

RESRFP22-1 Appendix 5

Energy Deliverability Study Requirements

As described in Section 4.1.1 Energy Deliverability of RESRFP22-1, all Proposers of new (i.e., not yet operating) Bid Facilities with a point of interconnection in the New York Control Area will be required to provide an Energy Deliverability Study with respect to their proposed Bid Facility as part of the Step Two Bid Proposal unless the Proposer can demonstrate to NYSERDA's satisfaction that the Bid Facility is interconnecting at a point of interconnection with sufficient capability to deliver the facility's expected annual generation without material adverse impacts to deliverability and incremental curtailment to other large-scale renewable projects operating or under development and under contract with NYSERDA. This Appendix sets forth the requirements and guidelines that Proposers must adhere to when developing and administering an Energy Deliverability Study.

Confirming the Energy Deliverability Study Requirement

All Bid Facilities will be required to provide an Energy Deliverability Study as described herein unless (1) a study exemption request is filed with NYSERDA seeking confirmation that a study is not required for the Bid Facility and NYSERDA confirms that no study is required, or (2) if a request is not filed prior to the Step One Eligibility Application submission deadline, if NYSERDA exempts the Bid Facility from the study requirement as part of the Notice of Qualification for Bid Facilities deemed eligible to submit a Step Two Bid Proposal.

Proposers are strongly encouraged to contact NYSERDA as soon as practicable via the [solicitation website](#) Messages feature and/or via email to res@nyserda.ny.gov to seek a determination confirming if an Energy Deliverability Study is required. This request should include the following information:

- Bid Facility Name
- Bid Facility Technology
- Nameplate Capacity (MWac)
- Proposed Point of Interconnection
- If an exemption is requested, a brief justification as to why the Bid Facility's nameplate capacity and point of interconnection does not warrant a required Energy Deliverability Study.

Reasons that could lead to a determination that an Energy Deliverability Study is not required include:

- The Bid Facility is connecting at a point of interconnection with sufficient headroom to enable the delivery of the facility's generation without adverse deliverability impacts to

the Bid Facility and/or other operating or under development and contracted to NYSERDA Large-Scale Renewable projects, accounting for both operating and under development generators that have been modeled in the Utilities' Headroom Data filings under [Case 20-E-0197](#)¹ and under development generators actively under contract to NYSERDA (See Tables 1 and 2 below).

- The Bid Facility is interconnecting at a voltage level such that adverse energy deliverability impacts are unlikely to occur (compared to points of interconnection at lower voltage levels that may present greater risk of adverse deliverability impacts).

A Bid Facility would create material adverse deliverability impacts if, when placed in service, the Bid Facility would experience significant levels of curtailment of its own annual generation, and/or would result in significant incremental estimated curtailment to NYSERDA's Large-Scale Renewable portfolio of projects that are either operating or under development and contracted to NYSERDA.

NYSERDA will provide to each Proposer the rationale indicating why an Energy Deliverability Study is required, if such a determination is made, at the latest as part of the Notice of Qualification provided to eligible Step Two Proposers.

Energy Deliverability Study Requirements and Assumptions

If an Energy Deliverability Study is required, each Proposer must conduct the study with reasonable modelling assumptions as described herein.

Generally, all Energy Deliverability Studies must adhere to the methodology and assumptions set forth by the New York Independent System Operator (NYISO) as outlined in Attachment Y – New York ISO Comprehensive System Planning Process of the [NYISO Open Access Transmission Tariff](#) (OATT), and further detailed in the draft (or final once published) [NYISO 2021-2040 System & Resource Outlook](#) (the Outlook), including the modelling assumptions detailed in [Appendix C. Production Cost Assumptions Matrix and Appendix E. Study Assumptions and Methodology](#) to the Outlook.

All Energy Deliverability Studies must be performed via nodal production cost modelling in order to accurately assess the energy deliverability capabilities and potential curtailment impacts associated with the proposed generation of the Bid Facility. Key assumptions and guidelines for the study methodology are summarized below.

