

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Reactive Power Capability Compensation

Docket No. RM22-2-000

**NOTICE OF INQUIRY COMMENTS OF
THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.**

The New York Independent System Operator, Inc. (“NYISO”) respectfully submits its comments in response to the *Notice of Inquiry* in the above-captioned proceeding issued by the Federal Energy Regulatory Commission (“Commission”) on November 18, 2021 (“Notice”).¹ In its comments, the NYISO addresses certain topics raised in the Commission’s Notice. The NYISO has compensated resources using a flat rate, dollars per MVar-year, structure for more than 20 years. This compensation structure produces sufficient reactive power capability throughout New York to maintain electric system reliability year after year. The NYISO appreciates the opportunity to work with the Commission and Commission Staff through the submission of written comments.

The NYISO requests that the Commission allow the NYISO’s current reactive power compensation program to remain in effect. The NYISO also requests that the Commission continue to provide regional flexibility for ISOs/RTOs to retain or develop different reactive power and voltage support service compensation frameworks. The Commission should not impose a uniform implementation approach for reactive power capability compensation.

¹ Reactive Power Capability Compensation, *Notice of Inquiry*, Docket No. RM22-2-000 (November 18, 2021).

I. COMMENTS

A. NYISO's Existing Reactive Power and Voltage Support Service Compensation Structure

Voltage support service is an essential ancillary service for maintaining reliable bulk power system operations. Since Commission Order No. 888, voltage support has been a mandatory transmission ancillary service and transmission providers must provide at least some reactive power to the transmission system from generators.² In order to maintain transmission voltages on the NYS Transmission System within acceptable limits, facilities under the control of the NYISO are operated to produce or absorb Reactive Power.³ Reactive Supply and Voltage Control Service ("Voltage Support Service") is necessary to support all Transactions on the NYS Transmission System. The Commission has also long directed that voltage support suppliers be compensated.⁴

Since its inception in 1999, the NYISO has coordinated the provision of Voltage Support Service and compensated eligible providers of such service.⁵ Rate Schedule 2 of the NYISO Market Administration and Control Area Services Tariff ("Services Tariff") provides for an annual capacity payment per megavar ("MVAR") to those generators in the New York Control

² *Promoting Wholesale Competition Through Open-Access Non-Discriminatory Transmission Service by Public Utilities: Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*. Order No. 888, FERC Stats. & Regs., Regulations Preambles January 1991 - June 1996 ¶ 31,036, at ¶ 31,707 (1996), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs., Regulations Preambles July 1996 - December 2000 ¶ 31,048 at 30,319 (1997). *Order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*. Order No. 888-C, 82 FERC ¶ 61,046 (1998). *aff'd in relevant part sub nom. Transmission Access Study Policy Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002) ("The transmission provider must provide at least some reactive power from generation sources. For this reason, and because a transmission customer has the ability to affect the amount of reactive supply required, we will require that reactive supply and voltage control service be offered as a discrete service, and to the extent feasible, charged for on the basis of the amount required").

³ Capitalized terms that are not otherwise defined herein shall have the meaning specified in the Services Tariff.

⁴ See e.g., *Midwest Independent Transmission System Operator Inc.*, 109 FERC ¶ 61,005 (2004), *order on reh'g*. 110 FERC ¶ 61,267 (2005) (rejecting the Midwest ISO's proposed revisions to its Rate Schedule 2 and directing it to provide compensation for generators providing reactive power and voltage control services).

⁵ Voltage Support Service ("VSS") is provided under Rate Schedule 2 of the NYISO's Open Access Transmission Tariff ("OATT").

Area (“NYCA”) that qualify for voltage support payment under the NYISO Tariffs and procedures.⁶

In 2002, the NYISO implemented, with the support of its Market Participants, a single flat rate for lagging reactive power capability. The 2002 rate was determined from the Commission-approved cost-based rates for Voltage Support Service for vertically integrated generation owners in New York State that was available at the time.⁷ The NYISO and Market Participants agreed to the \$3,919/MVAr compensation rate based on total costs associated with the total available MVAr of reactive power supply.⁸ During this time, qualified Voltage Support Service providers received \$3,919/MVAr annually for their demonstrated lagging reactive power capability. The \$3,919/MVAr compensation rate remained in effect through 2015. For approximately 15 years, this Commission-accepted compensation structure facilitated sufficient voltage support service to maintain reliable bulk power system operations.

