy efficiency programs that have a proven track record of creating jobs and growing deployment of renewables while reducing CO2 emissions would be a far smarter investment for Connecticut.

---

[11] *See* DSIRE: Database of State Incentives for Renewables & Efficiency, *Renewables Portfolio Standard*, available at http://programs.dsireusa.org/system/program?type=38&.

[12] DEEP, Restructuring Connecticut's Renewable Portfolio Standard (2013), http://www.ct.gov/deep/lib/deep/energy/rps/rps_final.pdf.

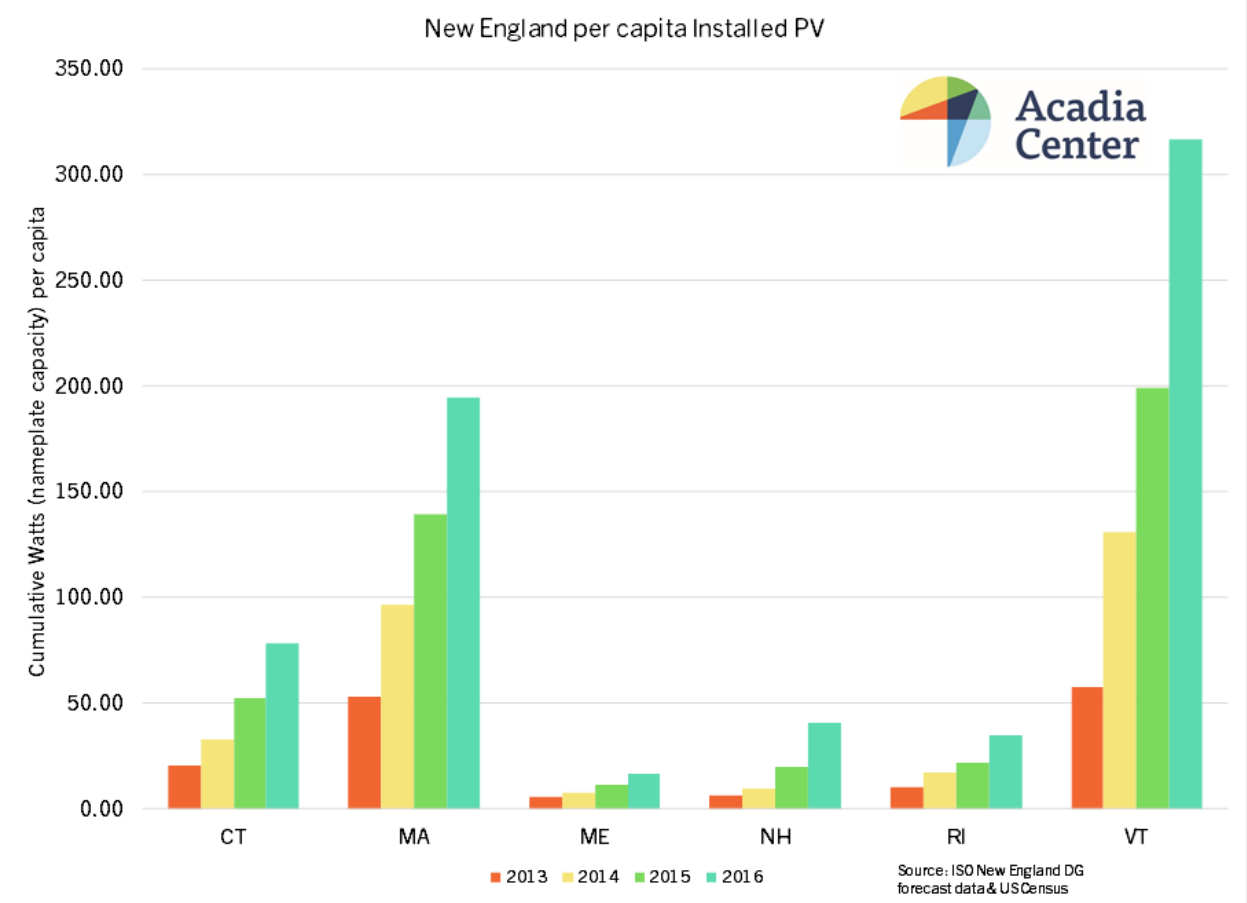
[13] http://programs.dsireusa.org/system/program/detail/5883

[14] *See* Public Act 13-303. Prior to 2013, the ACP funds were transferred to the state's Clean Energy Fund (now known as the Connecticut Green Bank) for the development of Class I resources. In 2013, the law was amended to rebate these payments to ratepayers instead.