All Energy Deliverability Studies should be aligned to the extent possible with the NYISO resources cited above, and must clearly identify the assumptions used for the following modelling assumptions and data sources. Instances in which assumptions or study methodology

¹ Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act, Public Service Commission Case 20-E-0197

diverge from the resources cited above and/or the assumptions detailed below should be clearly described in the submitted Energy Deliverability Study.

Key Energy Deliverability Study Assumptions

- **Load Forecast:** All Energy Deliverability Studies must utilize the [2030 Outlook Scenario 2 Peak Load and Load Shape Forecast](#), available for download from the NYISO Electric System Planning Working Group (ESPWG) [2021-2040 Outlook Data Catalog](#).
- **Generator Modelling:** Studies must ensure that all New York State large-scale renewable generators, both operating and under development and contracted to NYSERDA (included in Tables 1 and 2 below), are assumed as operating. Generator retirements published in the NYISO 2022 Gold Book that will occur prior to 2030 should be reflected.
- **Intermittent Resource Generation Profiles:** All modeled renewable generators must be modeled with reasonable generation profiles based on the technology of the generator with the source of the generation profiles clearly defined in the study. Proposers must detail what generation profiles and assumed net capacity factors were used for the submitted Energy Deliverability Study assumptions. The input generation profile for the Bid Facility should be consistent with the profile submitted in response to other Step Two submittal requirements.
- **Generator Data:** All studies should clearly state the sources of the modeled maintenance schedules, fixed and variable operations and maintenance costs, generator heat rates, generator emissions rates, and fuel price forecasts.
- **Energy Market Bid Modelling for REC-Contracted Generators:** Studies should utilize consistent and reasonable assumptions when estimating energy market bidding for REC-contracted generators. Proposers must clearly detail consistent and reasonable assumptions for energy market bid modelling for REC-contracted generators.
- **Transmission Model:** Studies should utilize transmission topology consistent with the Outlook, and may include any additional transmission infrastructure not reflected in the Outlook that has been approved by the Public Service Commission (e.g., NYISO Public Policy Transmission Need (PPTN) transmission projects, Power Grid Study Phase 1 and/or Phase 2A transmission projects/upgrades) if the project(s) has an estimated in service prior to 2030. Temperature-adjusted ratings should be utilized as appropriate.
- **Transfer Limits:** Studies should use transfer limits consistent with the Outlook. Proposers should detail what transfer limits were used for the submitted Energy Deliverability Study assumptions.

Table 1. List of Generators to be included in Energy Deliverability Study Case and Modeled in Utility Headroom Data Filing (August 1, 2022)

