UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Solar Energy Industries Association	)	
v.	)	Docket No. EL23-_____
Midcontinent Independent System Operator, Inc.	)	

COMPLAINT OF SOLAR ENERGY INDUSTRIES ASSOCIATION

Aaron Stemplewicz
Staff Attorney
Earthjustice
1617 J.F.K. Blvd., Suite 1130
Philadelphia, PA 19103
T: 202.797.5247
astemplewicz@earthjustice.org

Christine Powell
Deputy Managing Attorney
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111
T: 415.217.2035
cpowell@earthjustice.org

Melissa Alfano
Director of Energy Markets & Counsel
Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2873
malfano@seia.org

Ben Norris
Senior Director of Regulatory Affairs & Counsel
Solar Energy Industries Association

1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2909
bnorris@seia.org

Dated: January 31, 2023

TABLE OF CONTENTS

I. COMMUNICATIONS 2

II. THE PARTIES 3

1. Solar Energy Industries Association 3

2. Respondent 4

III. INTRODUCTION AND EXECUTIVE SUMMARY 4

IV. BACKGROUND 12

1. Factual Background 12

i. Ancillary Grid Services in the MISO Tariff 12

ii. MISO Prohibition of Dispatchable Intermittent Resources 13

iii. MISO Never Intended for the Prohibition to be Permanent 14

iv. DIR Ancillary Service Technical Capabilities 17

2. Value of DIRs Providing Ancillary Services in MISO 26

V. DISCUSSION 30

1. MISO's Blanket Prohibition is Unduly Discriminatory and Results in Rates that are Unjust and Unreasonable 30

i. The Blanket Prohibition on Wind and Solar Resources from Providing the Services they are Technically Capable of Providing is Unduly Discriminatory and Preferential 32

ii. Unjust and Unreasonable Rates Under the FPA 45

iii. The Blanket Prohibition on Wind and Solar Resources from Providing the Services Results in Rates that are Unjust and Unreasonable 46

VI. REMEDY REQUESTED 47

VII. RULE 206 REQUIREMENTS 48

VIII. CONCLUSION 50

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Solar Energy Industries Association	)	
v.	)	Docket No. EL23-_____
Midcontinent Independent System Operator, Inc.	)	

Pursuant to Sections 206 and 306 of the Federal Power Act (hereafter "FPA"), 16 U.S.C. §§ 824e and 825e, and Rules 206 and 212 of the Federal Energy Regulatory Commission's (hereafter "FERC" or "Commission") Rules of Practice and Procedure, 18 C.F.R. §§ 385.206 and 385.212, Solar Energy Industries Association, (hereafter "SEIA") hereby files this Complaint against Midcontinent Independent System Operator, Inc. (hereafter "MISO" or "Respondent").

This Complaint requests two primary actions:

1) that the Commission find that MISO Tariff provisions[1] and business practices manual protocols[2] prohibiting wind, solar, and battery hybrid resources

[1] *See, e.g.*, MISO Tariff, Section 39.2.1.B, "Resource Requirements for Operating Reserves" ("Regulation Qualified Resources in the Day-Ahead Energy and Operating Reserve Market will be limited to (i) committed Generation Resources that are not Dispatchable Intermittent Resources . . .").
[2] *See, e.g.,* BPM-002-r22 at 151 ("[Dispatchable intermittent resources] are not eligible to provide Operating Reserves or Short-Term Reserve to the Day-Ahead or Real-Time Energy and Operating Reserves Markets. For this reason, DIRs do not submit Dispatch Statuses for Regulating, Spinning, On-Line Supplemental, Off-line Supplemental or Short-Term Reserves").

from providing the ancillary services[3] that they are technically capable of providing are unjust, unreasonable, and unduly discriminatory or preferential pursuant to the FPA; and

2) that the Commission order MISO to reform the current ancillary service Tariff provisions and business practices manual to allow wind, solar and battery hybrid resources to be eligible to participate in MISO's ancillary services wholesale market. The Commission should direct that MISO's Tariff and business practices manual be reformed with a technology neutral approach so that all resources technically capable of providing various ancillary services products under the Tariff be permitted to provide such products.[4]

This Complaint is supported by the Declaration of Michael Milligan.[5] Also, attached are copies of the various studies and reports that support the Complaint.[6]

I. COMMUNICATIONS

Communications regarding this matter should be addressed to the following persons, who also should be designated for service on the Commission's official list:

Aaron Stemplewicz
Staff Attorney

---

[3] These ancillary services include: Regulating, Spinning, On-Line Supplemental, or Off-line Supplemental Reserves.

[4] *See Indianapolis Power & Light Co. v. MISO*, 158 FERC ¶ 61,107 (2017) (Battery storage resources "should not be required to participate in MISO's markets by using rules that were designed for other types of resource. Requiring electric storage resources to use participation models designed for a different type of resource may fail to recognize electric storage resources' physical and operational characteristics and their capability to provide energy, capacity and ancillary services in MISO").

[5] The Michael Milligan Declaration (hereafter "Milligan Declaration") is attached as Exhibit A.

[6] *See* Exhibit B.

Earthjustice
1617 J.F.K. Blvd., Suite 1130
Philadelphia, PA 19103
T: 202.797.5247
astemplewicz@earthjustice.org

Christine Powell
Deputy Managing Attorney
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111
T: 415.217.2035
cpowell@earthjustice.org

Ben Norris
Senior Director of Regulatory Affairs & Counsel
Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2909
bnorris@seia.org

Melissa Alfano
Director of Energy Markets & Counsel
Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2873
malfano@seia.org

II. THE PARTIES

1. Solar Energy Industries Association

SEIA is the national trade association of the solar energy industry. SEIA works to make solar a mainstream and significant energy source by reducing costs and increasing reliability, removing market barriers, and providing education on the benefits of solar energy. SEIA represents solar companies that own and operate

Qualifying Facilities, with the majority of small power production facilities including solar as a component, and whom are impacted by the MISO's prohibition.

2. Respondent

MISO is a Commission-approved Regional Transmission Operator (hereafter "RTO") and North American Electric Reliability Corporation (hereafter "NERC") certified Balancing Authority, which requires MISO to maintain load-interchange-generation balance within its service territory and support the Eastern Interconnection frequency in real time. MISO is responsible for reliability coordination of the wholesale bulk power and electric transmission system in fifteen U.S. states[7] and one Canadian province.[8] Currently, MISO directs the operation of over 65,000 miles of high-voltage transmission and approximately 185,000 megawatts of power-generating resources across its footprint, and manages one of the world's largest energy markets. MISO has its primary operations in Carmel, Indiana. MISO also maintains backup control centers and data rooms in Indianapolis, Indiana; Eagan, Minnesota; and Little Rock, Arkansas.

III. INTRODUCTION AND EXECUTIVE SUMMARY

Since FERC issued Order No. 888,[9] transmission providers have been required to provide six ancillary services pursuant to an Open Access Transmission

[7] Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, North Dakota, South Dakota, Texas, and Wisconsin.

[8] Manitoba.

