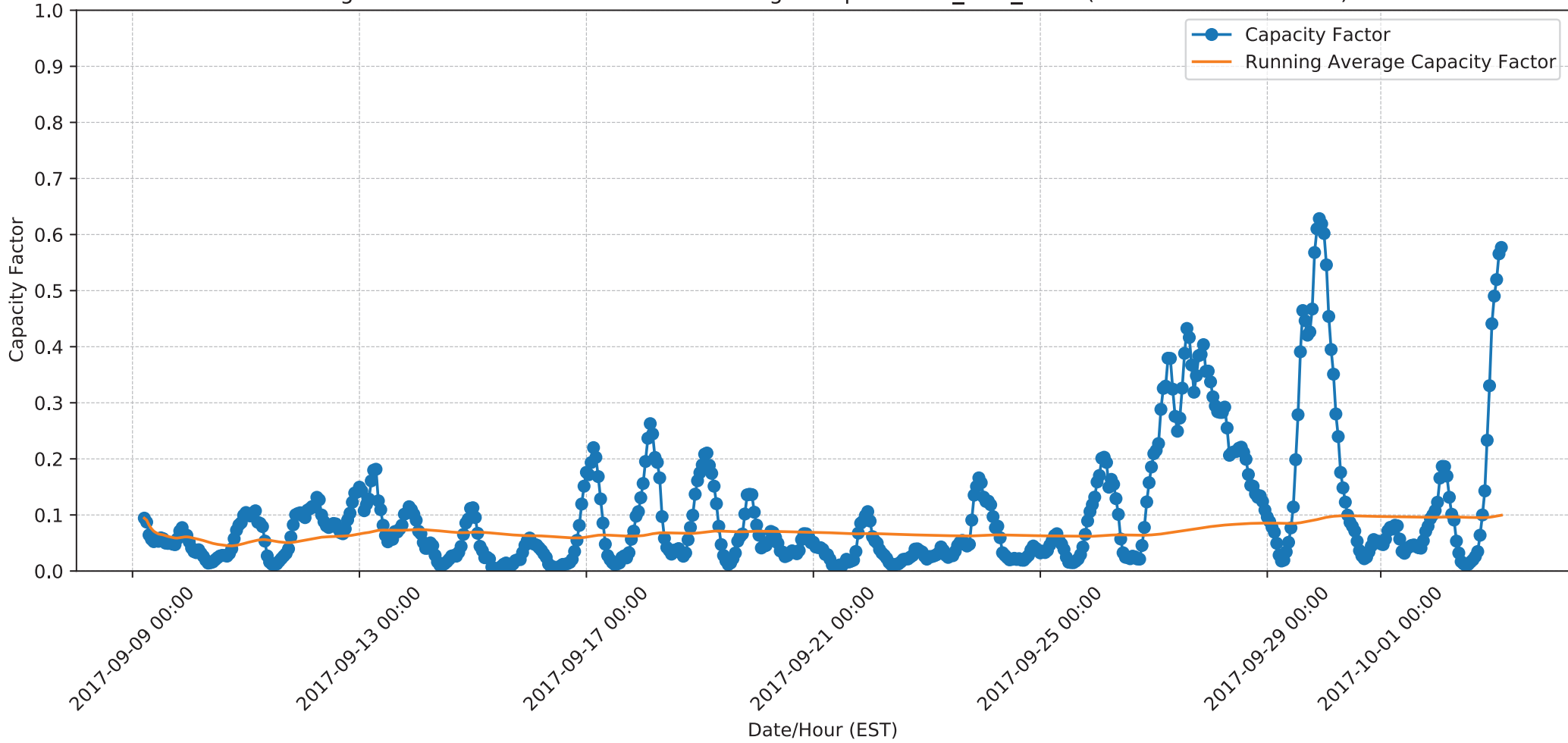
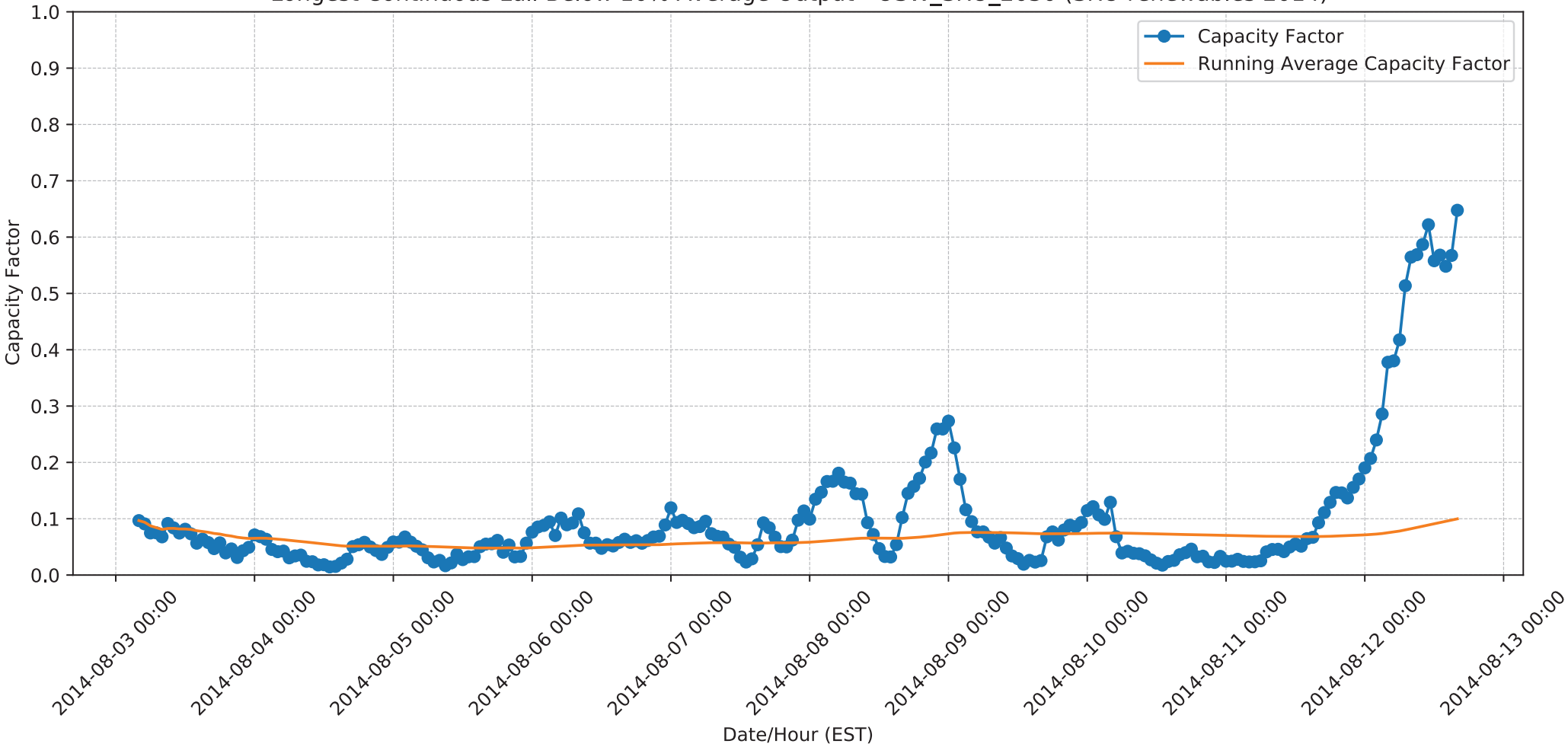


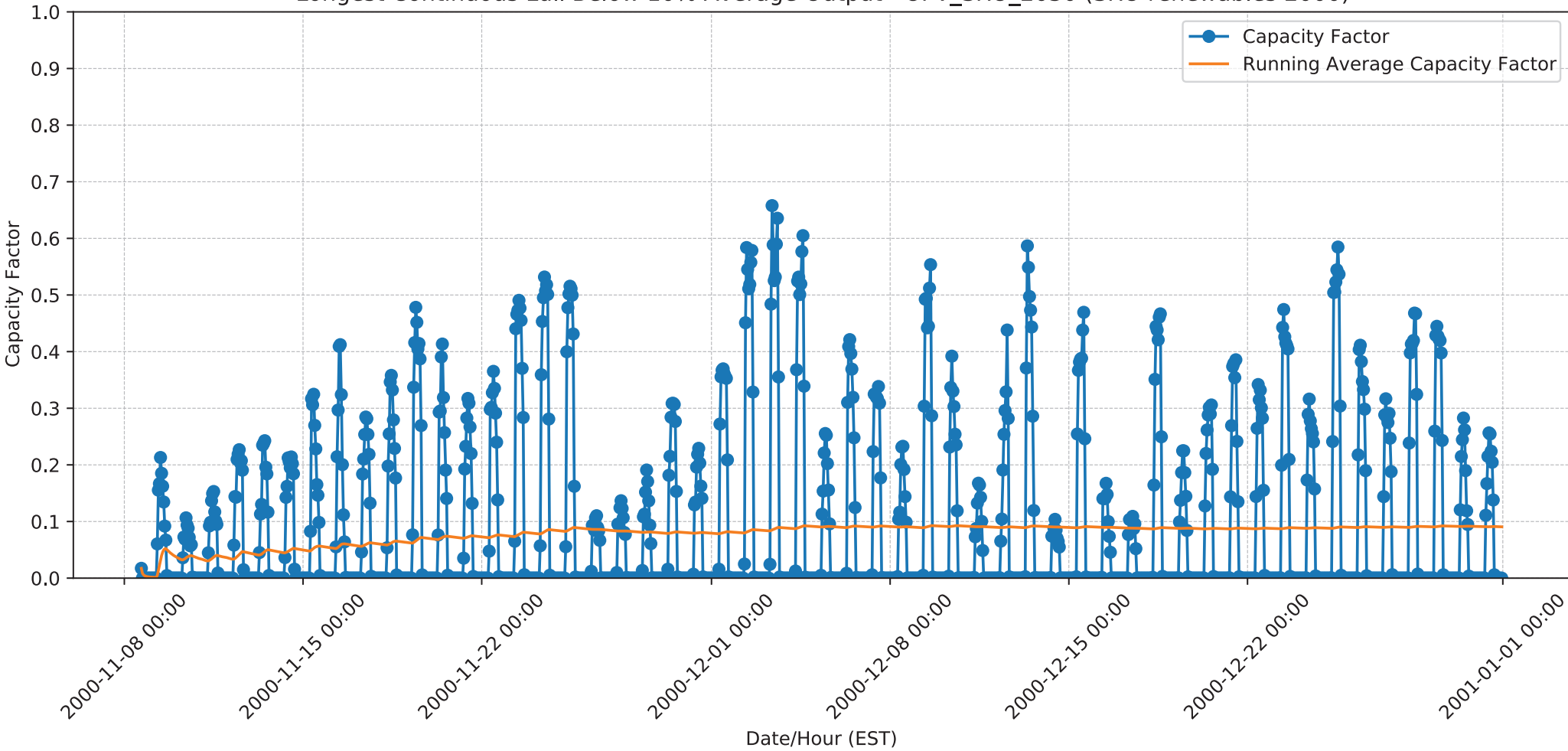
Longest Continuous Lull Below 10% Average Output - LBW\_SRO\_2030 (SRO renewables 2017)



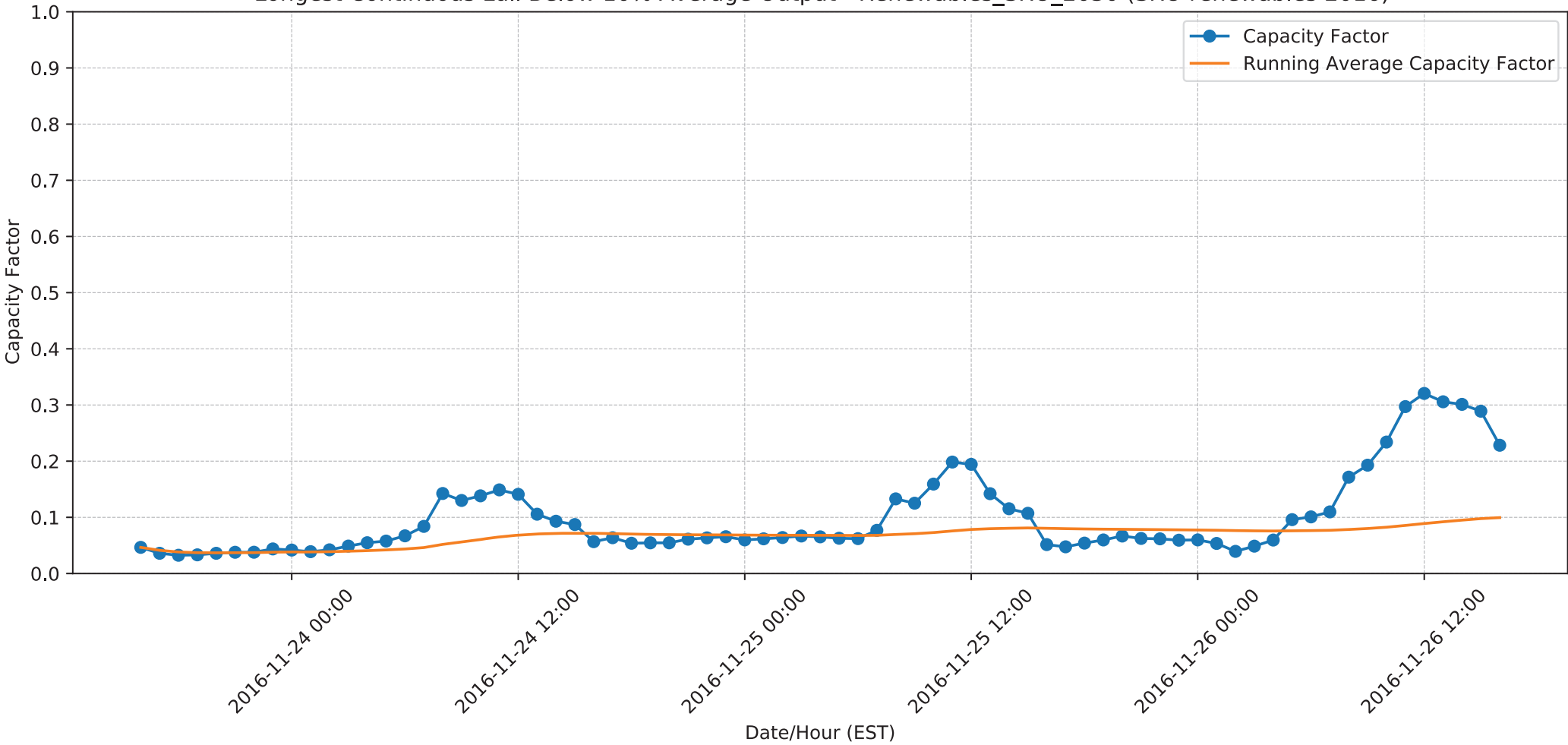
Longest Continuous Lull Below 10% Average Output - OSW\_SRO\_2030 (SRO renewables 2014)



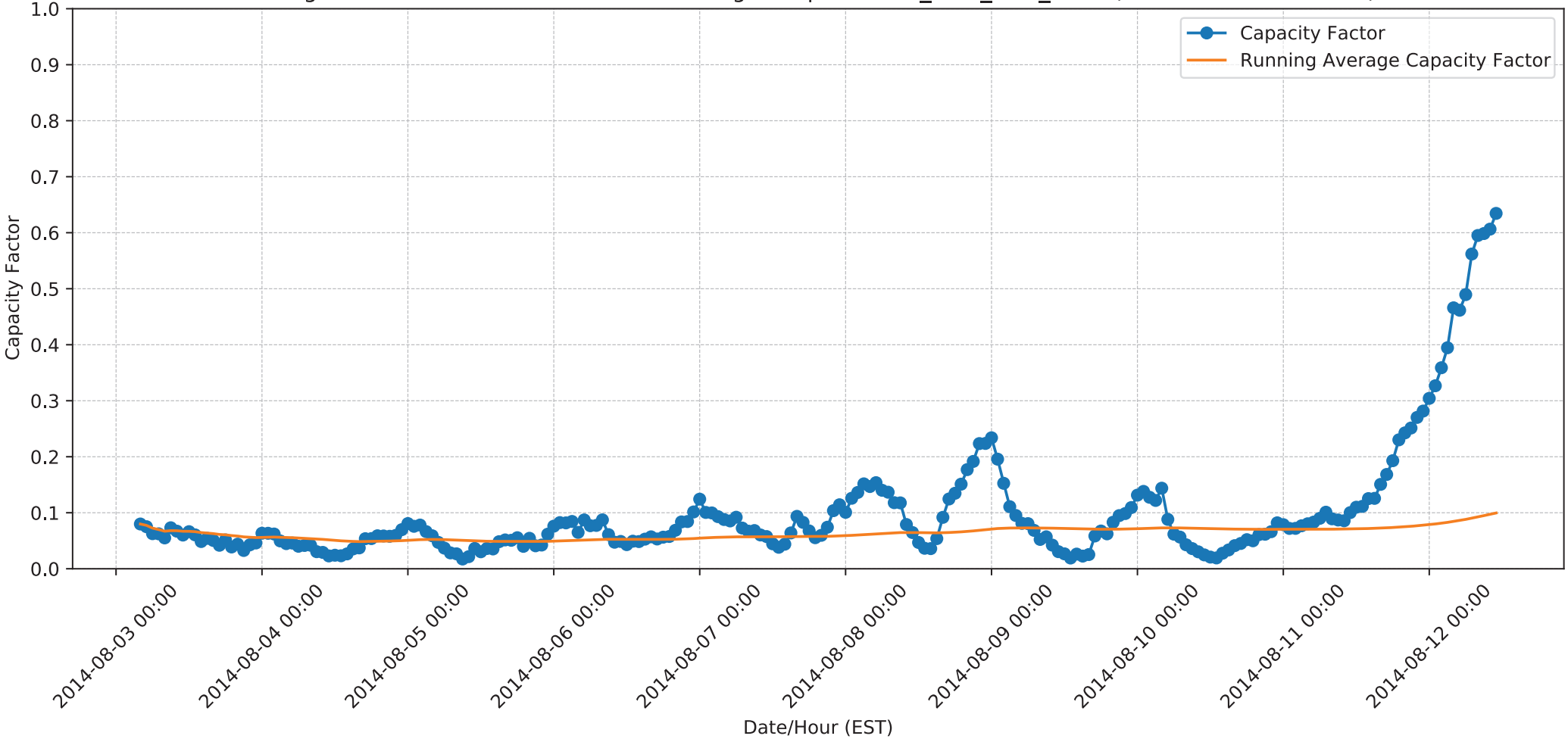
Longest Continuous Lull Below 10% Average Output - UPV\_SRO\_2030 (SRO renewables 2000)



Longest Continuous Lull Below 10% Average Output - Renewables\_SRO\_2030 (SRO renewables 2016)



Longest Continuous Lull Below 10% Average Output - OSW\_LBW\_SRO\_2030 (SRO renewables 2014)

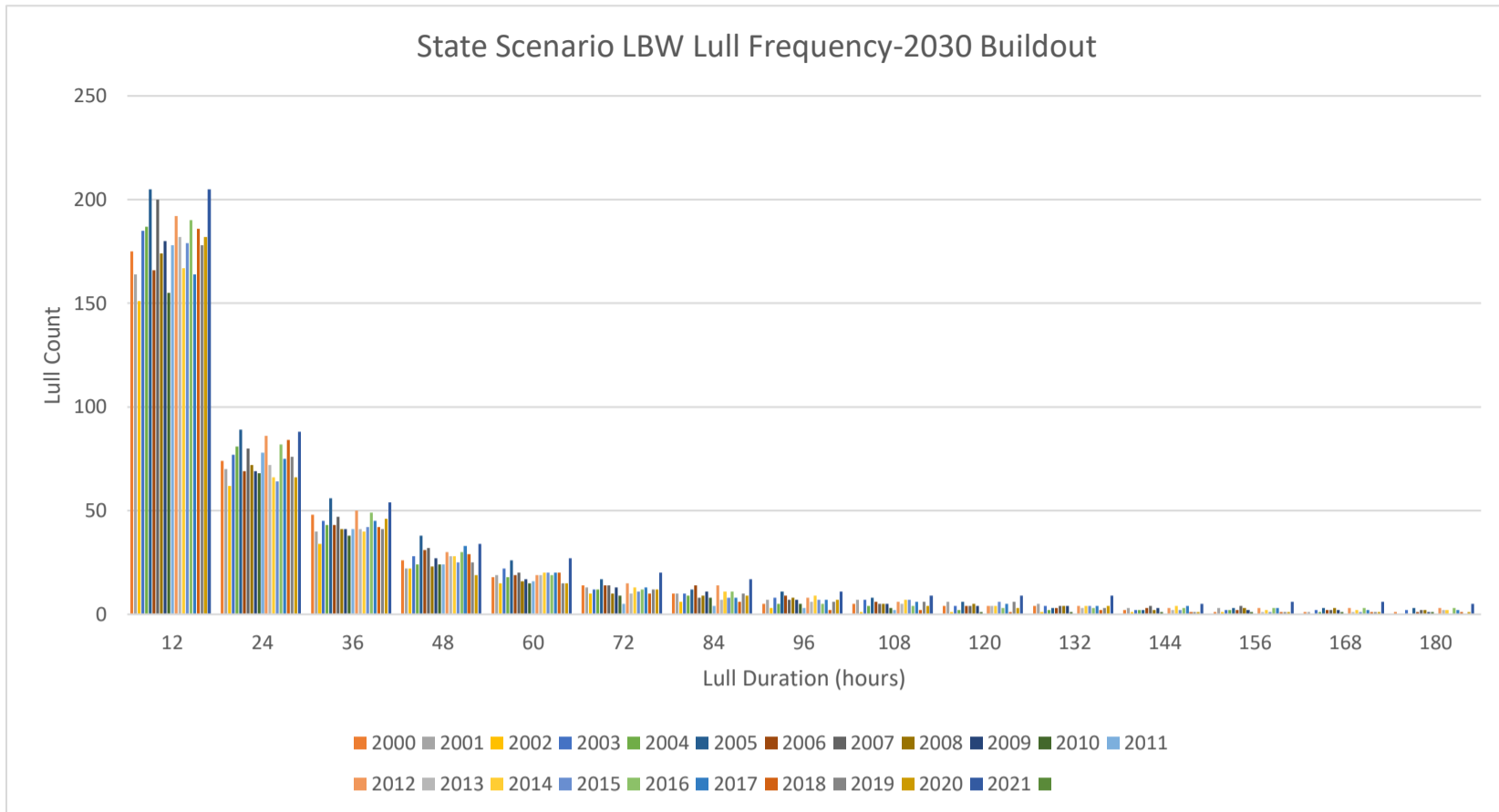


Year	Lull Rank	Start Date	End Date	Duration (hours)	Resource
2000	1	11/8/2000 16:00	12/31/2000 23:00	1280	UPV_SRO_2030
2001	1	1/3/2001 16:00	2/11/2001 11:00	932	UPV_SRO_2030
2002	1	11/9/2002 16:00	12/31/2002 23:00	1256	UPV_SRO_2030
2003	1	12/8/2003 16:00	12/31/2003 23:00	560	UPV_SRO_2030
2004	1	11/16/2004 16:00	12/31/2004 23:00	1088	UPV_SRO_2030