In 2016, the NYISO implemented a modified, Commission-accepted Voltage Support Service compensation structure. The redesign set forth a just and reasonable rate to compensate Voltage Support Service providers for both leading and lagging reactive power capability based on a substantial increase in the number of NYISO requests for leading reactive power support. Between 2010 and 2014, the number of NYISO requests for leading reactive power support substantially increased due to higher off-peak transmission voltages. More than 90% of the NYISO’s reactive power support requests during this time were for leading reactive power

⁶ VSS suppliers are also compensated under Services Tariff Rate Schedule 2 for lost opportunity costs incurred when they reduce their energy output in order to provide VSS.

⁷ *New York Independent System Operator, Inc. Filing of Amended Rate Schedule 2 for Market Administration and Control Area Services Tariff, to Provide Payments for Voltage Support Service, and Request for Expedited Action, and Request for Clarification of Prior Payments*, Docket No. ER02-617, December 27, 2001 at p. 6.

⁸ *Id.* at 6-7.

support. In contrast, prior to 2010, more than 90% of the NYISO's reactive power support requests were for lagging reactive power support. Based on the observed pattern of requests for reactive power, the NYISO and its stakeholders developed a revised compensation rate for reactive power.

The 2016 Voltage Support Service compensation structure began paying qualified Suppliers \$2,592/MVAr for the total of their demonstrated lagging and leading reactive power capability. While this per MVAr rate is lower than the prior per MVAr compensation rate, most qualified Suppliers observed increases to their annual Voltage Support Service compensation when leading reactive power capability became eligible for payment. The revised rate was determined after considering the system need for reactive power capability to maintain reliability, the total cost of the reactive power program, the cost information available to the NYISO, and extensive discussions with Market Participants.⁹ Qualified Suppliers are now required to demonstrate both lagging and leading reactive power capability annually with test results or operational data. This compensation structure encourages Suppliers to more accurately demonstrate leading reactive power capability through precise testing or actual operations data.

The NYISO adjusts the compensation rate annually based on the average annual Consumer Price Index ("CPI") and has done so since 2016. The NYISO added a CPI inflator to its latest compensation modification in response to stakeholder feedback. The CPI inflator escalates Voltage Support Service payments over time in accordance with cost and inflation trends.¹⁰

⁹ See Docket No. ER15-1042-000, *New York Independent System Operator, Inc.*, Proposed Amendments to its Market Administration and Control Area Services Tariff Rate Schedule 2 (February 13, 2015); and *New York Independent System Operator, Inc.*, 151 FERC ¶ 61,281 (2015).

¹⁰ *New York Independent System Operator, Inc.*, 135 FERC ¶ 61,170 (2011) at PP 82 and 82 (CPI is also the escalation index used for the NYISO ICAP demand curves).

Currently qualified Suppliers of Voltage Support Service are compensated \$2,965.84/MVAr annually based on their demonstrated leading and lagging reactive power capability. Such capability must be demonstrated by a reactive power test or operational data from specified periods throughout the calendar year in accordance with NYISO Procedures.¹¹ Compensating Suppliers for demonstrated leading and lagging reactive power capability encourages Resources to accurately determine their total reactive power capability and to maintain the equipment necessary to provide the service, all of which supports reliable bulk power system operations.

The NYISO's existing Reactive Power and Voltage Support Service compensation structure procures sufficient leading and lagging reactive power capability to maintain a reliable electric system.

B. Qualified Suppliers of Voltage Support Service in the NYCA

The NYISO requires that Suppliers of Voltage Support Service meet the following criteria. Each Resource must be able to produce and absorb Reactive Power within its tested reactive capability range.¹² Resources must be able to maintain a specific voltage level under both steady-state and post-contingency operating conditions, subject to the limitation of the tested reactive capability. Each Resource must successfully perform a Reactive Power (MVAr) capability test each year in accordance with the NYISO Procedures or provide the necessary operational data to demonstrate the Resource's capability. Resources must have functioning automatic voltage controlling equipment to be able to automatically respond to voltage control

¹¹ See NYISO Ancillary Services Manual Section 3.6, <https://www.nyiso.com/documents/20142/2923301/ancserv.pdf/df83ac75-c616-8c89-c664-99dfea06fe2f>.

¹² If the resource is precluded from running in "lead" mode in which it can absorb reactive power, then the unit is not eligible to provide Voltage Support Services. For information on exemptions from the requirement to absorb Reactive Power, see section 3.6.6. Exemption from Requirement to Absorb Reactive Power.

signals. The automatic voltage controlling equipment could include, but is not limited to, an Automatic Voltage Regulator (AVR) for non-inverter-based resources or inverters capable of automatic voltage control for inverter-based resources. Each Resource must be under the operational control of the NYISO or a New York Transmission Owner.