[9] Order No. 888, FERC Stats. & Regs. ¶ 31,036 , *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048, *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*

Tariff (hereafter "OATT"). These six ancillary services are part of providing basic transmission services to a customer, and include: (1) Scheduling, System Control and Dispatch Service; (2) Reactive Supply and Voltage Control Service; (3) Regulation (Regulation Service) and Frequency Response Service; (4) Energy Imbalance Service; (5) Operating Reserve – Spinning Reserve Service (Spinning Reserve Service); and (6) Operating Reserve – Supplemental Reserve Service (Supplemental Reserve Service).[10] RTOs or independent system operators (hereafter "ISO") ultimately implemented market-based mechanisms to procure four of these ancillary services: Energy Imbalance Service; Regulation Service; Spinning Reserve Service; and Supplemental Reserve Service.[11]

To comply with Order No. 888, MISO operates an Ancillary Services Market for regulation service, and spinning reserves and supplemental reserves (hereafter "contingency reserves").[12] MISO operates both a Day-Ahead-Market and Real-Time-Market for ancillary services, which are simultaneously co-optimized with its Day-Ahead and Real-Time energy market.[13]

MISO's Tariff and business practices manual currently prohibit wind, solar, and battery hybrid resources (also known as Dispatchable Intermittent Resources,

---

part sub nom; *see generally Transmission Access Pol'y Study Grp. v. FERC*, 225 F.3d 667 (D.C. Cir. 2000); *New York v. FERC*, 535 U.S. 1 (2002).

[10] Order No. 888, FERC Stats. & Regs. ¶ 31,703.

[11] *Energy and Ancillary Services Market Reforms to Address Changing System Needs* at 4 , AD21-10-000 (Sept. 2021).

[12] Zhi Zhou *et al.*, *Survey of U.S. Ancillary Services Markets* at 12–13, Center for Energy, Environmental, and Economic Systems Analysis (Jan. 2016), https://publications.anl.gov/anlpubs/2016/01/124217.pdf.

[13] *Id*. at 13.

or "DIRs") from participating in MISO's Ancillary Services Market. This prohibition excludes DIRs from the opportunity to provide certain ancillary services – including regulation services, spinning reserves, and supplemental reserves – despite the fact that DIRS have the operational capability to provide such services. No other FERC jurisdictional RTO or ISO codifies this explicit discriminatory prohibition; instead others, including PJM and California Independent System Operator (hereafter "CAISO"), explicitly find that wind and solar resources are eligible to provide these services.

MISO's discriminatory and unjustified tariff provisions that prohibit DIRs from providing ancillary services in MISO's wholesale market is a prototypical example of how outdated tariff provisions can result in unnecessary and deleterious market barriers. Many existing market rules often assume that power plants are large-scale, centralized generation facilities – like coal, gas, or conventional nuclear plants. Such historic assumptions have resulted in market rules and operational practices that do not account for the technical and operational characteristics of other resources – including wind, solar, energy storage, fuel cells, and other advanced energy technologies – and therefore act as implicit barriers to those technologies.

Like the conclusions FERC codified in Order 841 – which required ISOs/RTOs to revise their Tariffs to enable storage energy resources to provide all of the market services they are capable of providing, including ancillary services – MISO's Tariff cannot unnecessarily restrict wind and solar resources from providing ancillary

services. It is well-established that wind and solar resources can provide a wide variety of ancillary services – fast and accurate regulation up and down services among others – thereby increasing reliable market operations, lowering overall system costs, and providing MISO more flexibility for emerging market conditions.

Indeed, the question of whether DIRs can provide these ancillary services "has been examined in detail in the past . . . , and the answer is almost always yes."[14] Dr. Milligan's expert report "shows that IBRs can provide essential reliability services more accurately than conventional resources . . . ."[15] For example, Xcel Energy has been providing ancillary services from wind power for over a decade, and two studies in the CAISO demonstrate that renewable resources can provide operating characteristics, like frequency regulation, similar to or better than, conventional resources.[16]

---

[14] Eldrich Rebello *et al.*, *Ancillary services from wind turbines: automatic generation control (AGC) from a single Type 4 turbine* at 226, Wind Energy Sci. (Feb. 12, 2020), https://wes.copernicus.org/articles/5/225/2020/wes-5-225-2020.pdf, (citing as examples two studies from 2010 and 2017: A. Banshwar, *et al.*, *Renewable energy sources as a new participant in ancillary service markets* at 18, 106–20, Energ. Strat. Rev. (2017), https://www.sciencedirect.com/science/article/abs/pii/S2211467X17300512; H Bevrani *et al.*, *Renewable energy sources and frequency regulation: survey and new perspectives* at 4, 438–57, IET Renew. Power Generat. (Sept. 2010), https://doi.org/10.1049/iet-rpg.2009.0049.).

[15] Ex. A, Milligan Declaration at 3.

[16] *See* CAISO *et al.*, *Avangrid Renewables Tule Wind Farm: Demonstration of Capability to Provide Essential Grid Services* (Mar. 11, 2020), http://www.caiso.com/Documents/WindPowerPlantTestResults.pdf; CAISO *et al.*, *Using Renewables to Operate a Low-Carbon Grid: Demonstration of Advanced Reliability Services from a Utility-Scale Solar PV Plant* (Nov. 2017), http://www.caiso.com/Documents/UsingRenewablesToOperateLow-CarbonGrid.pdf.

Further, the penetration of wind and solar resources is expected to increase significantly in MISO's footprint in the future,[17] and this revision would position MISO to capitalize on the full capabilities of wind, solar, and battery hyrbids as an increasing number of thermal resources retire. Indeed, MISO has stated that:

> there will be an increasing future need for flexibility to address short-term market-wide reserve requirements as the mix of different types of resources in MISO continues to evolve, including the replacement of coal-fired power plants with VERs and natural gas power plants.[18]

The continual displacement of synchronous generation by DIRs brings with it technical challenges, such as falling grid inertia, that have traditionally been provided by thermal resources.[19] Because of the changing resource mix, ancillary services once provided by conventional generators will now require alternate sources such as wind and solar. "If market rules were to prevent MISO from accessing these ancillary services when needed, operating reserves could be insufficient to protect reliability, and/or prices for these services would increase needlessly."[20] Lifting

---

[17] *See, e.g.*, *MISO Forward 2020: Utilities of the Future: What do they need from a grid operator?* at 6 (Mar. 2020), https://cdn.misoenergy.org/MISO%20FORWARD_2020433101.pdf (forecasts for MISO's footprint include 40% wind and solar, 25% gas, 25% coal and 10% nuclear/other (including storage) by 2030).

[18] *Energy and Ancillary Services Market Reforms to Address Changing System Needs,* AD21-10-000 at 16 (Sept. 2021).

[19] *See* R. Piwko *et al.*, *Penetrating insights: Lessons learned from large-scale wind power integration* at 10, 44–52, IEEE Power Energ. Mag. (2012), https://ieeexplore.ieee.org/document/6155438; *see also* Ex. A, Milligan Declaration at 2 ("the number of IBRs in MISO's service territory will grow in the near- and mid-term, as evidenced by MISO's interconnection queue, and as more thermal resources retire, ancillary services from those resources will no longer be available.")

[20] Ex. A, Milligan Declaration at 2–3, 6.

