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PUBLIC HEARING ON

Bill 22-904

“Clean Energy DC Omnibus Amendment Act of 2018”

Before the Committee on Transportation & the Environment

Councilmember Mary Cheh, Chairwoman

Testimony of Yesim Sayin Taylor

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John A. Wilson Building, Room 500

Good morning, Chairwoman Cheh and the members of the Committee of the Whole. My name is Yesim Sayin Taylor and I am the Executive Director of the D.C. Policy Center, an independent, nonpartisan think tank focused on the District's economy and demography, and with a mission of advancing policies for a strong and vibrant economy in the District of Columbia. I thank you for the opportunity to testify on Bill 22-904, Clean Energy DC Omnibus Act of 2018.

Given the inaction at the federal level, city and state governments have a responsibility to act in order to mitigate climate change. In acting, however, policymakers should continuously weigh benefits of their policy proposals against costs, and favor, as much as possible, policies with high impacts and low costs over policies with high costs and low impacts. Bill 22-904 can be improved upon when viewed from this cost-benefit lens.

Renewable Energy Portfolio Standard (RPS) Changes

In 2017, the estimated demand in DC for renewable energy that must be fulfilled by renewable sources or a Renewable Energy Credit (REC) was 1,656 gigawatt hours.¹ The same year, the cost of complying with the RPS requirement was \$42.7 million (\$16.1 to purchase RECs and \$26.6 in alternative compliance payments).² Under Bill 22-904's 100 percent renewable goal by 2032, the estimated demand for renewable energy will increase twice as fast compared to its current path to reach 10,500 gigawatt hours by 2032. This change will put greater pressure on compliance costs. The limitation of the geographic region for RECs to PJM will further aggravate these pressures by immediately wiping away 10 percent of the capacity currently certified for RPS eligibility.³ And this geographical limitation will have little or no impact of District's clean air goals.

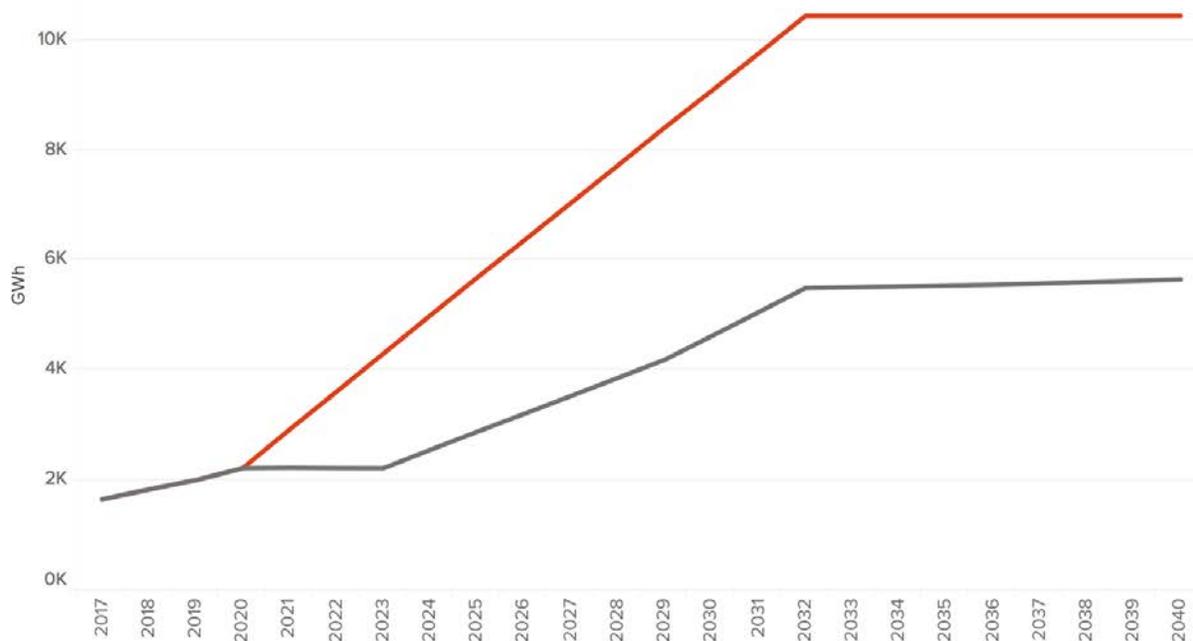
¹ Barbose, Galen L. (2017). U.S. Renewables Portfolio Standards: 2017 Annual Status Report. LBNL-2001031.