2005	1	11/14/2005 16:00	12/31/2005 23:00	1136	UPV_SRO_2030
2006	1	11/27/2006 16:00	12/31/2006 23:00	824	UPV_SRO_2030
2007	1	12/1/2007 16:00	12/31/2007 23:00	728	UPV_SRO_2030
2008	1	11/23/2008 16:00	12/31/2008 23:00	920	UPV_SRO_2030
2009	1	11/19/2009 16:00	12/31/2009 23:00	1016	UPV_SRO_2030
2010	1	11/15/2010 16:00	12/31/2010 23:00	1112	UPV_SRO_2030
2011	1	11/26/2011 16:00	12/31/2011 23:00	848	UPV_SRO_2030
2012	1	11/22/2012 16:00	12/31/2012 23:00	944	UPV_SRO_2030
2013	1	11/30/2013 16:00	12/31/2013 23:00	752	UPV_SRO_2030
2014	1	11/21/2014 16:00	12/31/2014 23:00	968	UPV_SRO_2030
2015	1	11/30/2015 16:00	12/31/2015 23:00	752	UPV_SRO_2030
2016	1	11/23/2016 16:00	12/31/2016 23:00	920	UPV_SRO_2030
2017	1	12/4/2017 16:00	12/31/2017 23:00	656	UPV_SRO_2030
2018	1	11/24/2018 16:00	12/31/2018 23:00	896	UPV_SRO_2030
2019	1	11/26/2019 16:00	12/31/2019 23:00	848	UPV_SRO_2030
2020	1	11/10/2020 16:00	12/31/2020 23:00	1232	UPV_SRO_2030
2021	1	11/24/2021 16:00	12/31/2021 23:00	896	UPV_SRO_2030
2000	1	7/23/2000 4:00	7/30/2000 8:00	173	LBW_SRO_2030