MISO's prohibition would not only increase competition, but also open new resources to provide the critical grid stabilizing services that MISO will need for a stable and reliable grid.

Additionally, allowing DIRs to be eligible to provide such services could also lower overall system costs for customers,[21] while also providing an additional revenue stream for the generators. For example, "regulating reserves are typically the highest-cost reserve product" and are likely "to be the 'first' market reserve product to be commonly provided by" DIRs.[22] Allowing DIRs to participate will put downward pressure on market prices, while also decreasing system maintenance costs for the conventional resources that have traditionally provided these services. As noted by the New York Independent System Operator (hereafter "NYISO"), allowing wind and solar to provide ancillary services provides "additional market revenues to renewable resources, decrease[s] the cost of renewable integration, and lead[s] to reduced emissions while maintaining reliability."[23]

The issue of lifting MISO's prohibition has languished for years in MISO's stakeholder process with no indication for future action by MISO. This issue was

---

[21] *See, e.g.*, International Renewable Energy Agency, *Innovative Ancillary Services: Innovation Landscape Brief* at 13 (2019), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_Innovative_ancillary_services_2019.pdf?la=en&hash=F3D83E86922DEED7AA3DE3091F3E49460C9EC1A0a.

[22] Paul Denholm *et al.*, *An Introduction to Grid Services: Concepts, Technical Requirements, and Provision from Wind, National Renewable Energy Laboratory* at 31 (Jan. 2019), https://www.nrel.gov/docs/fy19osti/72578.pdf.

[23] NYISO, *Grid Services from Renewable Resources* at 3(Aug. 2021), https://www.nyiso.com/documents/20142/24130223/Grid%20Services%20from%20Renewable%20Generators%20Study.pdf/b47e9923-c2bd-faa6-e81d-29300dd56df2.

raised at MISO in June of 2018, but has remained dormant as no meaningful action has been taken since its introduction.[24] Specifically, the issue is summarized before MISO as follows:

> Dispatchable Intermittent Resources (DIRs) have the capability of providing regulation down service but the MISO tariff currently precludes these resources from providing regulation service. DIRs should also be allowed to provide regulation up service when coming out of a curtailment. Similar to FERC's Order 841 which required ISOs/RTOs to revise their Tariffs to enable storage energy resources to provide all of the market services they are capable of providing, MISO's Tariff should not restrict DIRs from providing regulation service. In fact, for maximum efficiency and elimination of duplicate efforts, the development and implementation of this project should be completed in coordination with FERC Order 841 compliance to create a more flexible participation model to enable all resource types to participate in MISO to their fullest extent.[25]

A diverse array of entities initially supported the submission of this issue for consideration,[26] and it was ranked as having medium priority in MISO's 2019 Prioritization Survey. The Environmental Sector at MISO later ranked this issue as one of the top matters to be addressed by MISO in MISO's 2020 Prioritization Survey.[27] However, it has subsequently set aside by MISO, and been relegated to

---

[24] *See* MISO, *Allow Dispatchable Intermittent Resources (DIRs) to Provide Regulation Service IR069* (Feb. 16, 2022), https://extranet.misoenergy.org/stakeholder-engagement/MISO-Dashboard/allow-dispatchable-intermittent-resources-dirs-to-provide-regulation-service/.

[25] *Id.*

[26] MISO has removed the Issue Submission form from its website that detailed the party that initially submitted the request – here, Xcel Energy – as well as all of the supporting entities, which included: Wind on the Wires (now Clean Grid Alliance), NextEra Energy Resources, DTE Energy, Minnesota Power, MidAmerican Energy Company, Entergy, Ameren, and Alliant Energy.

[27] *See* MISO, *Integrated Roadmap: Stakeholder Prioritization Survey Results Workshop* at 18 (Mar 11, 2020),

"Parking Lot" status with low priority, "due to resource constraints."[28] On December 2, 2022, MISO updated its Parking Lot issue recommendations and found that this issue was "not planned for development" and recommended it to be "close[d]."[29]

The irony here is that MISO *fundamentally agrees* with the core principle of this Complaint. Specifically, MISO recently stated that it "concurs" with the stakeholder position that "[i]f an individual DIR has the demonstrated capability to move up if called upon, then it should have the opportunity to participate."[30] MISO further recognizes that one "key takeaway" from a recent stakeholder proceeding was that there was "[b]road support" to allow DIRs to be eligible for a Ramp Capability product.[31] While these statements were made in the context of a consideration of price formation reforms for a Ramp Capability Up product, the same fundamental concepts apply to the ancillary products at issue in this Complaint. Rather than doubling down on nonmarket-based blanket prohibitions,

---

https://cdn.misoenergy.org/20200311%20IR%20Stakeholder%20Prioritization%20Survey%20Results435279.pdf.

[28] MISO, *Allow Dispatchable Intermittent Resources (DIRs) to Provide Regulation Service IR069* (Feb. 16 2022), https://extranet.misoenergy.org/stakeholder-engagement/MISO-Dashboard/allow-dispatchable-intermittent-resources-dirs-to-provide-regulation-service/ (stating that "this project will remain in the Parking Lot due to resource constraints").

[29] *MISO MSC Parking Lot Issue Recommendations* at 4 (Dec. 16, 2022), https://cdn.misoenergy.org/20221201%20MSC%20Item%2010%20Parking%20Lot%20Issues%20Review627167.pdf.

[30] *MISO Response to Feedback, April 2022 Subcommittee Continued Reforms Scarcity Pricing/Price Formation* (MSC-2019-1) at 4 (May 27, 2022), https://www.misoenergy.org/stakeholder-engagement/stakeholder-feedback/msc-continued-reforms-to-improve-scarcity-pricing-msc-2019-1-20220421/SubmitFeedback/ (it appears that MISO has deleted their Response from their website as the link is now broken).

[31] *Id.* at 2.

MISO ought to be focused on facilitating technology-neutral, operations-focused solutions that properly establish criteria for when a resource is called upon to provide ancillary services.

Action by the Commission is necessary to remedy the unjust, unreasonable, and unduly discriminatory provisions of MISO's Tariff and business manuals, which explicitly unduly discriminates against DIRs.