² DC Public Service Commission (May 1, 2018). Report on the Renewable Energy Portfolio Standard for Compliance Year 2017. Available at <https://dcpsc.org/PSCDC/media/PDFFiles/NaturalGas/Report-on-REPS-for-2018-043018-final.pdf>

³ These one-over states—Alabama, Arkansas, Georgia, Iowa, Mississippi, Missouri, New York, South Carolina, and Wisconsin—collectively account for 903.1 MW capacity out of the 8,960 certified in the District.

Demand Projections

(Total amount of renewable electricity generation or RECs required to meet RPS targets annually)



Source: Current demand projections from Galen Barbose, Lawrence Berkley National Laboratory, based on [Barbose, Galen L. U.S. Renewables Portfolio Standards: 2017 Annual Status Report](#), 2017. LBNL-2001031. Data available at <http://eta-publications.lbl.gov/sites/default/files/rps-compliance-data-july-2017.xlsx>. Updated on July 18, 2017. Projections estimates under the proposed bill by the D.C. Policy Center staff.

■ Current RPS
■ Proposed RPS



What will this mean for consumers? Researchers at Lawrence Berkeley National Laboratory found that the RPS compliance costs, as a percentage of retail electricity bills, are the second highest in DC among all PJM states (after New Jersey) at 2.7 percent in 2015 (up from 1 percent in 2013).⁴ The same researchers estimate a wide distribution of potential rate impacts by 2030 under current RPS standards across the country (RPS = 26 percent of all energy) and show that retail rate impacts of RPS in DC could be somewhere from minus 5 percent to plus 27

⁴ Wisner, Ryan, Galen Barbose and Mark Bolinger (March 2017). [Retail Rate Impacts of Renewable Electricity: Some First Thoughts](#), LBNL-1007261. Available at <http://eta-publications.lbl.gov/sites/default/files/lbnl-1007261.pdf>. This amount excludes renewable integration and transmission costs. Other studies have consistently found positive retail rate impacts of RPS requirements but have produced estimates averaged over all RPS states. These can be as high as 8 percent (Wang, 2014). Bottom-up estimates (adding ACP to REC costs and distributing over consumers) find lower impacts of 1 to 2 percent.

percent. By taking the RPS requirement to 100 percent and limiting compliance options at the same time, Bill 22-209 will likely put us closer to the upper end of this estimate.⁵

Some will argue that the 100 percent goal can be easily reached through solar and wind given the rapid expansion in capacity. Indeed, the RPS requirements have lagged behind the recent growth in capacity. Between 2000 and 2016, renewable energy capacity grew by 283 Terawatts, or twice what was called for by all RPS requirements combined across the nation. In 2016, the RPS requirements were only 40 percent of total growth in renewables. The rapid growth in capacity (wind) in Texas and interior regions and solar expansion in California and southwest are behind this growth. However, within PJM, the surplus capacity beyond current RPS requirements is only 15 percent. Further, renewable energy generation must double in the PJM area by 2030 to meet the current RPS requirements and the current pipeline falls short of that growth.⁶ As such, the ability to purchase RECs from outside of PJM-proper has been an important element in mitigating even higher compliance costs.

To ease the potential acceleration of compliance costs while preserving environmental benefits, we recommend three changes to the RPS requirements under this proposal. **First, we recommend that the Committee adopt a more measured path towards the 100 percent renewable goal.** If enacted, Bill 22-904 will create the fastest path to 100 percent renewable in the country, ahead of California (100 percent clean energy by 2042) and Hawaii (100 percent by 2045). Because District is a very small share of the PJM, tightening the RPS at the proposed pace will not make a meaningful difference to supply growth or availability of RECs. If renewable energy sources do not grow fast enough or increases in RPS requirements overwhelm the supply in the PJM area, alternative compliance payments will go up, turning RPS into a pure tax on DC consumers.

Second, we recommend that the Committee expand, and not restrict, the geographical area from which suppliers could purchase credits. As I noted above, renewable energy

⁵ The cost cap in DC is 18.9 percent, but no supplier has applied to recover costs yet.

