The Impacts of Prevailing Wage on the Total Costs of Maryland Renewable Energy Projects

BACKGROUND

Other than offshore wind, Maryland's renewable energy projects are not subject to prevailing wages or other types of labor standards. In contrast, many other states, including New York, Illinois, New Jersey, and Connecticut, have enacted comprehensive labor standards for renewable energy projects. It is time for Maryland to do the same. Toward that goal, the Baltimore-DC Building Trades retained Pinnacle Economics, Inc. to evaluate how a prevailing wage requirement for renewable energy projects in Maryland would affect total project costs. Pinnacle's analysis focused on: 1) utility-scale and commercial solar, 2) land-based wind, 3) geothermal, and 4) energy storage (batteries).

PREVAILING WAGE IMPACT

- Installation labor costs generally represent a small portion typically 10 percent or less of total renewable energy
 project costs (see Figure 1, left column). Equipment costs, including electrical and structural balance of system costs,
 primarily drive total project costs.
- Consequently, the impact of extending prevailing wage to renewable energy projects is de minimis. For example, a 30 percent increase in labor costs increases total project costs roughly between 2 and 3 percent, depending on the type and size of the system (see Figure 1, far right column and Figure 2).

FIGURE 1 Installation Labor Costs and Changes in Total Project Costs Attributed to Hypothetical Changes in Install Labor Costs, by Type of Renewable Energy (2019)

	Install Labor Costs	Percent % in Project Costs Associated with the Following % Changes in Labor Costs			
Resource / Technology	as % of Total Capital Costs	1%	10%	20%	30%
Solar: Utility-Scale Fixed-Tilt (Low - 5 MW)	9.68%	0.10%	0.97%	1.94%	2.90%
Solar: Utility-Scale Fixed-Tilt (High - 100 MW)	10.64%	0.11%	1.06%	2.13%	3.19%
Solar: Utility-Scale One-Axis (Low - 5 MW)	9.70%	0.10%	0.97%	1.94%	2.91%
Solar: Utility-Scale One-Axis Solar (High - 100 MW)	10.89%	0.11%	1.09%	2.18%	3.27%
Solar: Commercial Rooftop (2 MW)	6.96%	0.07%	0.70%	1.39%	2.09%
Solar: Commercial Ground (2MW)	9.15%	0.09%	0.92%	1.83%	2.75%
Wind: Land-Based (2.6 MW Turbines)	6.21%	0.06%	0.62%	1.24%	1.86%
Wind: Fixed-Bottom Offshore (6.1 MW Turbines)	9.34%	0.09%	0.93%	1.87%	2.80%
Wind: Floating Offshore (6.1 MW Turbines)	10.32%	0.10%	1.03%	2.06%	3.09%
Battery Storage: Utility-Scale 60 MW Lithium-ion	5.67%	0.06%	0.57%	1.13%	1.70%
Geothermal: 50 MW Flash Plant (bottom exhaust)	8.03%	NA	NA	NA	NA
Geothermal: 40 MW Flash Plant (top exhaust)	7.58%	NA	NA	NA	NA
Geothermal: 50 MW Binary Plant	3.02%	NA	NA	NA	NA

Note: Changes in total project costs for geothermal projects not estimated because install labor costs are based on union workers receiving prevailing wages and benefits. Offshore wind energy included for context. *Sources:* Pinnacle Economics using detailed NREL and EPRI project cost data.









A 30 percent prevailing wage premium is likely a conservative estimate because:

- The analysis does not include increases in worker productivity linked to a higher prevailing wage, such as lower worker turnover, greater access to apprenticeship training programs, and improved workplace safety.
- Total installation costs have fallen dramatically over the last ten years, and are forecast to continue to decline over the next 30 years.
- Installation labor costs can include equipment, as well as occupations not directly affected by prevailing wages.
- Economies of scale for some technologies reduce average labor costs more than average total costs, thus reducing installation labor's percentage of total costs.
- NREL's benchmark costs are based on national averages, where California is over-weighted and where that state's high cost of labor biases labor costs upward (labor costs in Maryland on commercial solar, for example, are 16 percent lower than the national average).