Queue Pos.	Project Name	Utility	Utility District	Capacity (MW)
0173	Bliss Windfield	NM-NG	Southwest	72
0212	Bliss II Windfield	NM-NG	Southwest	29
0387	Cassadaga Wind	NM-NG	Southwest	127
0421	Arkwright Summit	NM-NG	Southwest	78
0505	Ball Hill Wind	NM-NG	Southwest	100
0666	Martin Rd Solar	NM-NG	Southwest	20
0667	Bakerstand Solar 1	NM-NG	Southwest	20
0704	Bear Ridge Solar	NM-NG	Genesee	100
0055	Fenner Wind	NM-NG	East of Syracuse	30
0276	Homer Solar Energy Center	NM-NG	East of Syracuse	90
0545	Sky High Solar	NM-NG	East of Syracuse	20
0395	Copenhagen Wind	NM-NG	Watertown/Oswego/Porter	80
0546	Roaring Brook Wind	NM-NG	Watertown/Oswego/Porter	77.7
0531	Number Three Wind	NM-NG	Watertown/Oswego/Porter	104
0848	SunEast Fairway Solar	NM-NG	Watertown/Oswego/Porter	20
0156	Hardscrabble Wind	NM-NG	Porter-Rotterdam	74
0495	Mohawk Solar	NM-NG	Porter-Rotterdam	91
0564	Rock District Solar	NM-NG	Porter-Rotterdam	20
0565	Tayandenega Solar	NM-NG	Porter-Rotterdam	20
0581	SunEast Hills Solar	NM-NG	Porter-Rotterdam	20
0586	SunEast Watkins Road Solar	NM-NG	Porter-Rotterdam	20
0618	High River Energy Center	NM-NG	Porter-Rotterdam	90
0619	East Point Energy Center	NM-NG	Porter-Rotterdam	50
0638	Pattersonville	NM-NG	Porter-Rotterdam	20
0670	SunEast Skyline Solar	NM-NG	Porter-Rotterdam	20
0682	Grissom Solar	NM-NG	Porter-Rotterdam	20
0748	Regan Solar	NM-NG	Porter-Rotterdam	20
0730	Darby Solar	NM-NG	Capital/Northeast	20
0731	Branscomb Solar	NM-NG	Capital/Northeast	20
0734	ELP Ticonderoga Solar	NM-NG	Capital/Northeast	20
0735	ELP Stillwater Solar	NM-NG	Capital/Northeast	20
0807	SunEast Hilltop Solar	NM-NG	Capital/Northeast	20
0833	Dolan Solar	NM-NG	Capital/Northeast	20
0855	Bald Mountain Solar	NM-NG	Capital/Northeast	20
0570	Coeymans Solar	NM-NG	Albany South	20
0572	Greene County 1	NM-NG	Albany South	20
0573	Greene County 2	NM-NG	Albany South	10
0598	Albany County 2	NM-NG	Albany South	20
0637	Flint Mine Solar	NM-NG	Albany South	100
0644	Shepherd's Run Solar	NM-NG	Albany South	60
0768	Janis Solar	Avangrid	Binghamton	20
0617	Watkins Glen Solar Energy Center	Avangrid	Elmira	50

Queue Pos.	Project Name	Utility	Utility District	Capacity (MW)
0863	Highbanks Solar	Avangrid	Genesee Valley	20
0720	Trelina Solar Energy Center	Avangrid	Geneva	80
135	Canandaigua Wind	Avangrid	Hornell	125
182	Howard Wind	Avangrid	Hornell	55.4
378	Marsh Hill	Avangrid	Hornell	16.2
144	High Sheldon	Avangrid	Hornell	118.1
263	Stoney Creek	Avangrid	Hornell	93.9
177	Wethersfield	Avangrid	Hornell	126
0422	Eight Point Wind Energy Center	Avangrid	Hornell	101.8
0519	Canisteo Wind	Avangrid	Hornell	290.7
0596	Alle Catt II Wind	Avangrid	Lancaster	339
0706	High Bridge Wind	Avangrid	Oneonta	100.8
127A	Munnsville	Avangrid	Oneonta	34.5
	Madison Wind	Avangrid	Oneonta	11.6
0579	Bluestone Wind	Avangrid	Oneonta	111.8

Table 2. List of Generators to be included in Energy Deliverability Study Case Not Yet Included in Utility Headroom Data Filing (August 1, 2022)

Queue Pos.	Project Name	Utility	Utility District/ Region	Capacity (MW)
1098	SunEast Kingbird Solar	NM-NG	Southwest	20
1151	York Run Solar	NM-NG	Southwest	90
0571	Heritage Wind	NM-NG	Genesee	147
0710	Horseshoe Solar	NM-NG	Genesee	180
0932	Hatchery Solar	NM-NG	Genesee	20
1051	SunEast Transit Solar	NM-NG	Genesee	20
1000	SunEast Flat Stone Solar	NM-NG	East of Syracuse	20
0774	Tracy Solar Energy Center	NM-NG	Watertown/Oswego/Porter	119
0843	Sandy Creek Solar	NM-NG	Watertown/Oswego/Porter	20
0864	Greens Corners Solar	NM-NG	Watertown/Oswego/Porter	120
1077	Rutland Center Solar 1	NM-NG	Watertown/Oswego/Porter	110
1141	Twinleaf Solar	NM-NG	Watertown/Oswego/Porter	75
1150	Moss Ridge Solar	NM-NG	Watertown/Oswego/Porter	60
1212	Roosevelt Solar	NM-NG	Watertown/Oswego/Porter	20
0806	SunEast Limestone Solar	NM-NG	Porter-Rotterdam	20
0869	SunEast Tabletop Solar	NM-NG	Porter-Rotterdam	80
1038	ELP Rotterdam Solar	NM-NG	Porter-Rotterdam	20
1138	Wintergreen Solar	NM-NG	Porter-Rotterdam	75
1178	Newport Solar Farm	NM-NG	Porter-Rotterdam	130
1182	Foothills Solar Farm	NM-NG	Porter-Rotterdam	40
1227	Scotch Ridge Solar	NM-NG	Porter-Rotterdam	20
0865	SunEast Flat Hill Solar	NM-NG	Capital/Northeast	20
0885	SunEast Grassy Knoll Solar	NM-NG	Capital/Northeast	20
1015	Somers Solar	NM-NG	Capital/Northeast	20

