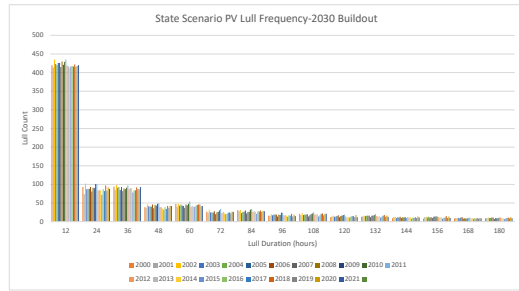


Buildout Year Type	State Scenario 2030 PV	Title	State Scenario PV Lull Frequency-2030 Buildout
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Profile Year	Lull Duration (hours)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
2000	420	93	94	38	48	27	31	16	21	12	13	9	8	8	9
2001	414	74	85	37	40	24	28	16	17	14	14	12	12	10	9
2002	435	109	98	46	48	32	31	20	23	16	16	13	13	10	11
2003	423	87	91	41	43	25	23	17	18	13	15	10	11	10	10
2004	420	88	93	41	46	25	26	19	19	14	16	12	13	9	10
2005	426	88	85	40	43	24	27	19	19	15	16	11	11	11	11
2006	426	93	93	46	42	28	30	19	20	17	16	13	12	13	11
2007	415	81	82	36	37	20	22	14	14	12	12	10	10	8	7
2008	430	91	89	45	46	25	26	19	17	15	16	12	13	9	10
2009	421	90	87	43	44	26	26	18	20	16	16	11	14	8	9
2010	429	101	91	48	48	30	32	24	22	18	18	12	14	9	10
2011	436	101	97	49	48	35	34	25	25	19	19	10	14	10	11
2012	415	84	87	39	40	23	26	17	19	14	15	12	12	11	11
2013	417	85	90	39	42	26	28	17	20	11	13	11	11	9	9
2014	413	84	90	35	40	22	26	16	20	12	15	12	12	9	9
2015	417	72	78	32	40	20	21	13	14	11	11	8	8	8	7
2016	418	87	84	39	43	21	28	17	17	13	13	11	10	9	9
2017	416	82	84	34	45	24	27	16	21	15	16	10	11	8	10
2018	422	97	92	42	46	25	30	21	22	15	18	12	13	10	11
2019	416	83	87	37	46	22	26	14	17	12	13	10	10	8	9
2020	418	92	87	42	41	27	29	19	21	18	16	14	10	10	7
2021	420	88	93	42	42	26	28	15	21	12	13	11	10	9	9
Average	421	88	89	41	44	25	28	18	19	14	15	11	12	9	10
Max	435	102	98	49	54	34	34	24	25	19	20	14	15	12	12
Min	413	72	78	32	37	20	21	13	14	11	11	8	8	8	7

Red Fill=Most Occurrences  
Green Fill=Least Occurrences

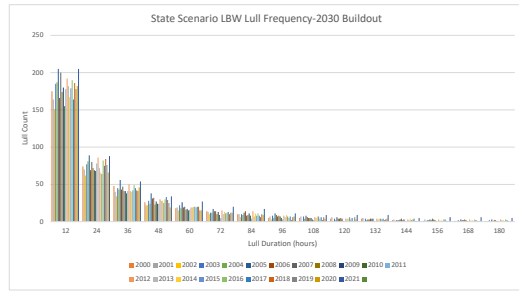


Note: The above chart represents lull frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.  
Lulls for the purpose of this analysis were defined as periods where rolling average capacity factor was below 10%. Rolling mean was implemented using pandas.DataFrame.rolling method.

