

Appendix H: Additional Information

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

DRAFT for May 24, 2023, BIC

DRAFT – FOR DISCUSSION PURPOSES ONLY

Appendix H: Additional Information

The New York Public Service Commission (PSC) March 2021 Order Addressing Public Policy Requirements for Transmission Planning Purposes provided, “The NYISO shall also consider other metrics in its evaluation of this Public Policy Requirement, including: changes in production costs; Load-Based Marginal Prices; transmission losses; emissions; Installed Capacity costs; Transmission Congestion Contract revenues; transmission congestion; impacts on transfer limits; and, resource deliverability.” This appendix provides, for each of the metrics identified in the PSC Order, either a data figure or reference to other appendices where the supporting information can be found.

Production Cost Changes

Appendix L, Figure 3 contains the production cost savings for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Load-Based Marginal Prices

The figure below shows the estimated NYISO Location Based Marginal Prices (LBMPs) for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Figure 1: NYISO Annual Average LBMP (\$/MWh)

Case	NYISO Annual Average LBMP (\$/MWh)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	39	43	54	68	37	39	55	78	37	40	56	79
T035 - LS Power	39	43	55	69	37	39	54	76	37	39	54	76
T036 - NextEra Core 1	39	43	55	69	37	39	54	77	37	40	55	78
T037 - NextEra Core 2	39	43	55	69	37	39	54	77	37	40	55	78
T038 - NextEra Core 3	39	43	55	69	37	39	54	76	37	40	55	78
T039 - NextEra Core 4	39	43	55	69	37	39	54	77	37	40	55	78
T040 - NextEra Core 5	39	43	55	69	37	39	54	77	37	40	55	78
T041 - NextEra Core 6	39	43	55	69	37	39	54	77	37	40	55	78
T042 - NextEra Core 7	39	43	55	69	37	39	54	77	37	40	55	78
T043 - NextEra Enh 1	39	43	55	69	38	39	54	76	38	40	54	77
T044 - NextEra Enh 2	40	43	55	69	38	39	54	76	38	40	55	76
T047 - Propel Base 1	39	43	55	69	37	39	54	77	38	40	55	78
T048 - Propel Base 2	39	43	55	69	37	39	54	77	37	40	55	78
T049 - Propel Base 3	39	43	55	69	37	39	54	77	37	39	54	77
T051 - Propel Alt 5	39	43	55	69	37	39	54	76	37	40	55	77
T052 - Propel Alt 6	39	43	55	69	37	39	54	76	37	39	54	77
T053 - Propel Alt 7	39	43	55	69	37	39	54	76	37	39	54	77

Transmission Losses

The figure below shows the total NYCA transmission losses for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Figure 2: Transmission Losses (GWh)

Case	Transmission Losses (GWh)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	3,423	3,797	4,265	5,095	3,863	5,646	7,937	9,210	3,864	5,648	7,934	9,205
T035 - LS Power	3,423	3,792	4,264	5,089	3,862	5,662	7,924	9,217	3,863	5,662	7,921	9,217
T036 - NextEra Core 1	3,398	3,760	4,229	5,046	3,835	5,608	7,847	9,140	3,842	5,610	7,854	9,134
T037 - NextEra Core 2	3,402	3,766	4,236	5,054	3,828	5,607	7,853	9,141	3,837	5,607	7,858	9,132
T038 - NextEra Core 3	3,398	3,770	4,236	5,053	3,830	5,602	7,851	9,135	3,837	5,606	7,850	9,127
T039 - NextEra Core 4	3,380	3,746	4,211	5,023	3,807	5,567	7,800	9,081	3,814	5,572	7,806	9,071
T040 - NextEra Core 5	3,401	3,769	4,238	5,055	3,831	5,604	7,848	9,134	3,839	5,607	7,850	9,130
T041 - NextEra Core 6	3,396	3,758	4,227	5,045	3,834	5,606	7,850	9,140	3,844	5,610	7,851	9,132
T042 - NextEra Core 7	3,396	3,758	4,227	5,045	3,834	5,606	7,850	9,140	3,844	5,610	7,851	9,132
T043 - NextEra Enh 1	3,389	3,749	4,217	5,030	3,793	5,563	7,789	9,064	3,797	5,562	7,792	9,058
T044 - NextEra Enh 2	3,412	3,774	4,242	5,064	3,831	5,604	7,853	9,130	3,835	5,605	7,852	9,130
T047 - Propel Base 1	3,507	3,880	4,359	5,191	3,867	5,684	7,958	9,268	3,872	5,685	7,955	9,261
T048 - Propel Base 2	3,420	3,787	4,259	5,082	3,844	5,630	7,884	9,174	3,841	5,631	7,881	9,169
T049 - Propel Base 3	3,425	3,794	4,268	5,097	3,863	5,678	7,945	9,259	3,862	5,677	7,945	9,252
T051 - Propel Alt 5	3,426	3,797	4,267	5,094	3,857	5,651	7,908	9,199	3,855	5,652	7,908	9,193
T052 - Propel Alt 6	3,436	3,805	4,277	5,102	3,869	5,661	7,923	9,219	3,869	5,664	7,921	9,216
T053 - Propel Alt 7	3,415	3,786	4,254	5,074	3,847	5,632	7,879	9,170	3,847	5,632	7,875	9,163

Emissions

Appendix L, Figures 11-13 contain the estimates for CO₂ emissions; Figures 20-22 contain the estimates for SO₂ emissions; and Figures 23-25 contain the estimates for NO_x emissions.