2001	1	3/31/2001 2:00	4/6/2001 14:00	157	LBW_SRO_2030
2002	1	9/15/2002 11:00	9/18/2002 16:00	78	LBW_SRO_2030
2003	1	8/4/2003 10:00	8/22/2003 6:00	429	LBW_SRO_2030
2004	1	8/12/2004 8:00	8/18/2004 18:00	155	LBW_SRO_2030
2005	1	7/11/2005 5:00	7/17/2005 2:00	142	LBW_SRO_2030
2006	1	3/23/2006 5:00	3/31/2006 2:00	190	LBW_SRO_2030
2007	1	7/21/2007 2:00	8/3/2007 11:00	322	LBW_SRO_2030
2008	1	8/30/2008 8:00	9/5/2008 6:00	143	LBW_SRO_2030
2009	1	8/31/2009 6:00	9/14/2009 18:00	349	LBW_SRO_2030
2010	1	5/25/2010 7:00	5/31/2010 19:00	157	LBW_SRO_2030
2011	1	7/13/2011 19:00	7/17/2011 17:00	95	LBW_SRO_2030
2012	1	11/13/2012 17:00	11/22/2012 21:00	221	LBW_SRO_2030
2013	1	7/12/2013 7:00	7/18/2013 17:00	155	LBW_SRO_2030
2014	1	8/1/2014 14:00	8/12/2014 1:00	252	LBW_SRO_2030
2015	1	7/8/2015 8:00	7/14/2015 1:00	138	LBW_SRO_2030
2016	1	5/18/2016 3:00	5/25/2016 2:00	168	LBW_SRO_2030
2017	1	9/9/2017 5:00	10/3/2017 3:00	575	LBW_SRO_2030
2018	1	8/10/2018 8:00	8/15/2018 13:00	126	LBW_SRO_2030
2019	1	7/31/2019 2:00	8/6/2019 18:00	161	LBW_SRO_2030