⁶ Barbose (2017).

production—especially wind—has grown significantly and has become cheaper outside the PJM area. While incentivizing clean energy production close home has some air quality benefits for DC, air quality concerns play little role in the distinction between PJM, PJM plus one state, or a greater area. As such, suppliers should have the option to purchase RECs from cheapest sources possible, since each REC has the same environmental attribute regardless of where it is produced. This will help reduce compliance costs.

Third, we recommend that the Committee consider including other means of meeting RPS requirements. In the District, the most important element of alternative compliance would be credits for energy efficiency. At present seven states allow for efficiency improvements as means of meeting RPS requirements, capped at some level to ensure that efficiency allowances do not compromise the goals to expand renewable energy capacity.⁷ The District already allows for cogeneration and thermal capacity to count towards RPS, but allowing for hydro and a small amount of nuclear power (both with no carbon emissions) could ease compliance, especially given the ambition to reach 100 clean energy by 2032.

Long-term Power Purchase Agreements

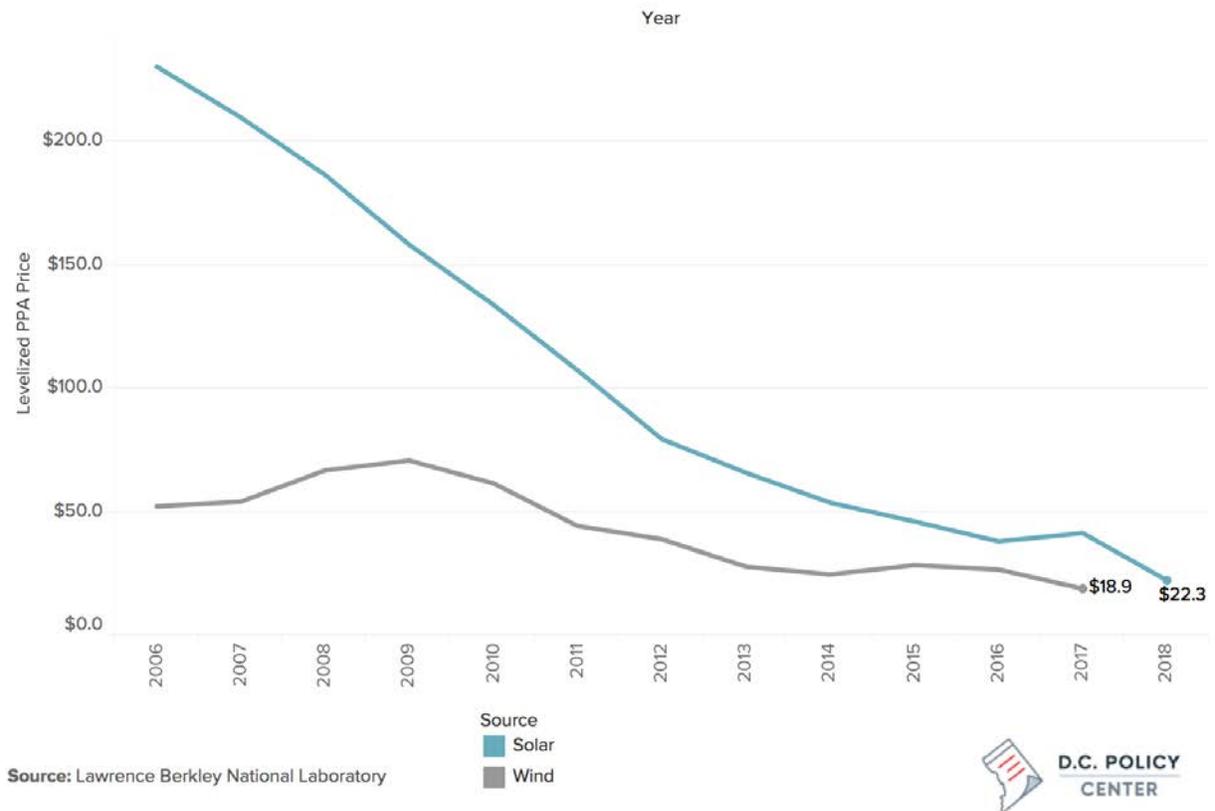
Bill 22-904 requires a substantial portion of electricity supply or RECs come from sources with which the supplier has a long-term Power Purchase Agreement. Specifically, the bill will restrict the purchase of 70 percent of the RECs to sources from which an electricity supplier has long term purchase agreements beginning 2022.⁸ By design, these PPAs must also be executed with generators in the PJM area, and therefore have the same unfavorable cost/benefit characteristics of the geographical limitations of RECs markets.

