



Solar Photovoltaic Project Forecast Methodology Parameters

September 2019

This document contains the set of parameters to be used in the Solar Photovoltaic Project Forecast Methodology under Climate Forward. The values in these tables have been approved for use in this methodology by the Climate Action Reserve, but should still be reviewed for appropriateness by the confirmation body. Project proponents may propose additions or changes to all parameters by demonstrating the appropriateness of such changes to the Reserve, though the values for all parameters must be approved by the Reserve before a project can be listed and the parameter values can be employed in the calculation of emission reductions. The project proponent must provide the Reserve with robust evidence demonstrating to the Reserve’s satisfaction that proposed parameter values are reasonable and conservative. Examples of evidence that may satisfy this requirement include independent baseline studies conducted within 10 years of the project start date, literature reviews, independent expert testimony, or values utilized in grid-connected renewable energy projects actively issuing carbon credits under the Clean Development Mechanism (CDM) in the relevant region or country.

Table 1. Performance Standard Test Eligibility

Criteria	Region	Building Status	Ownership	Sector	Eligible?	Source
Performance standard test	California	Existing	Public	Residential	Yes	See Methodology Appendix A
				Commercial		
				Industrial		
			Private	Residential		
				Commercial		
				Industrial		
		New	Public	Residential		
				Commercial		
				Industrial		
			Private	Residential		
				Commercial		
				Industrial		

Table 2. Legal Requirement Test Eligibility

Criteria	Region	Building Status	Ownership	Sector	Eligible?	Source		
Legal requirement test	California	Existing	Public	Residential	Yes	N/A		
				Commercial				
				Industrial				
			Private	Residential				
				Commercial				
		Industrial						
		New	Public	Residential	No	No	California Energy Commission 2019 Building Energy Efficiency Standards- Title 24	
					Commercial			Yes
								Industrial
			Private	Residential	No	No	California Energy Commission 2019 Building Energy Efficiency Standards- Title 24	
Commercial	Yes							
	Industrial				Yes			

Table 3. Utility-Specific Annual Average Emission Factors

Year (y)	Region (r)	Utility	EF	Units	Source
2018	Southern California	Southern California Edison (SCE)	507	lb CO ₂ e/MWh	2018 SCE Sustainability Report

Table 4. EPA AVERT Utility PV Emission Factors

Year (y)	Region (r)	EF	Units	Source
2018	Northeast	1,105	lb CO ₂ /MWh	2018 EPA AVERT Utility PV Emission Factors
2018	Great Lakes/Mid-Atlantic	1,560	lb CO ₂ /MWh	2018 EPA AVERT Utility PV Emission Factors
2018	Southeast	1,399	lb CO ₂ /MWh	2018 EPA AVERT Utility PV Emission Factors
2018	Lower Midwest	1,605	lb CO ₂ /MWh	2018 EPA AVERT Utility PV Emission Factors
2018	Upper Midwest	1,759	lb CO ₂ /MWh	2018 EPA AVERT Utility PV Emission Factors

2018	Rocky Mountains	1,576	lb CO ₂ /MWh	<u>2018 EPA AVERT Utility PV Emission Factors</u>
2018	Texas	1,264	lb CO ₂ /MWh	<u>2018 EPA AVERT Utility PV Emission Factors</u>
2018	Southwest	1,250	lb CO ₂ /MWh	<u>2018 EPA AVERT Utility PV Emission Factors</u>
2018	Northwest	1,534	lb CO ₂ /MWh	<u>2018 EPA AVERT Utility PV Emission Factors</u>
2018	California	1,008	lb CO ₂ /MWh	<u>2018 EPA AVERT Utility PV Emission Factors</u>

Table 5. EPA eGRID Non-Baseload Emission Factors

Year (y)	Region (r) Acronym	Region (r) Name	EF	Units	Source
2016	AKGD	ASCC Alaska Grid	1,375.0	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	AKMS	ASCC Miscellaneous	1,538.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	AZNM	WECC Southwest	1,391.2	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	CAMX	WECC California	945.6	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	ERCT	ERCOT All	1,409.8	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	FRCC	FRCC All	1,193.3	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	HIMS	HICC Miscellaneous	1,540.2	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	HIOA	HICC Oahu	1,648.3	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	MROE	MRO East	1,750.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>

2016	MROW	MRO West	1,834.0	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	NEWE	NPCC New England	980.5	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	NWPP	WECC Northwest	1,533.8	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	NYCW	NPCC NYC/Westchester	1,062.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	NYLI	NPCC Long Island	1,340.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	NYUP	NPCC Upstate NY	1,022.0	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	RFCE	RFC East	1,441.4	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	RFCM	RFC Michigan	1,816.1	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	RFCW	RFC West	1,946.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	RMPA	WECC Rockies	1,697.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SPNO	SPP North	2,004.1	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SPSO	SPP South	1,670.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SRMV	SERC Mississippi Valley	1,190.6	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SRMW	SERC Midwest	1,966.5	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-</u>

					<u>Baseload Output Emission Rates</u>
2016	SRSO	SERC South	1,461.1	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SRTV	SERC Tennessee Valley	1,767.9	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>
2016	SRVC	SERC Virginia/Carolina	1,430.4	lb CO ₂ e/MWh	<u>2016 EPA eGRID Subregion Non-Baseload Output Emission Rates</u>

Table 6. Renewables Portfolio Standard by Year and Region

Year (y)	Region (r)	Utility	Eligible Renewables	Units	Source
2018	Southern California	Southern California Edison (SCE)	36.5	% of delivered electricity	2018 SCE Sustainability Report
2020	California	Each local publicly owned electric utility in the State	33	% of delivered electricity	California Senate Bill No. 100
2024	California	Each local publicly owned electric utility in the State	44	% of delivered electricity	California Senate Bill No. 100
2027	California	Each local publicly owned electric utility in the State	52	% of delivered electricity	California Senate Bill No. 100
2030	California	Each local publicly owned electric utility in the State	60	% of delivered electricity	California Senate Bill No. 100
2045	California	Each local publicly owned electric utility in the State	100	% of delivered electricity	California Senate Bill No. 100