2020	1	8/12/2020 2:00	8/17/2020 14:00	133	LBW_SRO_2030
2021	1	8/19/2021 14:00	8/29/2021 4:00	231	LBW_SRO_2030
2000	1	9/1/2000 18:00	9/4/2000 19:00	74	OSW_SRO_2030
2001	1	6/25/2001 0:00	6/27/2001 16:00	65	OSW_SRO_2030
2002	1	9/6/2002 13:00	9/10/2002 23:00	107	OSW_SRO_2030
2003	1	9/20/2003 5:00	9/22/2003 23:00	67	OSW_SRO_2030
2004	1	7/19/2004 6:00	7/24/2004 5:00	120	OSW_SRO_2030
2005	1	8/6/2005 4:00	8/11/2005 19:00	136	OSW_SRO_2030
2006	1	8/23/2006 4:00	8/26/2006 9:00	78	OSW_SRO_2030
2007	1	7/29/2007 3:00	8/3/2007 5:00	123	OSW_SRO_2030
2008	1	8/20/2008 12:00	8/25/2008 9:00	118	OSW_SRO_2030

2009	1	9/19/2009 13:00	9/23/2009 13:00	97	OSW_SRO_2030
2010	1	8/18/2010 1:00	8/22/2010 9:00	105	OSW_SRO_2030
2011	1	8/29/2011 9:00	9/3/2011 17:00	129	OSW_SRO_2030
2012	1	8/19/2012 9:00	8/26/2012 0:00	160	OSW_SRO_2030
2013	1	8/15/2013 7:00	8/19/2013 18:00	108	OSW_SRO_2030
2014	1	8/3/2014 4:00	8/12/2014 16:00	229	OSW_SRO_2030
2015	1	9/16/2015 5:00	9/20/2015 20:00	112	OSW_SRO_2030
2016	1	9/20/2016 2:00	9/24/2016 4:00	99	OSW_SRO_2030