⁷ These include Michigan, Ohio, Pennsylvania, West Virginia, Connecticut, Nevada, and North Carolina. Hawaii allowed energy efficiency through 2015. For details, see Jenny Heeter and Lori Bird (November 2012). Including Alternative Resources in State Renewable Portfolio Standards: Current Design and Implementation Experience, National Renewable Energy Laboratory Technical Report NREL/TP-6A20-55979. Available at <https://www.nrel.gov/docs/fy13osti/55979.pdf>.

⁸ Additionally, it would require increasing shares of the Standard Offer Service to be supplied through a PPA with a Tier 1 Renewable Energy generation source. This share is set at 26 percent in 2020 and would increase to 80 percent by 2022.

In recent years PPA prices, levelized through the life of the contract, have been extremely competitive with the wholesale prices of electricity. Many who support the PPA requirement will cite these lower prices as an obvious benefit. However, this is due to significant cost reductions in PPA contracts outside of the PJM area—California and the Southwest for solar⁹ and the interior regions for wind.¹⁰ A sample of solar projects for PPAs in the Southeast region (which includes some of the PJM area) show a price of \$43 per MWh for 2017, and \$41 for 2016. Solar prices in Midwest are even higher. In wind, PJM has the third highest wholesale price (\$25 compared to, for example, under \$15 in Southwest Power Pool).

Levelized PPA price of Wind and Solar



⁹ Bolinger, Mark and Joachim Seel (September 2018). Utility-Scale Solar, Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States – 2018 Edition, Lawrence Berkeley Laboratory. Available at https://emp.lbl.gov/sites/default/files/lbnl_utility_scale_solar_2018_edition_report.pdf

¹⁰ U.S. Department of Energy (2017). Wind Technologies Market Report. Available at https://emp.lbl.gov/sites/default/files/2017_wind_technologies_market_report.pdf.

Requiring RECs be purchased through PPAs in the PJM area delivers no additional benefits to District's climate goals compared to using PPAs from any part of the country. The environmental attributes are the same regardless of location. Allowing PPAs from any part of the country, especially where their prices has been cheaper than wholesale prices may even eliminate the need to require them.

Other considerations in meeting clean energy goals

The District should consider other low-cost, high impact policies in addressing climate risks. **The most impactful and cost-effective intervention options are in transportation.** Over a third of carbon emissions in DC are due to transportation, especially from use of personal vehicles,¹¹ and especially from commuters. Investments in the Metro and changes to the bus system to make them reliable and viable alternatives to the use of private vehicles can be the single most cost-effective intervention in reducing the District's carbon footprint. Fleet-electrification and further supports for EV can also help.

The District should also re-think its local solar carve-out requirements. The solar carve-out for distributed generation is the costliest, and the lowest impact item in the District's current policy arsenal. While the levelized costs of utility-scale solar and wind have declined significantly to somewhere between \$30 and \$60 per MWh in 2017, the cost of residential rooftop varied between \$187 and \$319.¹² This is not to argue that the city should ban rooftop solar or stop offering financial support to these projects through its Green Bank. But it should not give it disproportionate resources to local solar initiatives at the expense of other consumers, when other, more cost-effective initiatives, can help the city get to its clean energy goals faster.

¹¹ U.S. Energy Information Administration (2018). Energy-Related Carbon Dioxide Emissions by State, 2000-2015. Available at <https://www.eia.gov/environment/emissions/state/analysis/>.

¹² Lazard's Levelized Cost of Energy Analysis, version 11. Available at <https://www.lazard.com/perspective/levelized-cost-of-energy-2017/>

Lastly, **the District should think of its clean air goals within its economic and demographic context.** Allowing for more density is the most straightforward way of reducing the city's per capita carbon footprint with the additional benefits of lower housing prices and lower utility costs.

Thank you for the opportunity to testify. I am happy to answer any questions you might have.