B. CFE Strongly Opposes the Proposed Elimination of Net Metering and $35 Million Annual Cap on Behind-the-Meter (BTM) Solar in Sections 4 & 5

Connecticut's net metering program is not broken, and should not be eliminated. CFE recognizes that debates around appropriate net metering compensation structures are taking place in various jurisdictions across the country. But there is also extensive evidence that cost-shifting concerns have been overstated and unfounded, particularly in states like Connecticut with low distributed solar penetration levels. For example, in January 2017, the Lawrence Berkley National Laboratory published a report concluding that "… for the overwhelming majority of utilities, the current PV penetration levels are far too low to result in any discernable effect on retail electricity prices, even under the most pessimistic assumptions about the value of solar and generous assumptions about compensation provided to solar customers (e.g. full [net metering] with volumetric rates)."[15]

Acadia Center analysis shows that Connecticut lags behind Massachusetts and Vermont in the amount of installed PV per capita:



[15]Barbose G., *Putting the Potential Rate Impacts of Distributed Solar into Context*, January 2017, Lawrence Berkley National Laboratory, at 8, "Much debate has occurred around the existence and size of any cost-shifting from distributed solar, particularly for solar compensated via net energy metering (NEM) with volumetric retail rates." https://emp.lbl.gov/sites/all/files/lbnl-1007060.pdf.

DEEP's Comprehensive Energy Strategy reports that in 2016, behind the meter solar represented about 1.5% of load, and is expected to increase to between 3.8% and 4.5% of load by 2020.[16] Because Connecticut's BTM solar penetration rate is relatively modest, concerns about cost-shifting are overstated and unfounded.

Similarly, the Brookings Institute reviewed several solar valuation studies by regulators in over 10 states, and concluded that many show that net metering benefits all utility customers,[17] in contradiction to cost-shifting arguments pushed forward by utilities. Thus, as the Brookings report cautioned, "[n]et metering --- frequently benefits all ratepayers when all costs and benefits are accounted for, which is a finding state public utility commissions, or PUCs, need to take seriously as the fight over net metering rages in states."

DEEP's proposed elimination of net metering – particularly before engaging in any rigorous or transparent evaluation or quantification of the full range of benefits and costs of distributed generation technologies like other states have done[18] – is both premature and misdirected.

The elimination of net metering in other states has had devastating impacts on solar deployment.[19] The state of Nevada reversed its decision to eliminate net metering after its solar growth came to a halt. Nevada lost more than 2,600 jobs after regulators eliminated net metering in late 2015. Major solar firms left the state.[20] This is not the path that Connecticut wants to emulate.

CFE opposes DEEP's proposal to eliminate net metering in SB 9 and replace it with a two-meter or "buy-all, credit-all" model, which would bill a customer's gross consumption and credits a customer's gross production at separate rates. This is in contrast to net metering, where a customer can reduce the amount of energy purchased from the grid when the energy is produced and consumed directly on-site. Home and business solar users should be allowed to utilize the energy they produce onsite first to offset their utility usage, and then export any excess energy they wish. Solar users have property rights that should allow them to keep the unused solar power they make during the day, store it in a battery, and use it at night or whenever they please.

---

[16] Draft CES at 13.

[17] M. Muro and D. Saba, Rooftop Solar: *Net metering is a Net Benefit*, Brookings Institute (May 23, 2016), https://www.brookings.edu/research/rooftop-solar-net-metering-is-a-net-benefit/.

[18] North Carolina Clean Energy Technology Center, *The 50 State of Solar: Q2 2017 Quarterly Report*, July 2017, https://nccleantech.ncsu.edu/the-50-states-of-solar-report-q2-2017-updates-released/ (reporting that in the second quarter of 2017, Maine, Montana, Nevada, and New Hampshire each took legislative or regulatory action toward conducting distributed generation valuation or net metering cost-benefit studies, while stakeholders in Arkansas and Utah recommended completion of studies prior to adopting significant changes within ongoing net metering dockets.

[19] https://www.nytimes.com/2017/07/08/climate/rooftop-solar-panels-tax-credits-utility-companies-lobbying.html.

[20] https://www.desmogblog.com/2016/05/09/we-were-booming-and-now-we-re-dead-how-nevada-s-solar-industry-bright-spot-turned-dark; https://www.npr.org/sections/thetwo-way/2017/06/07/531952407/solar-firms-plan-to-return-to-nevada-after-new-law-restores-incentives.

While Connecticut's solar penetration levels are still low enough so that retail-rate net metering does not impose costs on all ratepayers, legislators interested in enacting reforms to the net metering program to improve the fairness and accuracy of compensation for distributed generation solar, can make changes while preserving principles of net metering. Other states like New Hampshire, Massachusetts and Rhode Island have preserved net metering and developed alternative net metering tariffs by fairly evaluating the costs and benefits of consumer generated facilities.[21] Any changes to Connecticut's net metering program must similarly protect the right to consume and store self-generated clean energy and preserve the future of smart homes with storage and energy management capabilities.