Buildout	State Scenario	Title	State Scenario LBW Lull Frequency-2030 Buildout
Year	2030		
Type	LBW		

Profile Year	Lull Duration (hours)																
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180		
2000	175	74	48	26	18	14	10	5	5	4	4	2	1	1	1		
2001	164	70	40	22	19	13	10	7	7	6	5	3	3	1	0		
2002	151	62	34	22	15	10	6	3	1	1	1	1	1	0	0		
2003	185	77	45	28	22	12	10	8	7	4	4	2	2	2	2		
2004	187	81	43	24	18	12	9	5	4	2	2	2	2	1	0		
2005	205	89	52	28	26	17	12	11	8	6	3	2	3	3	3		
2006	166	69	43	31	19	14	14	9	6	4	3	3	2	2	1		
2007	200	80	47	32	20	14	8	7	5	4	4	4	4	2	2		
2008	174	72	42	23	16	10	9	8	5	5	4	2	3	3	2		
2009	180	69	41	27	17	13	11	7	5	4	4	3	2	2	1		
2010	155	68	38	24	15	9	8	5	3	1	1	1	1	1	1		
2011	178	78	41	24	16	5	4	3	2	0	0	0	0	0	0		
2012	192	86	50	30	19	15	14	8	6	4	4	3	3	3	3		
2013	182	72	41	28	19	10	7	6	5	4	3	2	1	1	2		
2014	167	66	40	28	20	13	11	9	7	4	4	4	2	2	2		
2015	179	64	42	25	20	11	8	7	7	6	4	2	1	1	0		
2016	190	82	49	30	19	12	11	5	4	3	3	3	3	3	3		
2017	164	75	45	33	20	13	8	7	6	5	4	4	3	2	2		
2018	186	84	42	29	20	10	6	2	2	1	2	1	1	1	1		
2019	178	76	41	25	15	12	10	6	6	6	3	1	1	1	0		
2020	182	66	46	19	15	12	9	7	4	3	4	1	1	1	1		
2021	201	88	54	34	22	16	17	11	8	6	5	1	1	6	1		
Average	179	75	44	27	19	12	10	7	5	4	3	2	2	2	1		
Max	205	89	56	38	27	20	17	11	9	9	9	5	6	6	5		
Min	151	62	34	19	15	5	4	2	1	0	0	0	0	0	0		

Red Fill=Most Occurrences  
Green Fill=Least Occurrences

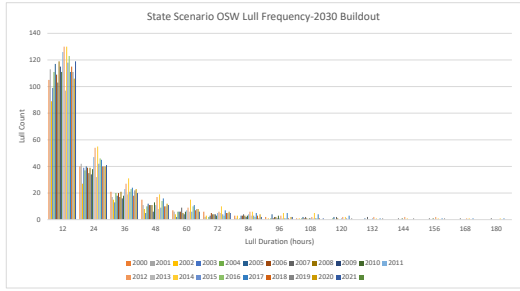


Note: The above chart represents full frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.  
Lulls for the purpose of this analysis were defined as periods where rolling average capacity factor was below 10%. Rolling mean was implemented using pandas.DataFrame.rolling method.

Buildout	State Scenario	Title	State Scenario OSW Lull Frequency 2030 Buildout
Year	2030		
Type	OSW		