2017	1	7/30/2017 20:00	8/4/2017 20:00	121	OSW_SRO_2030
2018	1	7/2/2018 3:00	7/5/2018 22:00	92	OSW_SRO_2030
2019	1	8/16/2019 4:00	8/19/2019 11:00	80	OSW_SRO_2030
2020	1	6/29/2020 17:00	7/2/2020 23:00	79	OSW_SRO_2030
2021	1	10/12/2021 21:00	10/16/2021 9:00	85	OSW_SRO_2030
2000	1	11/12/2000 17:00	11/14/2000 13:00	45	Renewables_SRO_2030
2001	1	1/13/2001 16:00	1/15/2001 5:00	38	Renewables_SRO_2030
2002	1	11/3/2002 16:00	11/4/2002 19:00	28	Renewables_SRO_2030
2003	1	11/1/2003 23:00	11/3/2003 17:00	43	Renewables_SRO_2030
2004	1	11/16/2004 16:00	11/19/2004 11:00	68	Renewables_SRO_2030
2005	1	2/7/2005 17:00	2/10/2005 3:00	59	Renewables_SRO_2030
2006	1	11/4/2006 16:00	11/6/2006 9:00	42	Renewables_SRO_2030
2007	1	1/13/2007 17:00	1/15/2007 11:00	43	Renewables_SRO_2030
2008	1	12/18/2008 16:00	12/19/2008 13:00	22	Renewables_SRO_2030
2009	1	11/4/2009 15:00	11/5/2009 22:00	32	Renewables_SRO_2030
2010	1	11/15/2010 16:00	11/16/2010 15:00	24	Renewables_SRO_2030
2011	1	2/6/2011 17:00	2/8/2011 9:00	41	Renewables_SRO_2030
2012	1	2/14/2012 19:00	2/17/2012 4:00	58	Renewables_SRO_2030
