

# Distributed Energy Resources & Generation

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January 2020

## Distributed Generation Growth Analysis

Clark Public Utilities anticipates substantial growth in customer owned distributed generation over the next twenty years. As of January 2020, Clark Public Utilities facilitates, integrates and provides the Net Metering benefit to 10.414 MW of installed distributed generation capacity. Our customers have installed 1,489 individual generating systems, primarily rooftop solar. In recent years, distributed generation have exceeded 15% year-over-year annual growth rates.

State incentive programs drive higher adoption rates. Currently, the WA State renewable incentive programs have closed to new participants, and beginning in 2020, the federal tax credit starts decreasing. Because of this, Clark Public Utilities performed a distributed generation growth analysis that examined three different future scenarios. The conservative scenario assumes 10% annual growth, the moderate scenario assumes 15% annual growth and the aggressive scenario assumes 20% annual growth. The overwhelming majority of installed capacity is within Clark Public Utilities' residential customer sector. Clark Public Utilities anticipates this trend to continue into the next two decades.

Clark Public Utilities forecasts 1.25 aMW of energy generation from the 10.414 MW of existing distributed generation in 2020. The growth analysis shows by 2039 the utility could realize between 7.64 aMW and 39.92 aMW of annual distributed energy generation. The moderate growth scenario shows 17.79 aMW of annual electricity generation from distributed generation resources in 2039.

*\*Analysis includes a 12% capacity factor for solar generation sited in Clark County, WA.*

Distributed Generation: Growth Analysis					
	2020	2025	2030	2035	2039
<b>Conservative Scenario</b>					
<b>10% Annual Growth Rate</b>					
Customers	1,489	2,398	3,862	6,220	9,107
Installed Capacity (MW)	10.414	16.772	27.011	43.502	63.691
Generation (aMW)	1.25	2.01	3.24	5.22	7.64
Percent of Total Load	0.2349%	0.3738%	0.5869%	0.9168%	1.3047%
<b>Moderate Scenario</b>					
<b>15% Annual Growth</b>					
Customers	1,489	2,995	6,024	12,116	21,191
Installed Capacity (MW)	10.414	20.946	42.130	84.739	148.210
Generation (aMW)	1.25	2.51	5.06	10.17	17.79
Percent of Total Load	0.2349%	0.4668%	0.9153%	1.7859%	3.0360%
<b>Aggressive Scenario</b>					
<b>20% Annual Growth</b>					
Customers	1,489	3,705	9,219	22,941	47,571
Installed Capacity (MW)	10.414	25.913	64.481	160.449	332.706
Generation (aMW)	1.25	3.11	7.74	19.25	39.92
Percent of Total Load	0.2349%	0.5775%	1.4009%	3.3815%	6.8153%

## Net Metering Analysis

The state mandated net metering threshold is set at 4.0% of taxable power sales in 1996. For Clark Public Utilities this calculates to ~40 MW

Using the distributed generation growth analysis, the utility estimates the different years of meeting the threshold. Under a conservative adoption rate, the analysis shows Clark Public Utilities hitting the net metering threshold in 2035, while under a moderate adoption the year is 2030. The aggressive adoption scenario shows the utility hitting the net metering threshold during 2028. Once Clark Public Utilities hits the threshold, a reassessment of the compensate rate for distributed generation is required.

Distributed Generation: Growth Analysis									
Year	Conservative Scenario (10% Growth YoY)			Moderate Scenario (15% Growth YoY)			Aggressive Scenario (20% Growth YoY)		
	Customers	DG Capacity (MW)	aMW Gen	Customers	DG Capacity (MW)	aMW Gen	Customers	DG Capacity (MW)	aMW Gen
2020	1,489	10.414	1.25	1,489	10.414	1.25	1,489	10.414	1.25
2021	1,638	11.455	1.37	1,712	11.976	1.44	1,787	12.497	1.50
2022	1,802	12.601	1.51	1,969	13.773	1.65	2,144	14.996	1.80
2023	1,982	13.861	1.66	2,265	15.838	1.90	2,573	17.995	2.16
2024	2,180	15.247	1.83	2,604	18.214	2.19	3,088	21.594	2.59
2025	2,398	16.772	2.01	2,995	20.946	2.51	3,705	25.913	3.11
2026	2,638	18.449	2.21	3,444	24.088	2.89	4,446	31.096	3.73
2027	2,902	20.294	2.44	3,961	27.701	3.32	5,335	37.315	4.48
2028	3,192	22.323	2.68	4,555	31.857	3.82	6,402	44.778	5.37
2029	3,511	24.556	2.95	5,238	36.635	4.40	7,683	53.734	6.45
2030	3,862	27.011	3.24	6,024	42.130	5.06	9,219	64.481	7.74
2031	4,248	29.712	3.57	6,927	48.450	5.81	11,063	77.377	9.29
2032	4,673	32.684	3.92	7,967	55.718	6.69	13,276	92.852	11.14
2033	5,140	35.952	4.31	9,162	64.075	7.69	15,931	111.423	13.37
2034	5,654	39.547	4.75	10,536	73.686	8.84	19,118	133.707	16.04
2035	6,220	43.502	5.22	12,116	84.739	10.17	22,941	160.449	19.25
2036	6,842	47.852	5.74	13,933	97.450	11.69	27,529	192.538	23.10
2037	7,526	52.637	6.32	16,024	112.068	13.45	33,035	231.046	27.73
2038	8,279	57.901	6.95	18,427	128.878	15.47	39,642	277.255	33.27
2039	9,107	63.691	7.64	21,191	148.210	17.79	47,571	332.706	39.92

## Community Solar & Low Income Customers

Clark Public Utilities operates 319 kW of installed community solar sited within Clark County, WA. In 2019, the Clark Public Utilities Board of Commissioners allocated 5%, approximately 15 kW, of the community solar array to the utility low-income program, Operation Warm Heart. This design change allows for many members of our most vulnerable populations to realize the benefit of local, renewable energy resources. Clark Public Utilities will continue to look for additional opportunities that will allow for limited and low-income customers to participate in renewable energy programs and projects.

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