Profile Year	Lull Duration (hours)																
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180		
2000	105	40	21	15	7	6	3	2	1	0	0	0	0	0	0		
2001	113	42	17	11	6	2	1	0	0	0	0	0	0	0	0		
2002	89	27	15	8	4	3	3	1	1	0	0	0	0	0	0		
2003	99	39	13	5	2	0	0	0	0	0	0	0	0	0	0		
2004	111	37	20	10	6	2	1	1	1	1	0	0	0	0	0		
2005	117	40	18	12	6	3	3	4	2	2	1	0	0	0	0		
2006	109	39	20	11	6	5	3	1	1	0	0	0	0	0	0		
2007	103	35	17	11	9	4	4	2	2	2	1	1	1	1	1		
2008	119	39	21	11	5	4	3	2	1	1	0	0	0	0	0		
2009	115	34	16	6	4	4	2	1	0	0	0	0	0	0	0		
2010	111	38	18	13	6	3	3	3	1	0	0	1	1	0	0		
2011	126	47	23	11	7	5	4	1	1	1	1	0	0	0	0		
2012	108	54	27	17	9	6	3	2	2	2	2	2	2	2	2		
2013	97	32	19	8	6	5	3	1	1	0	0	0	0	0	0		
2014	130	55	31	19	15	10	6	5	3	2	1	1	1	1	1		
2015	118	42	21	9	6	4	3	1	1	1	0	0	0	0	0		
2016	123	46	23	14	10	3	2	1	1	0	0	0	0	0	0		
2017	111	45	24	16	11	7	5	3	4	1	1	0	1	1	1		
2018	115	40	18	10	7	5	3	1	1	0	0	0	0	0	0		
2019	111	40	22	10	8	5	1	0	0	1	1	1	1	0	0		
2020	106	40	23	12	8	6	4	2	0	0	0	0	0	0	0		
2021	119	41	20	11	6	5	2	2	1	0	0	0	0	0	0		
Average	113	41	20	11	7	4	3	2	1	1	0	0	0	0	0		
Max	130	55	31	19	15	10	6	5	3	2	2	2	2	2	2		
Min	89	27	13	5	2	0	0	0	0	0	0	0	0	0	0		

Red Fill=Most Occurrences  
Green Fill=Least Occurrences

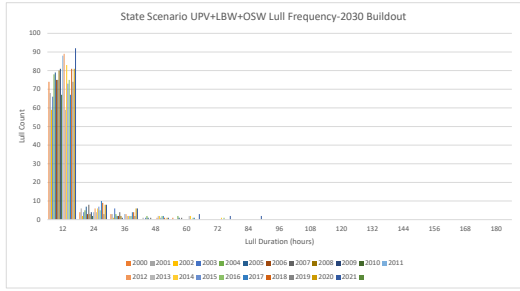


Note: The above chart represents full frequency of the stated buildout type based on which year of NVISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.  
Lulls for the purpose of this analysis were defined as periods where rolling average capacity factor was below 10%. Rolling mean was implemented using pandas.DataFrame.rolling method.

Buildout	State Scenario	Title	State Scenario UPV+LBW+OSW Lull Frequency-2030 Buildout
Year	2030		
Type	UPV+LBW+OSW		

Profile Year	Lull Duration (hours)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
2000	74	4	3	0	1	0	0	0	0	0	0	0	0	0	0
2001	68	6	3	1	0	0	0	0	0	0	0	0	0	0	0
2002	59	2	1	0	0	0	0	0	0	0	0	0	0	0	0
2003	66	4	3	1	0	0	0	0	0	0	0	0	0	0	0
2004	78	5	3	2	0	0	0	0	0	0	0	0	0	0	0
2005	79	7	2	1	1	0	0	0	0	0	0	0	0	0	0
2006	75	3	2	0	0	0	0	0	0	0	0	0	0	0	0
2007	75	8	4	1	1	0	0	0	0	0	0	0	0	0	0
2008	80	3	2	0	0	0	0	0	0	0	0	0	0	0	0
2009	81	4	1	0	0	0	0	0	0	0	0	0	0	0	0
2010	67	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	88	4	3	0	0	0	0	0	0	0	0	0	0	0	0
2012	89	6	3	1	0	0	0	0	0	0	0	0	0	0	0
2013	59	4	2	2	2	0	0	0	0	0	0	0	0	0	0
2014	83	6	2	2	1	0	0	0	0	0	0	0	0	0	0
2015	73	7	2	1	0	0	0	0	0	0	0	0	0	0	0
2016	75	5	2	2	1	1	0	0	0	0	0	0	0	0	0
2017	67	10	4	2	1	0	0	0	0	0	0	0	0	0	0
2018	81	9	4	1	0	0	0	0	0	0	0	0	0	0	0
2019	74	3	2	0	0	0	0	0	0	0	0	0	0	0	0
2020	81	8	4	1	0	0	0	0	0	0	0	0	0	0	0
2021	80	8	6	1	2	2	0	0	0	0	0	0	0	0	0
Average	76	5	3	1	1	0	0	0	0	0	0	0	0	0	0
Max	92	10	6	2	3	2	2	0	0	0	0	0	0	0	0
Min	59	2	0	0	0	0	0	0	0	0	0	0	0	0	0