2013	1	10/3/2013 17:00	10/6/2013 13:00	69	Renewables_SRO_2030
2014	1	12/19/2014 23:00	12/22/2014 19:00	69	Renewables_SRO_2030
2015	1	12/12/2015 14:00	12/14/2015 6:00	41	Renewables_SRO_2030
2016	1	11/23/2016 16:00	11/26/2016 16:00	73	Renewables_SRO_2030
2017	1	12/2/2017 0:00	12/4/2017 16:00	65	Renewables_SRO_2030
2018	1	9/30/2018 16:00	10/1/2018 21:00	30	Renewables_SRO_2030
2019	1	1/17/2019 16:00	1/19/2019 10:00	43	Renewables_SRO_2030
2020	1	1/30/2020 17:00	2/1/2020 12:00	44	Renewables_SRO_2030
2021	1	12/29/2021 20:00	12/31/2021 23:00	52	Renewables_SRO_2030
2000	1	9/1/2000 17:00	9/4/2000 19:00	75	OSW_LBW_SRO_2030
2001	1	6/25/2001 0:00	6/27/2001 16:00	65	OSW_LBW_SRO_2030
2002	1	9/6/2002 12:00	9/10/2002 20:00	105	OSW_LBW_SRO_2030
2003	1	8/12/2003 6:00	8/14/2003 18:00	61	OSW_LBW_SRO_2030
2004	1	8/2/2004 3:00	8/5/2004 1:00	71	OSW_LBW_SRO_2030
2005	1	8/6/2005 4:00	8/10/2005 4:00	97	OSW_LBW_SRO_2030
2006	1	8/23/2006 4:00	8/26/2006 10:00	79	OSW_LBW_SRO_2030
2007	1	7/29/2007 3:00	8/3/2007 5:00	123	OSW_LBW_SRO_2030