IV. BACKGROUND

1. Factual Background

i. Ancillary Grid Services in the MISO Tariff

MISO operates an Ancillary Services Market for regulation and contingency reserves, which began operation in 2009.[32] MISO operates both a Day-Ahead-Market and Real-Time-Market for ancillary services, which are simultaneously co-optimized with its Day-Ahead and Real-Time energy market.[33] MISO currently has ancillary services markets for regulation service, spinning reserves, and supplemental reserves.[34]

a. Regulation Reserves

Regulation Reserves are generation-based that must be able to adjust their output in response to automatic signals within five minutes of receiving a signal to

[32] Zhi Zhou *et al.*, *Survey of U.S. Ancillary Services Markets* at 12–13, Center for Energy, Environmental, and Economic Systems Analysis (Jan. 2016), https://publications.anl.gov/anlpubs/2016/01/124217.pdf.
[33] *Id.* at 13.
[34] *Id.*

do so.[35] MISO has only a single product for Regulation Reserves.[36] The system requirement for total Regulation Reserves across all zones varies between 300 MW and 500 MW, depending on system conditions.[37] This requirement is not based explicitly on NERC standards.

b. Spinning Reserves

Spinning Reserves can be provided by either generation resources or demand-side resources at MISO.[38] This capacity must be synchronized to the grid and able to adjust output within ten minutes of receiving an instruction to do so.[39] There is a fixed requirement of 1000 MW for Spinning Reserves.[40]

c. Supplemental Reserves

Supplemental Reserves can be provided by either generation resources or demand-side resources at MISO.[41] This capacity does not necessarily need to be synchronized to the grid, but must be able to start up and adjust output within ten minutes of receiving an instruction to do so.[42] There is a fixed requirement of 1,000 MW for Supplemental Reserves.[43]

ii. MISO Prohibition of Dispatchable Intermittent Resources

---

[35] *Id.* at 14.
[36] *Id.*
[37] *Id.*
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] *Id.*
[42] *Id.*
[43] *Id.*

MISO classifies DIRs as generation resources whose maximum limit is dependent on a forecast of their variable fuel source.[44] Resources that are fueled by wind, solar, or other types of variable energy are DIRs.[45] "DIRs *are not eligible* to provide Operating Reserves to the Day-Ahead or Real-Time Energy and Operating Reserves Markets. For this reason, DIRs do not submit Dispatch Statuses for Regulating, Spinning, On-Line Supplemental, or Off-line Supplemental Reserves."[46] MISO's Tariff makes clear that "Regulation Qualified Resources in the Day-Ahead Energy and Operating Reserve Market will be limited to (i) committed Generation Resources *that are not Dispatchable Intermittent Resources. . .*"[47]

Therefore, MISO's Tariff and BPM prohibits dispatchable wind and solar resources from providing a number of important ancillary grid services for which they may be compensated.[48] There is no parallel prohibition for battery storage or demand response.

iii. MISO Never Intended for the Prohibition to be Permanent

[44] *See* BPM-002-r22 at 186.
[45] *Id*.
[46] *Id*. at 187 (emphasis added); *see also id*. at 102 ("Dispatchable Intermittent Resources are not eligible to provide Operating Reserves, and therefore, do not provide Dispatch Statuses for Operating Reserve products").
[47] MISO Tariff, Section 39.2.1.B, "Resource Requirements for Operating Reserves" (emphasis added).
[48] *See also* Wind Solar Alliance, *Customer Focused And Clean: Power Markets for the Future* at 23 (Nov. 2018) ("MISO bars dispatchable renewables from providing frequency regulation, spinning reserves, and supplemental (non-spinning) reserves, though renewables can provide MISO's new ramping service").

The record is clear that MISO never intended for its ban on DIRs from providing ancillary services to be permanent. In 2010, MISO submitted proposed revisions to its Open Access Transmission, Energy and Operating Reserve Markets Tariff to create a new category of resources called Dispatchable Intermittent Resources.[49] As part of that effort MISO proposed a temporary prohibition of this new class of resources from providing ancillary services.

In that docket, several stakeholders opposed this ban and asserted that "[m]odern wind generators are . . . capable of supplying operating reserves."[50] In response, MISO stated that it "does not intend to preclude DIRs from supplying Operating Reserves in the future."[51] Therefore, as far back as 2011 there was an understanding that these inverter-based resources were technically capable of providing operating reserves.

MISO proposed the prohibition not because these resources were incapable of supplying them; instead, MISO proposed a temporary prohibition "to gain experience with this new method of modeling and dispatching [DIRs]" before "extending to DIRs the capability of providing Operating Reserves."[52] MISO further stated that it would be the "ability of DIRs to follow a five-minute Energy-only

---

[49] *Order Conditionally Accepting in Part and Rejecting in Part Tariff Filing and Requiring Compliance Filing*, 134 FERC ¶ 61,141 at P 1 (Feb. 28, 2011).
[50] *See, e.g.*, *Motion to Intervene and Limited Protest of the American Wind Energy Association And Wind on the Wires,* ER111-1991 at 9 (Nov. 22, 2010).
[51] *Motion for Leave to Answer and Answer of the Midwest Independent Transmission System Operator, Inc.*,ER11-1991 at 12 (Dec. 8, 2010).
[52] *Id*.

dispatch signal" that would "establish their capability to perform as Regulation, Spin, or Supplemental" reserves.[53]

When FERC issued its order on the proposed tariff changes, FERC stated that it "recognize[s] that the Midwest ISO's proposal to prohibit Dispatchable Intermittent Resources from providing operating reserves *arises from its lack of experience* with its new methods of modeling and dispatching such resources."[54] While FERC agreed with MISO on the temporary ban, FERC made clear its misgivings about the prohibition, stating that it has "a strong interest in allowing market participants to offer into the market the full range of services that they are capable of reliably providing."[55] FERC then required MISO to submit a compliance filing in one year that would report on whether MISO believed that DIRs should be able to provide ancillary services.[56] While MISO's report later recommended keeping the prohibition in place, it did not do so on any technical grounds; rather, MISO merely cited an "economic analysis" based on "six months" of data, and suggested that because MISO did not detect market incentives for DIRs to provide these services that the ban should simply remain in place.[57]

---

[53] *MISO Electric Tariff Filing Designating Dispatchable Intermittent Resources*, ER11-1991 at 5 (Nov. 1, 2010).
[54] 134 FERC ¶ 61,141 at P 107 (emphasis added).
[55] *Id.*
[56] *Id.*
[57] *Compliance Filing of the Midwest Independent Transmission System Operator, Inc. regarding Dispatchable Intermittent Resources*, ER11-1991 at 3–4 (Feb. 28, 2012).

Notably, MISO's recommendation provided no technical justification prohibiting DIRs from providing operating reserves. Furthermore, the decades old data MISO relied upon is now stale. As described by Dr. Milligan, "[t]he capabilities of IBRs have advanced significantly since MISO sought to codify the existing prohibition for renewables to participate in its ancillary services market."[58] Specifically, the prohibition was imposed "during a different time when many [inverter based resources] were not configured to provide various grid services, including reserves," and when wind, solar, and hybrid "penetration was lower."[59] Indeed, the existence of hybrid resources "were not considered in MISO's Compliance filing."[60] "Given this substantial increase in the penetration of renewable resources during the past decade on MISO's grid, the recent emergence of hybrid resources, and increasing incentives to for renewables to participate in the market, MISO's assumptions about the participation of these resources in MISO's ancillary services market are outdated and discriminatory."[61]

iv. DIR Ancillary Service Technical Capabilities

Numerous studies and real-world applications have shown that wind and solar can not only capably provide ancillary services, including regulation, spinning,

[58] Ex. A, Milligan Declaration at 10.
[59] *Id*. at 11.
[60] *Id*.
[61] *Id*.

and supplemental reserves, but they can often do so more accurately and more quickly than non-DIR resources.[62]

a. DIRs Have Been Providing Ancillary Services for Xcel/Public Service of Colorado for a Decade

It has been well-established for years that DIRs are capable of providing a wide range of ancillary services.[63] There is little question that restrictive grid