Installed Capacity Costs

Appendix N, Figure 18 contains the total capital cost reduction for a selected set of proposed projects for the Policy and Policy + Barrett-Valley Stream Scenarios.

Transmission Congestion Contract Revenues

The figure below shows the total NYCA transmission congestion rent, representing the total potential transmission congestion contract revenue, for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Figure 3: Transmission Congestion Rent (\$M)

Case	Transmission Congestion Rent (\$M)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	443	669	633	693	729	3,527	6,973	8,801	864	3,630	7,157	9,018
T035 - LS Power	407	579	527	600	650	3,357	6,517	8,125	650	3,364	6,555	8,171
T036 - NextEra Core 1	422	589	554	621	683	3,389	6,743	8,550	871	3,591	6,935	8,835
T037 - NextEra Core 2	405	550	515	588	649	3,299	6,540	8,183	838	3,502	6,731	8,472
T038 - NextEra Core 3	402	547	509	566	646	3,317	6,368	7,927	852	3,508	6,564	8,225
T039 - NextEra Core 4	484	602	608	701	655	3,397	6,732	8,614	855	3,581	6,926	8,925
T040 - NextEra Core 5	402	563	513	558	670	3,359	6,442	8,038	866	3,549	6,658	8,326
T041 - NextEra Core 6	421	589	544	598	681	3,407	6,575	8,325	880	3,615	6,766	8,598
T042 - NextEra Core 7	421	589	544	598	681	3,407	6,575	8,325	880	3,615	6,766	8,598
T043 - NextEra Enh 1	447	561	545	628	582	3,285	6,382	7,986	792	3,486	6,591	8,212
T044 - NextEra Enh 2	447	563	546	634	575	3,280	6,390	8,007	771	3,467	6,612	8,007
T047 - Propel Base 1	408	578	528	600	667	3,357	6,542	8,185	884	3,565	6,896	8,700
T048 - Propel Base 2	407	577	530	597	673	3,355	6,717	8,407	903	3,593	7,025	8,916
T049 - Propel Base 3	404	570	524	590	665	3,352	6,543	8,148	715	3,394	6,689	8,399
T051 - Propel Alt 5	407	576	528	598	665	3,359	6,478	8,098	879	3,549	6,830	8,613
T052 - Propel Alt 6	406	576	527	593	666	3,338	6,477	8,084	874	3,535	6,699	8,375
T053 - Propel Alt 7	406	574	522	575	669	3,348	6,475	8,083	889	3,537	6,720	8,420

Transmission Congestion

The figure below shows the total NYCA demand congestion cost for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.

Figure 4: Demand Congestion (\$M)

Case	Demand Congestion (\$M)											
	Baseline				Policy				Policy + B-VS			
	2030	2035	2040	2045	2030	2035	2040	2045	2030	2035	2040	2045
Pre-Project	186	286	302	374	301	3,562	10,795	14,449	316	3,751	11,079	14,781
T035 - LS Power	206	286	298	433	324	3,630	10,772	14,399	322	3,636	10,833	14,463
T036 - NextEra Core 1	222	325	349	440	265	3,618	11,033	14,890	295	3,655	11,167	15,004
T037 - NextEra Core 2	204	318	325	421	267	3,516	10,776	14,444	325	3,568	10,904	14,589
T038 - NextEra Core 3	203	315	310	392	265	3,546	10,766	14,389	324	3,593	10,882	14,550
T039 - NextEra Core 4	327	342	442	574	271	3,608	11,100	15,082	330	3,644	11,260	15,293
T040 - NextEra Core 5	202	300	300	376	294	3,593	10,819	14,490	334	3,630	10,980	14,658
T041 - NextEra Core 6	222	327	330	410	269	3,669	10,974	14,805	297	3,721	11,087	14,946
T042 - NextEra Core 7	222	327	330	410	269	3,669	10,974	14,805	297	3,721	11,087	14,946
T043 - NextEra Enh 1	271	290	351	467	296	3,513	10,712	14,399	287	3,558	10,837	14,457
T044 - NextEra Enh 2	266	270	340	481	282	3,495	10,632	14,273	264	3,553	10,782	14,273
T047 - Propel Base 1	207	283	304	434	302	3,621	10,859	14,603	309	3,653	10,994	14,801
T048 - Propel Base 2	204	282	301	431	308	3,612	10,840	14,571	311	3,698	11,132	15,018
T049 - Propel Base 3	198	271	303	425	302	3,600	10,857	14,572	300	3,610	10,856	14,632
T051 - Propel Alt 5	207	282	301	424	313	3,643	10,867	14,582	312	3,649	10,988	14,761
T052 - Propel Alt 6	201	286	303	423	305	3,583	10,856	14,559	316	3,611	10,930	14,645
T053 - Propel Alt 7	202	285	295	400	303	3,588	10,836	14,505	314	3,607	10,936	14,604

Impacts on Transfer Limits

Appendix I, Figures 2-5 contain the N-1 transfer limit calculation results for each of the Policy and Policy + Barrett-Valley Stream Scenarios.

Resource Deliverability

Appendix L, Figures 7-9 contain the energy deliverability metric results for each of the Baseline, Policy, and Policy + Barrett-Valley Stream Scenarios.