2008	1	8/20/2008 12:00	8/25/2008 0:00	109	OSW_LBW_SRO_2030
2009	1	3/13/2009 9:00	3/16/2009 7:00	71	OSW_LBW_SRO_2030
2010	1	8/18/2010 1:00	8/22/2010 3:00	99	OSW_LBW_SRO_2030
2011	1	8/29/2011 9:00	9/2/2011 6:00	94	OSW_LBW_SRO_2030
2012	1	8/19/2012 9:00	8/26/2012 1:00	161	OSW_LBW_SRO_2030
2013	1	8/15/2013 7:00	8/19/2013 18:00	108	OSW_LBW_SRO_2030
2014	1	8/3/2014 4:00	8/12/2014 11:00	224	OSW_LBW_SRO_2030
2015	1	9/16/2015 5:00	9/19/2015 19:00	87	OSW_LBW_SRO_2030
2016	1	9/20/2016 8:00	9/24/2016 1:00	90	OSW_LBW_SRO_2030
2017	1	8/13/2017 11:00	8/18/2017 2:00	112	OSW_LBW_SRO_2030
2018	1	7/29/2018 6:00	8/1/2018 9:00	76	OSW_LBW_SRO_2030
2019	1	7/3/2019 4:00	7/6/2019 5:00	74	OSW_LBW_SRO_2030

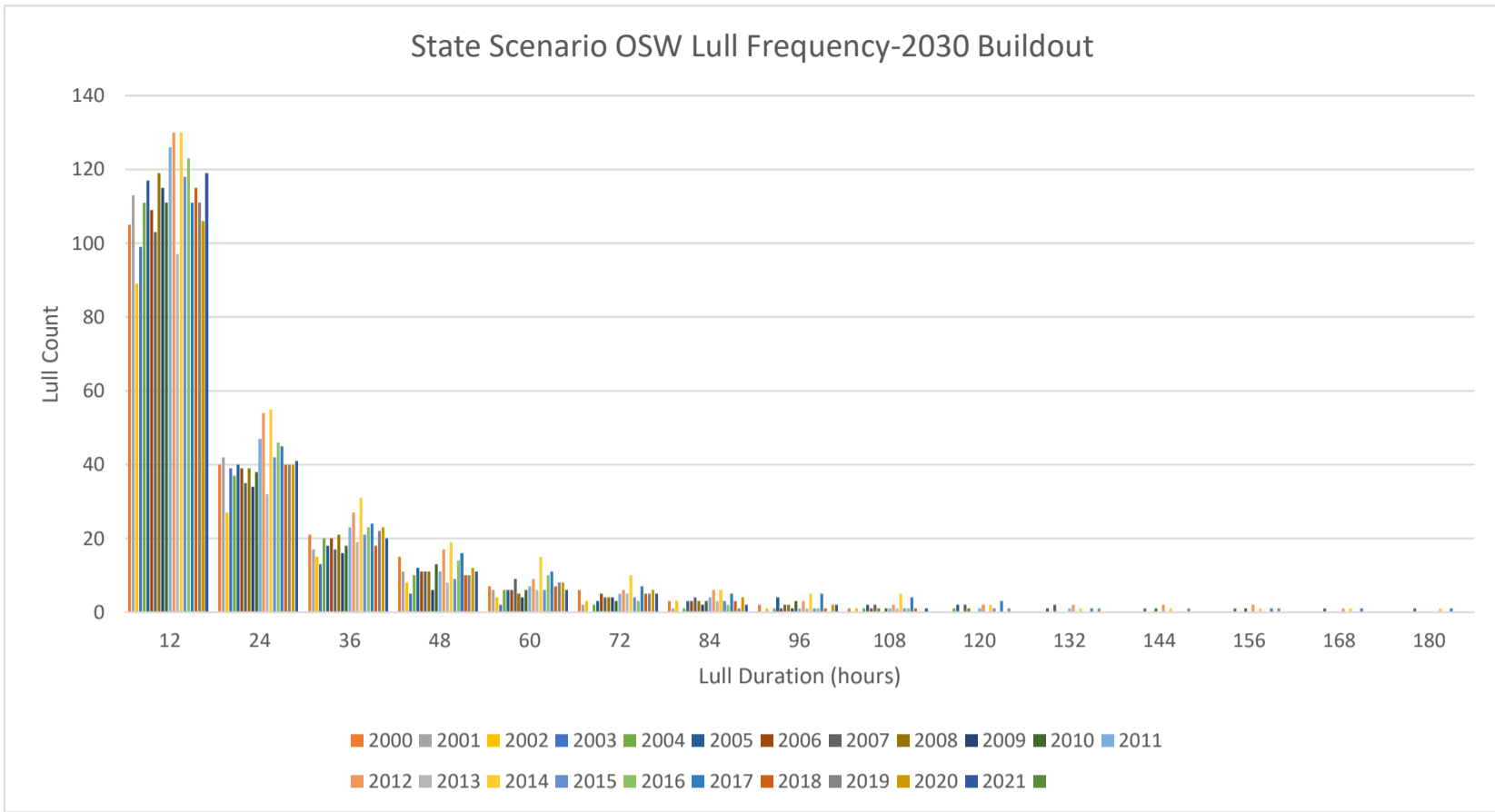
2020	1	8/6/2020 1:00	8/10/2020 1:00	97	OSW_LBW_SRO_2030
2021	1	10/13/2021 1:00	10/16/2021 6:00	78	OSW_LBW_SRO_2030





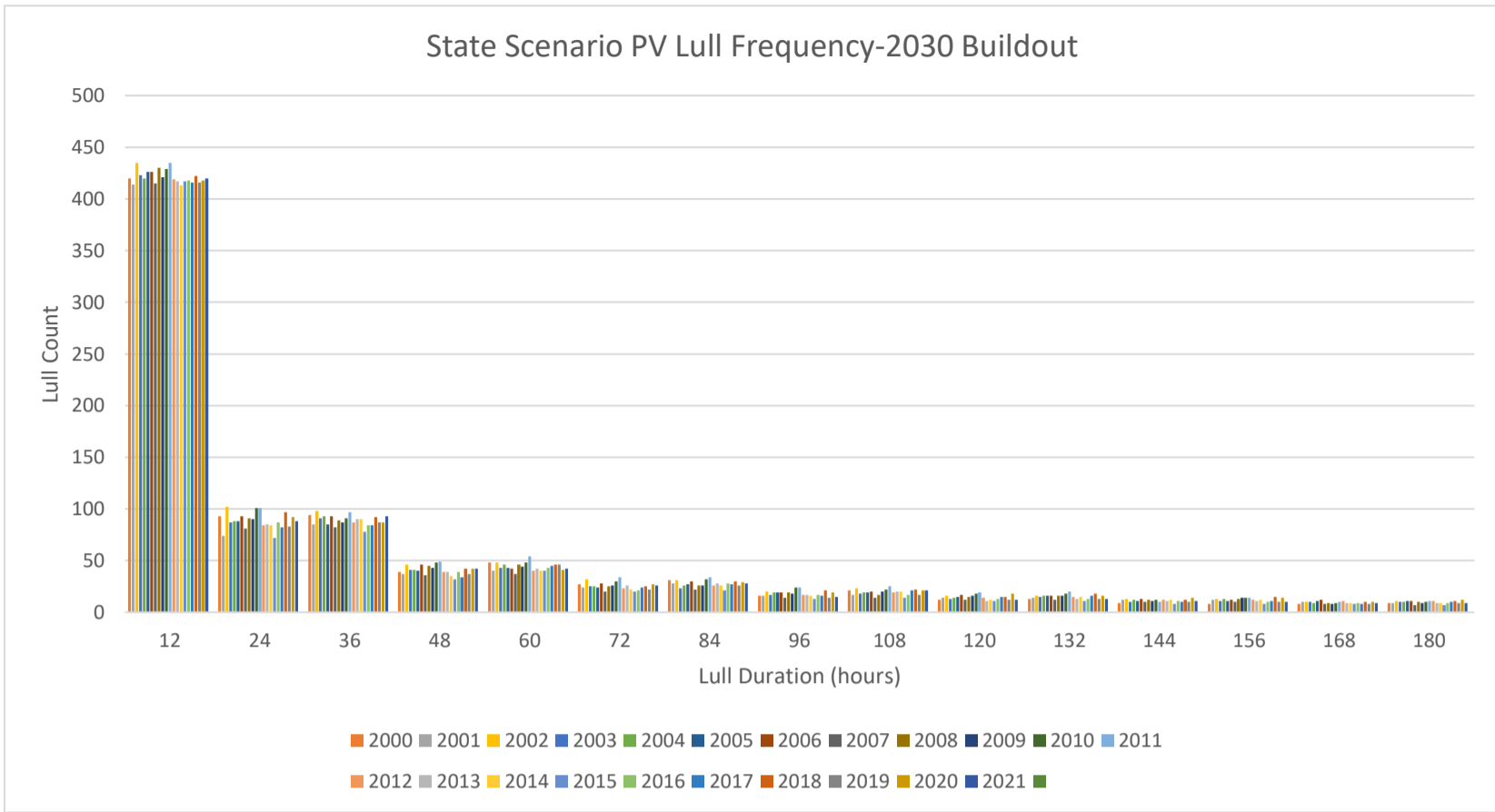
**Note:** The above chart represents lull frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.

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.