---

[62] *See, e.g.*, *id.* at 19-29; Minhui Gao *et al.*, *Essential Reliability Service Requirements from Utility-scale Solar and Wind in Bulk Power* Markets, Master's project, Duke University (2019), https://dukespace.lib.duke.edu/dspace/handle/10161/18424; Michael Milligan, *Sources of Grid Reliability Services* at 1–7, The Electricity Journal 31 (9) (2018), https://www.sciencedirect.com/science/article/pii/S104061901830215X; Gevorgian & B. O'Neill, *Advanced Grid-Friendly Controls Demonstration Project for Utility-Scale PV Power Plants*, National Renewable Energy Laboratory (Jan. 2016), https://www.nrel.gov/docs/fy16osti/65368.pdf; *see also* M. Morjaria *et al.*,*A Grid-Friendly Plant: The Role of Utility-Scale Photovoltaic Plants in Grid Stability and Reliability*, IEEE Power and Energy Magazine, 12:3, (2014), https://ieeexplore.ieee.org/abstract/document/6802493; Jimmy Nelson *et al.*, *Investigating the Economic Value of Flexible Solar Power Plant Operation*, Energy + Environmental Economics (Oct. 2018), https://www.ethree.com/wp-content/uploads/2018/10/Investigating-the-Economic-Value-of-Flexible-Solar-Power-Plant-Operation.pdf; Paul Denholm *et al.*, *An Introduction to Grid Services: Concepts, Technical Requirements, and Provision from Wind*, National Renewable Energy Laboratory (2019), https://www.nrel.gov/docs/fy19osti/72578.pdf.

[63] *See, e.g.*, V. Krishnan *et al.*, *Impact of short-term storage on frequency response under increasing wind penetration*, J. Power Sources 257 (2014), https://www.sciencedirect.com/science/article/abs/pii/S0378775314001554; P.A. Ostergaard, *Ancillary services and the integration of substantial quantities of wind power*, Appl. Energy 83 (2006); B. Kirby *et al., Providing Minute-to-minute Regulation from Wind Plants*, National Renewable Energy Laboratory (Oct. 2010), www.nrel.gov/docs/fy11osti/48971.pdf; V.Y. Singarao *et al.*, *Frequency responsive services by wind generation resources in United States*, Renew. Sustain. Energy Rev. 55 (2016), https://www.sciencedirect.com/science/article/abs/pii/S1364032115012630; M.E. Mokadem *et al.*, *Experimental study of variable speed wind generator contribution to primary frequency control*, Renew. Energy 34 (2009), https://www.sciencedirect.com/science/article/abs/pii/S096014810800150X; J. Liang *et al.*, *Increased wind revenue and system security by trading wind power in energy and regulation reserve markets*, IEEE Trans. Sustain. Energy 2 (2011).

operator market rules, as opposed to technical system capabilities, are the primary barrier to deploying ancillary grid services from wind and solar resources. For example, a white paper from 2019 by Advanced Energy Economy found that MISO's Tariff included market rules that explicitly prohibit wind and solar from providing a number of ancillary services, including "frequency regulation, spinning reserves, and supplemental (non-spinning) reserves" even though they can do so "on a comparable basis to traditional power plants."[64]

Indeed, wind generators have already been providing regulating reserves in the Xcel/Public Service Company of Colorado (hereafter "PSCO") balancing authority area for over a decade.[65] The vertically-integrated utility of Xcel/PSCO, which needs to balance its own load with its own generators and long-term contracts with wind power plant owners, has found that because wind can provide fast up and down responses without the wear and tear that thermal generators

---

[64] *Wholesale Market Barriers To Advanced Energy – And How To Remove Them* at 11–12, Advanced Energy Economy (May 2019), https://ieeexplore.ieee.org/document/5710000?tp=&arnumber=5710000&subscribed=true&queryText=wind%20energy; *see also* CAISO, *Using Renewables to Operate a Low-Carbon Grid: Demonstration of Advanced Reliability Services from a Utility-scale Solar PV Plant* at 11–12, https://www.caiso.com/documents/usingrenewablestooperatelowcarbongrid-faq.pdf (last accessed Jan. 30, 2023) (noting that "[m]any of the PV control capabilities that were demonstrated in this project have already generally been proven to be technically feasible, and a few areas throughout the world have already started to request or require PV power plants to provide some of them. However, in the United States, utility-scale PV plants are rarely recognized as having these capabilities and typically are not used by utilities or system operators for electrical grid services").

[65] Michael Milligan *et al.*, *Alternatives No More: Wind and Solar Power Are Mainstays of a Clean, Reliable, Affordable Grid*, IEEE Power and Energy Magazine 13: 78-87 (2015), https://ieeexplore.ieee.org/document/7299793.

incur, it is in the system operator's "interest to use wind to provide as much regulation as possible (when it is curtailed)."[66] "Having wind generators provide real-time balancing services reduced the amount of wind-generation curtailments and fossil-fuel costs by allowing fossil-fueled units to be dispatched at minimum generation," and also "improved reliability by enabling fast-acting wind generation to meet the balancing authority area's regulation needs."[67] Xcel/PSCO has also determined that "the volume of curtailed [variable energy resource] generation that can dependably provide upregulation and 10-min spinning reserves."[68] Xcel's experience "demonstrate[es] that the technology is mature and effective" and "provides a good example of how these capabilities can be applied when needed."[69]

b. DIRs Are Capable of Providing Various Ancillary Services More Quickly and More Accurately than Thermal Resources

Not only do wind and solar resources have the capability to provide comparable ancillary services to thermal resources, but wind, solar, and battery hybrids can also frequently provide those crucial grid services "more accurate[ly]" more quickly than thermal resources.[70]

---

[66] *Id*.
[67] Debra Lew, et al., *Secrets of Successful Integration* at 30, IEEE Power and Energy Magazine (Nov. / Dec. 2019), https://powermarkets.org/wp-content/uploads/2020/09/Future-Power-Markets-Forum-Session-4-Debra-Lew-Paper.pdf.
[68] *Id*.
[69] Ex. A, Milligan Declaration at 30-31; *see also id*. at 18–23 (describing a typical grid disturbance and the way in which inverter-based resources are capable of responding by providing various ancillary services).
[70] *Id*. at 35 ("grid services provided by IBRs is more accurate and has a significantly quicker response than traditional resources").