Any Supplier that satisfies the criteria described above can provide and be compensated for Voltage Support Service in the NYCA. The NYISO Services Tariff defines a Supplier as a party that is supplying the Capacity, Demand Reduction, Energy and/or associated Ancillary Services to be made available under the OATT or the Services Tariff, including Generators, Behind-the-Meter Net Generation Resources, Energy Storage Resources, and Demand Side Resources that satisfy all applicable NYISO requirements.¹³ Qualified non-Generator Resources, such as Scheduled Lines, may also provide Reactive Power in the NYCA.¹⁴ Voltage Support Service Suppliers are not restricted to any specific technology types. Qualified Suppliers of Voltage Support Service may include combined cycle units, Energy Storage Resources, and Intermittent Power Resources.

Wind or solar Intermittent Power Resources and Energy Storage Resources that participate in the NYISO-administered markets as a Co-located Storage Resource (“CSR”) may also participate in the Voltage Support Service program. The compensation paid to each Supplier in a CSR is calculated from its demonstrated Reactive Power capability or will be

¹³ Services Tariff Section 2.19.

¹⁴ See Services Tariff Section 2.17. “**Qualified Non-Generator Voltage Support Resource:** A resource that is neither a Generator nor a synchronous condenser but that is capable of providing the ISO with Reactive Power on a dynamic basis, that is energized and under the operational control of the ISO, or a Transmission Owner, that meets the resource-specific technical and testing criteria specified in the ISO Procedures, and that is ineligible to receive Reactive Power compensation other than as a Qualified Non-Generator Voltage Support Resource. The Cross-Sound Scheduled Line shall be a Qualified Non-Generator Voltage Support Resource, provided that it meets the technical and testing criteria in the ISO Procedures.” The Cross-Sound Scheduled Line satisfied the technical and testing criteria and is a Qualified Non-Generator Voltage Support Resource that is paid to provide Voltage Support Service in New York.

limited to the total Reactive Power capability at the CSR's Point of Injection if the total Reactive Power capability at the Point of Injection is less than the capability of the individual resource.

The NYISO's accepted, but not yet effective, Distributed Energy Resource ("DER") rules do not permit Aggregations of distributed resources to qualify for Voltage Support Service compensation.¹⁵ DERs are primarily expected to be connected to the distribution system. They are unlikely to provide measurable and beneficial Voltage Support Service to the Bulk Electric System because any reactive power provided on the distribution system will experience high losses due to motors, transformers, and impedance at the distribution level.

C. NYISO's Voltage Support Service Rate Provides the Right Incentives

The NYISO's Voltage Support Service program encourages Resources to provide cost-effective Reactive Power and voltage support. Since qualified Resources are compensated for their total Reactive Power capability, the NYISO program mimics a market by providing more annual compensation as a Resource's capability increases. Resources that can provide Voltage Support Service at a lower cost than the NYISO's compensation rate increase their profit by demonstrating additional Reactive Power capability. Resources with higher Voltage Support Service costs are encouraged to provide little or no Reactive Power.

The NYISO's approach rewards competitive advantage the same way a well-functioning market would if a Reactive Power market was possible.¹⁶ These incentives do not exist when Reactive Power capability is compensated through unit-specific cost-based payments, or as a component of installed capacity market requirements.

¹⁵ See Docket No. ER19-2276-000, *New York Independent System Operator, Inc.*, Proposed Tariff Revisions Regarding Establishment of Participation Model for Aggregations of Resources, Including Distributed Energy Resources, and Proposed Effective Dates (June 27, 2019); and *New York Independent System Operator, Inc.*, 170 FERC ¶ 61,033 (2020).

¹⁶ A well-functioning, competitive Reactive Power market cannot be administered by the ISOs/RTOs because Reactive Power needs are highly localized with few resources capable of meeting the need.

D. The Commission Should Allow for Regional Flexibility

Any Reactive Power compensation requirements should account for regional flexibility based on the existing, Commission-accepted approaches that continue to be just and reasonable. The NYISO, therefore, requests that the Commission provide regional flexibility for ISOs/RTOs to retain or develop different Reactive Power compensation frameworks. The Commission should not impose a uniform implementation approach for Reactive Power capability compensation.

II. COMMUNICATIONS AND CORRESPONDENCE

All communications regarding this filing should be directed to:

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III. CONCLUSION

The NYISO respectfully submits these comments for the Commission's consideration and requests that the Commission allow the NYISO to maintain its current Reactive Power compensation program.

Respectfully submitted,

/s/ James H. Sweeney

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. §385.2010.

Dated at Rensselaer, NY this 22nd day of February 2022.

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