Queue Pos.	Project Name	Utility	Utility District	Capacity (MW)
1035	Easton Solar Farm	NM-NG	Capital/Northeast	20
1042	Fort Edward Solar Farm	NM-NG	Capital/Northeast	100
1165	West River Solar	NM-NG	Capital/Northeast	20
1198	Stern Solar	NM-NG	Capital/Northeast	20
1171	ELP Stuyvesant Solar	NM-NG	Albany South	20
1088	Harvest Hills Solar	Avangrid	Auburn	200
1238	Harvest Hills Solar 2	Avangrid	Auburn	100
0590	SunEast Scipio Solar	Avangrid	Binghamton	20
0775	Puckett Solar	Avangrid	Binghamton	20
0828	SunEast Valley Solar	Avangrid	Binghamton	20
0396	Baron Winds	Avangrid	Hornell, Elmira & Bath	272
0591	SunEast Highview Solar	Avangrid	Hornell, Elmira & Bath	20
0629	Silver Lake Solar	Avangrid	Hornell, Elmira & Bath	25
0716	Moraine Solar Energy Center	Avangrid	Hornell, Elmira & Bath	93.6
0717	Morris Ridge Solar	Avangrid	Hornell, Elmira & Bath	170
0801	Prattsburgh Wind Farm	Avangrid	Hornell, Elmira & Bath	145
1003	Clear View Solar	Avangrid	Hornell, Elmira & Bath	20
1096	Alfred Oaks Solar	Avangrid	Hornell, Elmira & Bath	100
1137	Orangeville Solar	Avangrid	Hornell, Elmira & Bath	75
1139	Seventy Seven Solar	Avangrid	Hornell, Elmira & Bath	100
0584	SunEast Dogs Corners Solar	Avangrid	Ithaca	20
1009	Yellow Barn Solar	Avangrid	Ithaca	160
0592	SunEast Niagara Solar	Avangrid	Lancaster	20
0935	SunEast Augustus Solar	Avangrid	Oneonta	20
497/521	Bull Run Wind	NYPA	n/a	449
0577	Greene County Energy Properties	CHGE	n/a	20
0575	Little Pond Solar	O&R	n/a	20
0620	North Side Energy Center	NYPA	n/a	180
0686	Bull Run Solar	NYPA	n/a	170
0721	Excelsior Energy Center	NYPA	n/a	280
0783	South Ripley Solar	NM-NG	n/a	270
0800	Rich Road Solar Energy Center	NYPA	n/a	240
0811	Cider Solar Farm	NYPA	n/a	500
0832	Hawthorn Solar	NM-NG	n/a	20
0857	Columbia Solar Energy Center	NYPA	n/a	350
0859	Ridge View Solar Energy Center	NYSEG	n/a	350
871/873	Verona Solar I & II	NYPA	n/a	350
0883	Garnet Energy Center	NYPA	n/a	200
0913	SunEast Manchester Solar	NM-NG	n/a	20
1031	Mill Point Solar	NM-NG	n/a	250
1089	SunEast Flat Creek Solar	NYPA	n/a	200
1115	SunEast Flat Creek Solar II	NYPA	n/a	100
1140	Taproot Solar	NM-NG	n/a	205
1183	Fort Covington Solar Farm	NYPA	n/a	250
1231	Mill Point Solar 2	NM-NG	n/a	100