CAISO, First Solar, and the U.S. Department of Energy's National Renewable Energy Laboratory performed a study that demonstrated that the technical abilities of solar generation in the context of ancillary service production.[71] The study utilized an un-named 300 MW solar plant in the footprint of CAISO.[72] On two dates in the summer of 2016, using advanced inverter technology, the plant was able to demonstrate numerous types of ancillary services.[73]

Specifically, the results from the study, which were documented in a report, showed that solar projects with inverter controls can "provid[e] services that range from spinning reserves, load following, voltage support, ramping, frequency response, variability smoothing and frequency regulation . . . ."[74] The report also showed that regulation accuracy by the solar plant is significantly better than fast-ramping gas turbine technologies.[75] The report further detailed that "[a]ll hardware components enabling [solar] power plants to provide a full suite of grid-friendly controls are already in existence in many utility-scale [solar] plants. It is mainly a matter of activating these controls and/or implementing communications upgrades to fully enable these."[76] The report concludes that "unleashing these capabilities

---

[71] *See* CAISO et al., *Using Renewables to Operate a Low-Carbon Grid: Demonstration of Advanced Reliability Services from a Utility-Scale Solar PV Plant* at 5, (Nov. 2017), http://www.caiso.com/Documents/UsingRenewablesToOperateLow-CarbonGrid.pdf (hereafter "2017 Report").
[72] *Id.*
[73] *Id.*
[74] *Id.*
[75] *Id.* at 30.
[76] *Id.* at 56.

from the renewable resources helps achieving the broader objective of a resilient, reliable low-carbon grid."[77]

The same invertor technology is largely available to wind resources. A follow-up report by some of the same entities found parallel results with regard to wind resources.[78] "During several days in 2019, the team conducted a series of tests at Avangrid Renewables' Tule Wind Farm, located in CAISO's balancing authority in the McCain Valley, east of San Diego."[79] The results of the report showed that wind resources "with an inverter-based smart controller can provide balancing or regulation up and down, voltage regulation control, active power control through ramping capability, and frequency response."[80] This study confirmed earlier findings that "[i]mprovements in smart inverter technology combined with advanced plant controls allow inverter-based resources to provide regulation, voltage support, and frequency response during various mode of operation."[81] Furthermore, the study found that "[w]ind resources with these advanced grid-friendly capabilities have unique operating characteristics that can enhance system reliability" including but not limited to: "[e]ssential reliability services during periods of oversupply," "[v]oltage support when the plant's output is at zero," "[f]ast

---

[77] *Id*. at 15.
[78] *See generally* CAISO et al., *Avangrid Renewables Tule Wind Farm: Demonstration of Capability to Provide Essential Grid Services*, California ISO (Mar. 2020), http://www.caiso.com/Documents/WindPowerPlantTestResults.pdf (hereafter "2020 Report").
[79] *Id*. at 5.
[80] *Id*.
[81] *Id*. at 47.

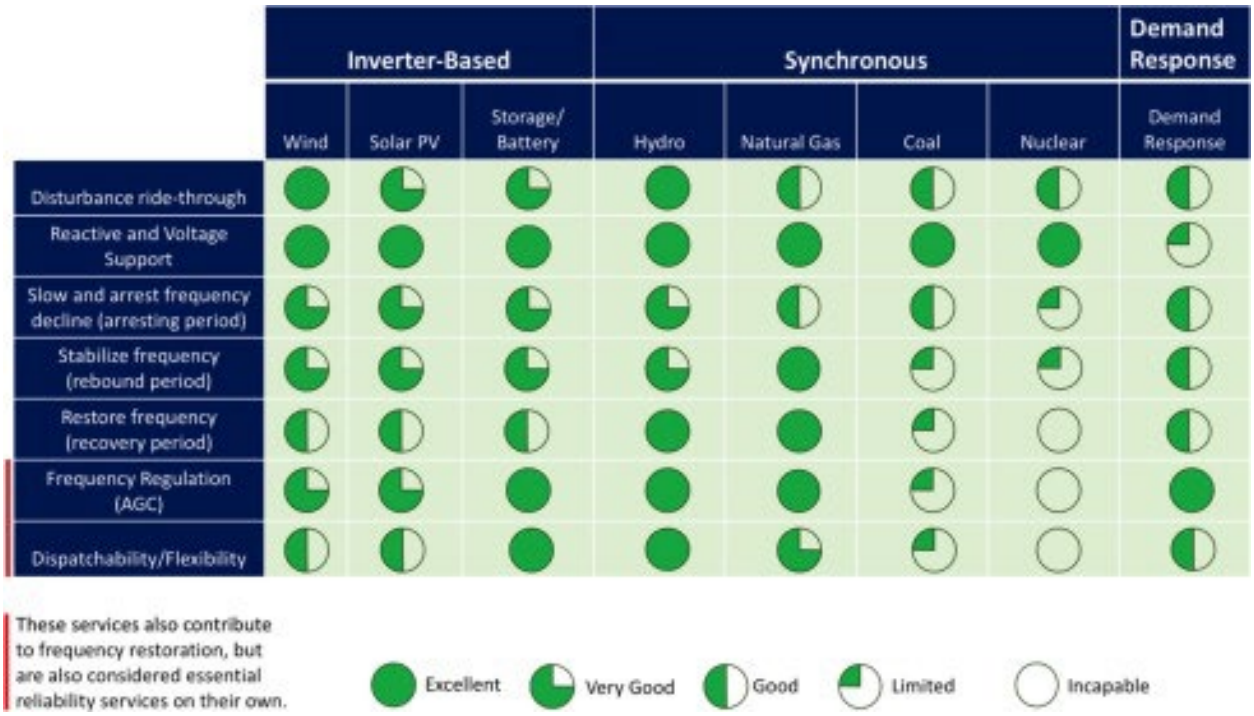
frequency response (within the inertia response time frame)," and "[f]requency response for low- as well as high- frequency events."[82]

The technical capabilities of DIRs are further supported by the Dr. Michael Milligan's expert report, which concludes that the "quicker, more accurate response in frequency response and ability to follow dispatch instructions means that [inverter based resources] are fully capable of providing frequency regulation, spinning reserves, and non-spinning reserves."[83]

Figure 2 below provides a summary of some of the other types of services that wind, solar, and battery hybrids can provide, and the quality of those services.[84]

Figure 2.

[82] *Id*.
[83] Ex. A, Milligan Declaration at 34-35.
[84] Michael Milligan, *Sources of Grid Reliability Services* at Table 1, The Electricity Journal 31 (9) (2018), https://www.sciencedirect.com/science/article/pii/S104061901830215X.



Not only can these resources provide operating reserves, but they can also provide many other ancillary services comparable or better than traditional resources. Studies have found that "[t]o tackle fast or almost instantaneous frequency regulation issues, the role of conventional generation units are not sufficient when

comparing to [renewable energy sources]."[85] Additionally, there have been recent demonstrations that DIRs can also provide black-start[86] grid services.[87]

Lifting the DIR prohibition has potentially broader implications for MISO's wholesale market. For example, MISO is planning on *doubling down* on its prohibition of DIRs from providing certain grid services, as it now plans on removing the ability of DIRs from being eligible to provide a Ramp Capability Up product.[88] MISO proposes this new backsliding prohibition despite admitting in that proceeding that resources should be able to provide all the services they are technically capable of providing.[89] Rather than seeking to break down unnecessary

---

[85] A. Banshwar *et al.*, *Renewable energy sources as a new participant in ancillary service markets* at 113, Energ. Strat. Rev., 18 (2017), https://www.semanticscholar.org/paper/Renewable-energy-sources-as-a-new-participant-in-Banshwar-Sharma/3c9e8cca5fd24e7a1cdbd2512fdc9cd1bce41359.

