

Estimating the economic value-added of building 300 megawatts of Community Solar power in Montgomery County, Maryland

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The proposal under a Zoning Text Amendment (20-01) being considered by the Montgomery County Council would allow construction of roughly 300 megawatts (MW) of solar, in the form of small (up to 2 MW) Community Solar projects, on 1.9% of the County's Agricultural Reserve.

The economic bottom lines are that building 300 MW of Community Solar between 2020 and 2030 in MoCo would generate over \$82 million in new direct local spending in the county and the state, almost \$65 million in wages for project construction and operation, and almost \$15 million in state and local taxes.

Under Maryland's Community Solar pilot program, these projects would provide low-cost solar electricity to households that can't, or can't afford to, have solar on their own roofs; the Community Solar program specifically includes low- and moderate-income households, who are generally shut out of access to clean renewable solar energy.

However, beyond these benefits to intended recipients of the electricity, and the obvious benefit of replacing fossil fuel generated electricity with clean energy, there are important economic benefits to the state and local economy that come from building and operating solar. A recent study that looked at the economics of solar expansion in Maryland allows us to estimate the potential economic benefits of building the proposed 300 MW of Community Solar in Montgomery County. That study's findings allow calculation of a per megawatt value of ground-based solar that can be applied to the solar development proposed under ZTA 20-01.

Details of the analysis are below.

In November, 2020, the Center for Climate Strategies (CCS) carried out a Maryland-specific analysis of the additional economic value that would accrue to the state if the rate of utility-scale solar development was significantly increased, in line with the requirements of the state's 2019 Clean Energy Jobs Act (*Macroeconomic and Fiscal Impacts of Expanded Utility-Scale Solar Generation in Maryland*: <http://www.climatestrategies.us/library/library/view/1231>). To estimate this added value, CCS used economic methods to look at the difference in direct investment (including the local component of that spending), labor value (wages), and tax revenue between the amount of utility-scale solar capacity projected to be built under a "Business As Usual" (BAU) development scenario between 2020 and 2030 (768 MW), and an accelerated scenario achieving 50% of total required solar capacity (2,368 MW). These estimates allow calculation of a "per megawatt" value added for each category of value.

As noted below, larger utility-scale solar projects can achieve economies of scale compared to smaller (no larger than 2 MW) ground-based Community Solar projects. However, for both types of ground-based solar, the required material inputs, construction work, and labor are the same. Therefore, we can use the CCS "per megawatt" added value to project the economic benefits that would be

associated with the potential 300 MW of ground-based solar that would be (or, would have been) built under Montgomery County’s Zoning Text Amendment 20-01.

Table of value added of utility-scale solar under BAU and “accelerated” project development in Maryland (from Center for Climate Strategies study “*Macroeconomic and Fiscal Impacts of Expanded Utility-Scale Solar Generation in Maryland*”), with per MW values projected to 300 MW of ground-based solar in Montgomery County.

CCS Basic Calculation: Between 2020 and 2030...

- Projected Utility-scale solar capacity: BAU scenario 768 MW
- Projected Utility-scale solar capacity: Accelerated scenario 2,368 MW
- Projected increase in capacity +1,600 MW

Value Category	Total Added Value – 1,600 MW	Added Value per MW	Projected to Montgomery County – Value Added for 300 MW
Net Project Investment	\$1,744,182,291	\$1,090,114	\$327,034,200
Of which - Net Local Spending	\$441,883,693	\$276,177	\$82,853,100
Net State/Local Tax	\$77,613,133	\$48,508	\$14,552,400
Construction Phase Labor (wages)	\$304,000,000	\$190,000	\$57,000,000
Operational Phase Labor (wages)	\$37,198,875	\$23,249	\$6,974,700

Because the economies of scale realized by utility-scale solar projects, the per megawatt values of building smaller Community Solar projects would actually be higher than the straight projections for the CCS data. Therefore, these values can reasonably be considered a low-end estimate of the values that would accrue to Montgomery County from building 300 MW of ground-based Community Solar. The relative cost and economic value of utility-scale versus Community Solar will vary by region. Lazard’s latest estimates of per unit value of these two types of solar project have ground-based Community Solar costs at just over twice the value of utility-scale solar (<https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2020/>). However, Cyrus Tashikkori, President of Open Road Renewables and a leader of the Utility Scale Solar Energy Coalition, notes that the Lazard averages are heavily weighted by the very large utility-scale projects that are built in the midwest and west; utility-scale projects in the more densely settled mid-Atlantic and northeast tend to be much smaller. He suggests that a reasonable estimate of values for Community Solar in our region might be that they would be roughly 20% greater than the CCS utility scale estimates.