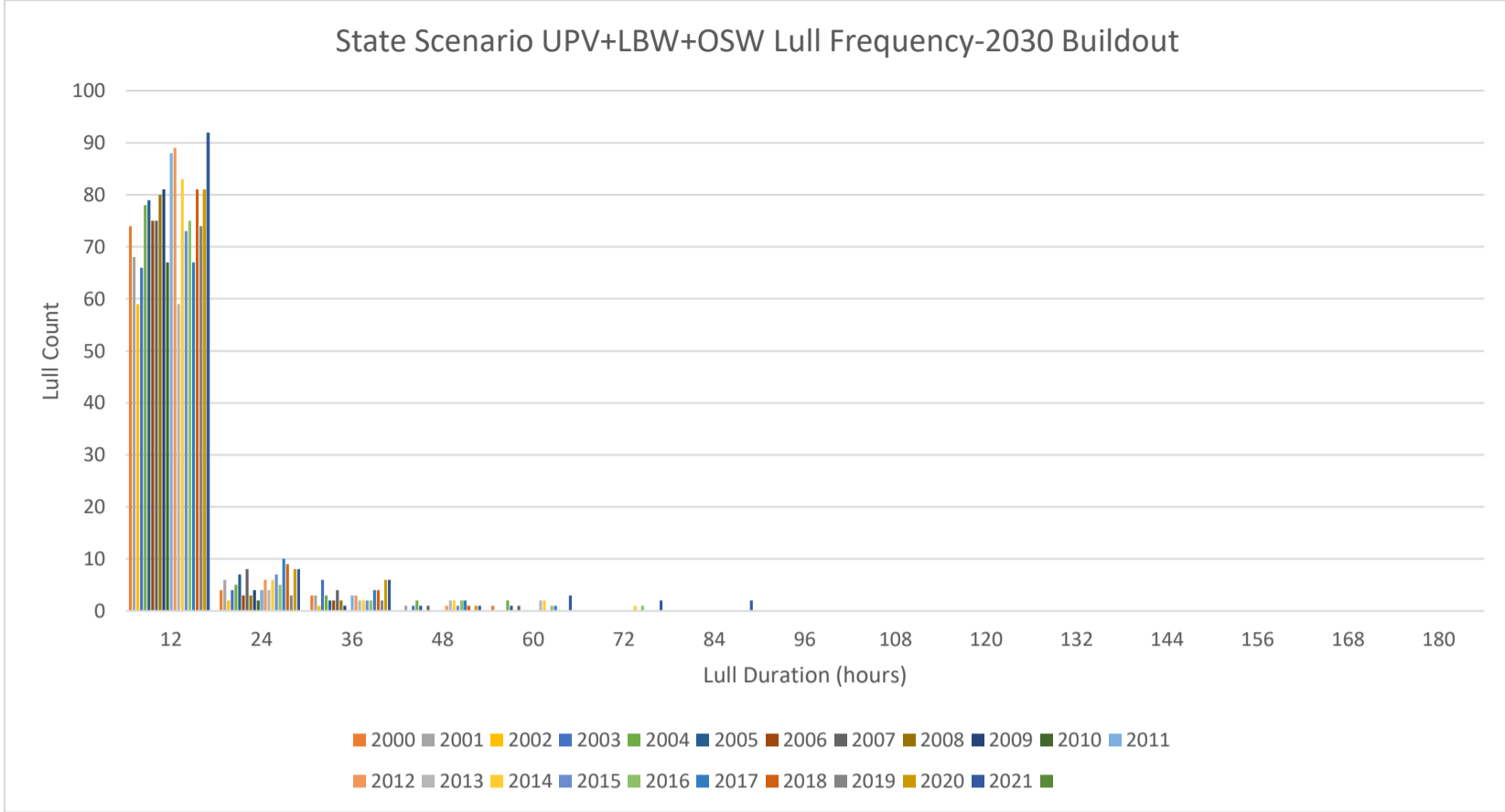
**Note:** The above chart represents lull frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.

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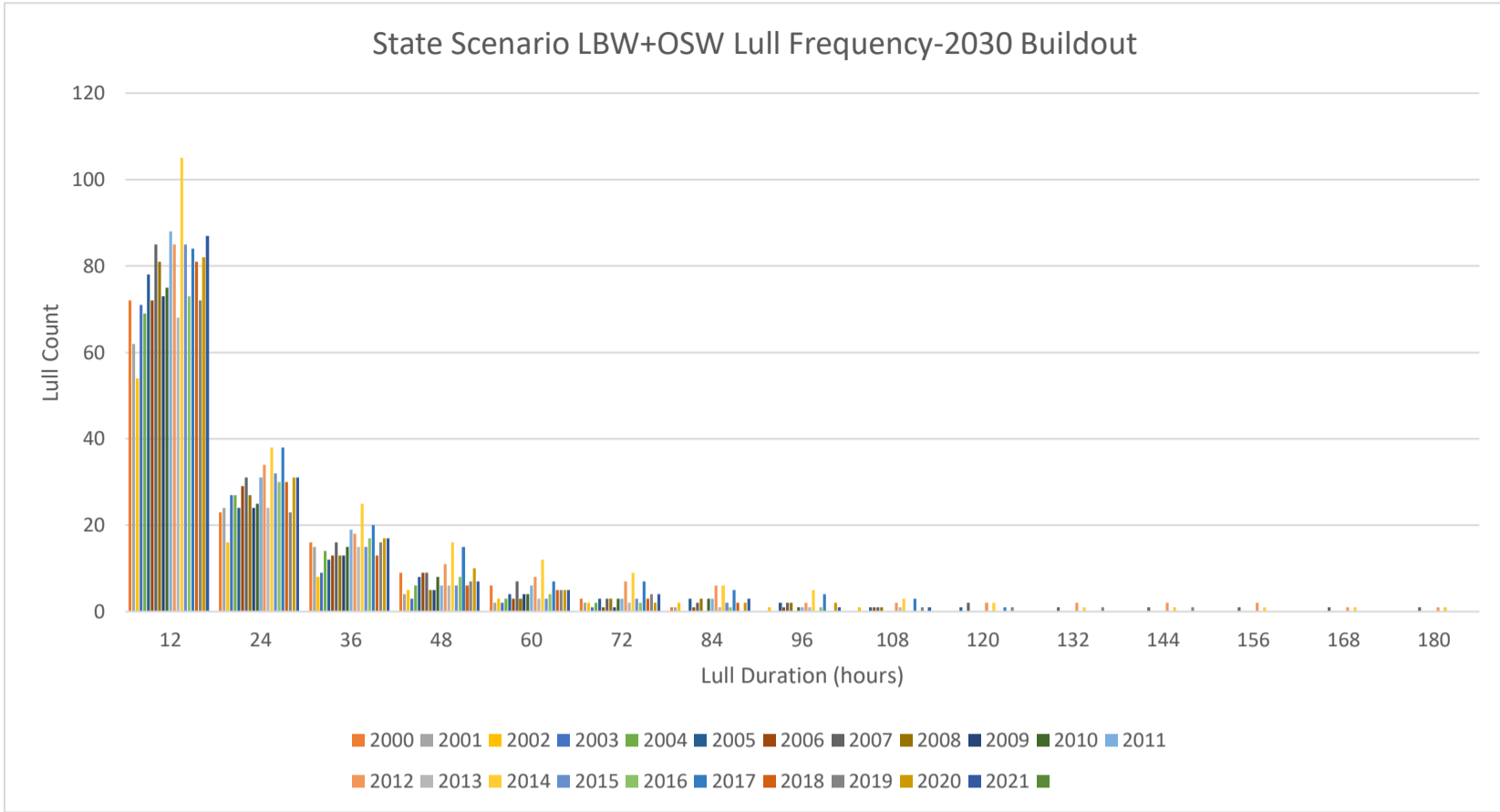
**Note:** The above chart represents lull frequency of the stated buildout type based on which year of NYISO (DNV) renewable data used to develop the overall capacity weighted net capacity factor profile.

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