[86] "Black start is the ability of generation to restart parts of the power system to recover from a blackout. This entails isolated power stations being started individually and gradually reconnected to one another to form an interconnected system again. It is used when the grid experiences a blackout and must be restarted from scratch. As such, black start is a critical resource for maintaining the reliability and resilience of the electric power system and is central to system restoration and recovery plans for system operators." *See* National Renewable Energy Laboratory, *Black Start* https://www.nrel.gov/grid/black-start.html (last accessed Jan. 30, 2023).

[87] *See, e.g.*, Anubhav Jain *et al.*,*Grid-forming control strategies for black start by offshore wind power plants*, Wind Energ. Sci., 5, 1297–1313 (Oct. 12, 2020), https://wes.copernicus.org/articles/5/1297/2020/wes-5-1297-2020.pdf; A. Jain *et al. Functional Requirements for Blackstart and Power System Restoration from Wind Power Plants* (Sept. 8, 2019), https://doi.org/10.5281/zenodo.3460518; *see also SPR delivers 'black start' from onshore wind*, renews, biz (Nov. 3, 2020), https://renews.biz/64190/spr-delivers-black-start-from-onshore-wind/.

[88] *MISO Response to Feedback, April 2022 Subcommittee Continued Reforms Scarcity Pricing/Price Formation,* MSC-2019-1 at 4 (May 27, 2022).

[89] *Id.*

barriers for DIR participation in MISO's markets, MISO appears to be erecting new unnecessary restrictions.

2. Value of DIRs Providing Ancillary Services in MISO

DIR participation in MISO's ancillary services markets could provide new sources of value/revenue for DIR resource owners, "open up new options for system operators to manage grid reliability,"[90] and lower overall system costs.

Allowing DIRs to compete in the ancillary services market has been shown to "increase system stability while reducing costs."[91] For example, NYISO has broadly stated that "[e]xpanding the opportunity for renewable resources to provide regulation could decrease the cost of renewable integration while decarbonizing the provision of essential reliability services."[92] NYISO's study specifically showed that increased renewable participation in the ancillary services market "will potentially result in lower prices during "high-priced" regulation intervals, and therefore *in lower consumer costs*."[93] These savings "might be greater based on the possibility for

---

[90] Frederich Kahrl et al., *Variable Renewable Energy Participation in U.S. Ancillary Services Markets* at 1, Lawrence Berkley National Laboratory (Oct. 2021), https://eta-publications.lbl.gov/sites/default/files/vre_as_full_report_release.pdf.
[91] International Renewable Energy Agency, *Innovative Ancillary Services: Innovation Landscape Brief* at 13 (2019), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_Innovative_ancillary_services_2019.pdf?la=en&hash=F3D83E86922DEED7AA3DE3091F3E49460C9EC1A0a.
[92] *See* Tariq N. Niazi, *Grid Services from Renewable Generators: Consumer Impact Analysis* at 16, NYISO (Aug. 10, 2021), https://www.nyiso.com/documents/20142/1393844/Consumer-Impact-Analysis-Grid-Services-from-Renewable-Generators.pdf/560dabaa-e24d-7abc-222b-fbba1427cb81.
[93] *Id.* at 7. (emphasis added).

an increase in regulation suppliers to reduce prices during 'low-priced' intervals."[94] Additionally, "further consumer savings could potentially result from a reduction in energy market prices which reflects tradeoffs with regulation."[95] Moreover, the Berkley National Laboratory has found that:

> [i]n most ISOs/RTOs, standalone and hybrid [wind and solar resource] participation in regulation markets could provide significant value to the electricity system as a whole, as measured by the difference between VRE resources' average regulation value and average regulation market prices. In other words, VRE could provide regulation during periods with high market prices, which would put downward pressure on average market prices and provide ISOs/RTOs with a larger toolset to resolve emerging, higher-cost system constraints.[96]

Lifting the prohibition could also provide "lower-cost reserve capacity and additional tools for relieving unit commitment."[97] For example, studies have shown that using solar to provide reserves could "reduce curtailment that results from minimum thermal generation constraints," thereby increasing the value and deployment of low cost solar resources.[98] As noted above, deploying inverter based resources to provide these services also avoids the wear and tear on conventional resources that will eventually result in costly resource maintenance.[99]

---

[94] *Id.* at 13.
[95] *Id.*
[96] Frederich Kahrl *et al.*, *Variable Renewable Energy Participation in U.S. Ancillary Services Markets* at 28, Lawrence Berkley National Laboratory (Oct. 2021), https://eta-publications.lbl.gov/sites/default/files/vre_as_full_report_release.pdf.
[97] *Id.* at 1.
[98] *Id.* at 26.
[99] *See* International Renewable Energy Agency, *Innovative Ancillary Services: Innovation Landscape Brief* at 13 (2019), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Feb/IRENA_Innovative_ancillary_services_2019.pdf?la=en&hash=F3D83E86922DEED7AA3DE3091F3E49460C9EC1A0a.

In addition to lowering costs and creating appropriate price signals that reflect operational needs, an increase in participation by DIRs will also create a more reliable grid by adding operational flexibility to the system. NYISO has stated that increasing renewable participation in ancillary services "may reduce the frequency of regulation shortages and improve system reliability.[100] As recently described by FERC, there is a "broad industry consensus that RTOs/ISOs will need more operational flexibility from resources to reliably serve loads as the resource mix evolves to include more weather dependent variable energy resources (VERs) and loads change due to weather dependent distributed energy resources, electrification, and other factors."[101] As provided above, DIRs themselves have the capability to meet the needs of increased operational flexibility. Indeed, "[o]btaining these services from [inverter based resources] will significantly improve the reliability of the power system—especially at very high penetration rates."[102]

Market revenues derived from a well-designed technology neutral ancillary services market could help offset the declines in energy and capacity prices as the penetration of low marginal cost resources increase in the United States.[103] Data

---

[100] *See* Tariq N. Niazi, *Grid Services from Renewable Generators: Consumer Impact Analysis* at 15, NYISO (Aug. 10, 2021), https://www.nyiso.com/documents/20142/1393844/Consumer-Impact-Analysis-Grid-Services-from-Renewable-Generators.pdf/560dabaa-e24d-7abc-222b-fbba1427cb81.
[101] *Energy and Ancillary Services Market Reforms to Address Changing System Needs*, AD21-10-000 at 3 (Sept. 2021); *see also id*. at 7–16 (describing "Evidence of the Need for Increased Operational Flexibility in RTOs/ISOs").
[102] Ex. A, Milligan Declaration at 33; *see also id*. at 14.
[103] *See* Andrew Mills & Ryan Wiser, *Changes in the Economic Value of Photovoltaic Generation at High Penetration Levels: A Pilot Case Study of California*, IEEE Journal of Photovoltaics 3(4): 1394–1402 (2018),

from ERCOT – where wind generators may provide ancillary services – demonstrate that wind and solar can provide their services to the grid and make revenue. For example, in 2017, studies have shown that the day-ahead price of regulation down service surpassed that of energy for 9.2% of hours, the day-ahead price of regulation up service surpassed energy for 5.8% of hours, and the combined price for day-ahead regulation service was higher than the cost of energy for 16.4% of hours.[104] Such situations will only increase as renewable penetration marches forward. Indeed, as the energy transition moves towards more variable energy resources, "[wind and solar] penetration sensitivity showed significant increases in the incremental value of regulation market participation for standalone [wind and solar resources], due to higher regulation prices and a higher frequency of hours in which regulation prices exceed energy prices."[105] As renewable penetration

---

https://ieeexplore.ieee.org/document/6541950; Seel Joachin *et al.*, *Impacts of High Variable Renewable Energy Futures on Wholesale Electricity Prices, and on Electric-Sector Decision Making*, Lawrence Berkeley National Laboratory (2018), https://emp.lbl.gov/publications/impacts-high-variable-renewable; Dev Millstein *et al.*, *Solar and wind grid system value in the United States: The effect of transmission congestion, generation profiles, and curtailment*, Joule 5: 1-27 (2021), https://www.sciencedirect.com/science/article/pii/S2542435121002440.