Red Fill=Most Occurrences  
Green Fill=Least Occurrences

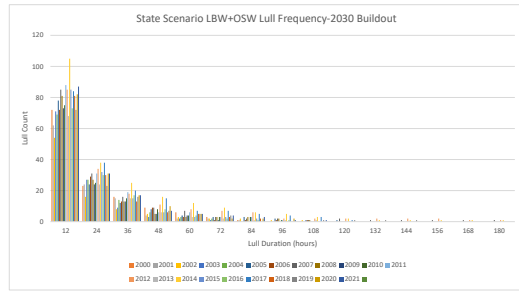


Note: The above chart represents full frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.  
Lulls for the purpose of this analysis were defined as periods where rolling average capacity factor was below 10%. Rolling mean was implemented using pandas.DataFrame.rolling method.

<b>Buildout</b>	State Scenario	<b>Title</b>	<b>State Scenario LBW+OSW Lull Frequency-2030 Buildout</b>									
<b>Year</b>	2030											
<b>Type</b>	LBW+OSW											

Profile Year	Lull Duration (hours)														
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
2000	72	23	16	9	6	3	1	0	0	0	0	0	0	0	0
2001	62	24	15	4	2	2	1	0	0	0	0	0	0	0	0
2002	54	16	8	5	3	2	2	1	1	0	0	0	0	0	0
2003	71	27	9	3	2	1	0	0	0	0	0	0	0	0	0
2004	69	27	14	6	3	2	0	0	0	0	0	0	0	0	0
2005	78	24	12	8	4	3	3	2	1	1	0	0	0	0	0
2006	72	29	13	9	3	1	1	1	1	0	0	0	0	0	0
2007	85	31	16	9	7	3	2	2	1	1	1	1	1	1	1
2008	81	27	13	5	3	3	3	2	1	0	0	0	0	0	0
2009	73	24	13	5	4	1	0	0	0	0	0	0	0	0	0
2010	75	25	15	8	4	3	3	1	0	0	0	0	0	0	0
2011	88	31	19	6	6	3	3	1	0	0	0	0	0	0	0
2012	85	34	18	11	8	7	6	2	2	2	2	2	2	2	2
2013	68	24	15	6	3	2	1	1	1	0	0	0	0	0	0
2014	100	38	20	10	10	9	6	5	3	3	1	1	1	1	1
2015	85	32	15	6	3	3	2	0	0	0	0	0	0	0	0
2016	73	30	17	8	4	2	1	1	0	0	0	0	0	0	0
2017	84	30	20	15	7	5	4	1	1	0	0	0	0	0	0
2018	81	30	13	6	5	3	2	0	0	0	0	0	0	0	0
2019	72	23	16	7	5	4	0	0	1	1	1	1	1	1	1
2020	82	31	17	10	5	2	2	2	0	0	0	0	0	0	0
2021	87	31	17	7	5	4	3	1	1	0	0	0	0	0	0
Average	77	28	15	8	5	3	2	1	1	0	0	0	0	0	0
Max	105	38	20	10	12	9	6	5	3	2	2	2	2	2	2
Min	54	16	8	3	2	1	0	0	0	0	0	0	0	0	0

Red Fill=Most Occurrences  
Green Fill=Least Occurrences



Note: The above chart represents full frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.  
Lulls for the purpose of this analysis were defined as periods where rolling average capacity factor was below 10%. Rolling mean was implemented using pandas.DataFrame.rolling method.