CFE supports alternative net metering and solar incentive reform proposals put forward by Acadia Center. Specifically, CFE supports transitioning to a net metering tariff (for excess generation that is exported to the grid, and protects the right to self-consumption) established by PURA similar to New Hampshire's framework established in 2016, which included consideration of: the benefits and costs of customer-sited facilities; an avoidance of unjust and unreasonable cost shifting; rate impacts on all customers; and alternative rate structures, such as time-of-use based tariffs.[22] CFE also supports Acadia's proposal to create a new solar incentive program similar to the SMART program in Massachusetts or the Renewable Energy Growth program in Rhode Island, which generally guarantee overall payment levels for a 10-20-year period for different project types, which are adjusted based on size and type of project, and retain the right to self-consumption while using a second meter to calculate incentive payments due to customers (balancing compensation by reducing incentive portion of compensation if net metering compensation increases).[23]

A Massachusetts' style net metering and solar incentive structure would also allow for community shared solar and virtual net metering to compete for solar projects, as included in the proposed tariff structure in SB 09. CFE strongly supports allowing for more shared solar and virtual net metering in Connecticut. Making legislative changes to allow for development of shared solar and use of virtual net metering would create electric bill savings for consumers and provide support for more job growth in Connecticut. Installation of renewable energy facilities primarily utilizes local workers, so investment dollars are kept in our communities.[24] A January 2017 report by U.S. Department of Energy and BW Research Partnership estimates that together energy efficiency and solar account for 36,875 jobs in Connecticut.[25] The report also found that with 2,927 jobs, solar makes up the largest segment of Connecticut's electric power generation

---

[21] For overview of state net metering policies *see* http://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx. See also https://www.mass.gov/service-details/development-of-the-solar-massachusetts-renewable-target-smart-program (Mass.); http://programs.dsireusa.org/system/program/detail/287 (Rhode Island).

[22] See Section XVI: http://www.gencourt.state.nh.us/rsa/html/xxxiv/362-a/362-a-9.htm.

[23] Acadia Center, Principles on Net Metering and Solar Incentive Reform (Feb. 2018).

[24] Union of Concerned Scientists, *How Renewable Electricity Standards Deliver Economic Benefits* (May 2013), available at http://awea.files.cms-plus.com/FileDownloads/pdfs/UCS%20Renewable-Electricity-Standards-Deliver-Economic-Benefits.pdf.

[25] U.S. Department of Energy and BW Research Partnership, *U.S. Energy and Employment Report* (Jan. 2017), https://www.energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report_0.pdf.

workforce.[26]

Recognizing the myriad benefits of shared solar programs, at least twenty five states have at least one community solar project in operation, and twelve states and the District of Columbia have specifically adopted shared solar policies and programs.[27] Clean energy investors are putting their money into these states while Connecticut falls behind. Establishing a full-scale shared solar program will also be good for Connecticut's overall economy. Vote Solar recently issued a report showing that a 200-megawatt shared solar program would deliver more than 2,500 new jobs, $370 million in local economic benefits and $80 million in property taxes in Connecticut.[28] Increasing in-state development of renewables through shared solar will mean more high-quality jobs and economic growth in Connecticut.

However, given that SB 09 proposes to limit annual spend on all behind-the-meter solar (residential, commercial, shared, virtual) to $35 million a year[29] – CFE does not see how meaningful shared solar opportunities could result from the proposal as set forth in SB 09. Additionally, shared solar projects – which enable renters, low-income individuals, and small business to have direct access to clean energy and resulting bill savings – should not have to compete against grid scale solar. CFE will therefore incorporate more details about the value of a statewide shared solar program and specific program components that are critical to ensuring access to clean energy by small businesses and low-income residents in our testimony supporting legislation to create a statewide, full-scale shared solar program, which we hope will be considered by the Committee at one of the upcoming hearings.

* * *

Thank you for your time and consideration of this testimony.

Respectfully submitted,

/s/ Claire Coleman

Claire Coleman
Climate & Energy Attorney
Connecticut Fund for the Environment
ccoleman@ctenvironment.org
(203) 787-0646 ext. 122

[26] U.S. Department of Energy, *2017 US Energy and Jobs Report, State Charts* at 38, available at https://energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report%20State%20Charts%202_0.pdf.

[27] Solar Energy Industries Association, *Distributed Solar: Shared Renewables/Community Solar, http://www.seia.org/policy/distributed-solar/shared-renewablescommunity-solar* (last viewed July 19, 2017).

[28] Vote Solar, Community Solar: Ready to Work for Connecticut, Jobs & Economic Benefits Report (June 2017), available at https://votesolar.org/files/2514/9754/9863/CT_JEDI_Report_June_2017.pdf.

[29] The $35 million annual cap on the combined purchase of energy and RECs by utilities will artificially and unnecessarily stunt solar growth in Connecticut. Connecticut needs to increase – not scale back – the amount of distributed solar that is installed in the state.