[104] Ilya Chernyakhovskiy et al., *Grid-Friendly Renewable Energy: Solar and Wind Participation in Automatic Generation Control Systems*, at 11, National Renewable Energy Laboratory (June 2019), https://www.nrel.gov/docs/fy19osti/73866.pdf.

[105] Frederich Kahrl et al., *Variable Renewable Energy Participation in U.S. Ancillary Services Markets*, Lawrence Berkley National Laboratory at 27 (Oct. 2021), https://eta-publications.lbl.gov/sites/default/files/vre_as_full_report_release.pdf.

increases from 20 to 40 percent, there will be "[h]igher prices and greater generator revenue from reliability services as the value of flexibility increases."[106]

Where system operators can control the power output of variable renewable resources and allow their participation in ancillary services markets, these resources can be viewed as assets that help to maintain reliability rather than liabilities that create operational challenges.

V. DISCUSSION

1. MISO's Blanket Prohibition is Unduly Discriminatory and Results in Rates that are Unjust and Unreasonable

It is undisputed that MISO is a "public utility" subject to section 206 of the FPA.[107] Moreover, MISO is the sole provider of ancillary grid services throughout its footprint, and it is through MISO that generators receive compensation for ancillary grid services. Accordingly, under the plain terms of the FPA, MISO is prohibited from establishing or maintaining rates for ancillary grid services that are unjust, unreasonable, or unduly discriminatory or preferential.[108]

---

[106] Michael Goggin et al., *Customer Focused and Clean: Power Markets for the Future* at 12, Grid Strategies L.L.C. (Nov. 2018), https://gridprogress.files.wordpress.com/2019/03/power-markets-for-the-future-miso-focus.pdf.

[107] *See Braintree Elec. Light Dep't v. FERC*, 550 F.3d 6, 13 (D.C. Cir. 2008) (noting that the Commission treats the New England ISO as a public utility); *Atlantic City Elec. Co. v. FERC,* 295 F.3d 1, 11 (D.C. Cir. 2002) (noting that the Commission treats ISOs as public utilities within the scope of the statute).

[108] *See* 16 U.S.C. §§ 824d(b), 824e(a).

Section 206 of the FPA authorizes the Commission to investigate existing rates on a complaint or its own initiative,[109] specifically referring to "any rule, regulation, practice, or contract affecting [a] rate, charge, or classification. . . ."[110] If the Commission finds that any such rule, regulation, practice, or contract affecting a rate is "unjust, unreasonable, unduly discriminatory or preferential, the Commission shall determine the just and reasonable rate ... and shall fix the same by order."[111] Thus, under section 206, "[i]t is the Commission's job not the petitioner's to find a just and reasonable rate."[112] When the Commission changes an existing filed rate under section 206, it is "the Commission's burden to prove the reasonableness of its change in methodology."[113]

Further, just because a tariff was found to be just and reasonable and not unduly discriminatory at one time does not preclude the Commission from later finding it to be unjust, unreasonable, or unduly preferential.[114] In particular,

---

[109] 16 U.S.C. § 824e(a).
[110] *Id.*
[111] *Id.*
[112] *Md. Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1285 n.1 (D.C. Cir. 2011).
[113] *PPL Wallingford Energy L.L.C. v. FERC*, 419 F.3d 1194, 1199 (D.C. Cir. 2005).
[114] *See, e.g.*, *Maryland Pub. Serv. Comm'n v. PJM Interconnection, L.L.C.*, 123 FERC ¶ 61,169 at P 31 (May 16, 2008), *citing Ameren Services Co. N. Ind. Pub. Serv. Co. v. Midwest Indep. Transmission Sys. Operator, Inc.*, 121 FERC ¶ 61,205 at P 33 (Nov. 28, 2007) (finding "a tariff provision implementing a particular rate [or practice that was found reasonable at one time] does not preclude the Commission from later reviewing the tariff provision to determine whether it continues to be just and reasonable."); *California Indep. Sys. Operator Corp.*, 125 FERC ¶ 61,055 at P 97 (Oct. 16, 2008) (finding that the Exceptional Dispatch mechanism accepted by the Commission in a September 2006 Order may no longer be just and reasonable, and expressing concern CAISO's intended expanded reliance on Exceptional Dispatch, and payment structure "may yield unjust and unreasonable outcomes that unduly discriminate against non-resource adequacy resources."); *California Indep. Sys.*

technological changes, or other changed circumstances, may cause a provision to be no longer just and reasonable, not unduly discriminatory or unduly preferential.[115] When differences in rates are challenged "as illegally discriminatory, judicial inquiry devolves on the question of whether the record exhibits factual differences to justify" the disparate treatment.[116]

i. The Blanket Prohibition on Wind and Solar Resources from Providing the Services they are Technically Capable of Providing is Unduly Discriminatory and Preferential

Pursuant to Section 206, the Commission "has a duty to prevent undue discrimination."[117] This standard prohibits one type of market participant from receiving preference over another type that can provide a similar service without an adequate justification. The Commission has explained that different treatment is unduly discriminatory "when there is a difference in rates or services among similarly situated entities."[118] Determining that entities are similarly situated "does

---

Operator Corp., 126 FERC ¶ 61,150 (Feb. 20, 2009) (order on Section 206 investigation, accepting new Exceptional Dispatch proposal by CAISO), *on reh'g*, 129 FERC ¶ 61,144 (Nov. 19, 2009); *Indep. Energy Producers Ass'n v. Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,069 at P 38 (July 20, 2006) (finding compensation to generators under the must offer obligation no longer just and reasonable).

[115] *See, e.g.*, *Reactive Power Requirements for Non-Synchronous Generation*, 153 FERC ¶ 61,175 at P 14 (Nov. 19, 2015) (requiring wind generators to provide dynamic reactive power based on technological advancements).

[116] *St. Michaels Utilities Comm'n v. Fed. Power Comm'n*, 377 F.2d 912, 91 (4th Cir. 1967); *see also City of Vernon, Cal. v. FERC*, 845 F.2d 1042, 1047 (D.C. Cir. 1988).

[117] *Preventing Undue Discrimination and Preference in Transmission Serv.*, Order No. 890, 72 Fed. Reg. 12,266, 12,318, P 425 (Mar. 15, 2007).

[118] *Calpine Oneta Power, L.P.*, 116 FERC ¶ 61,282 at P 36 (Sept. 26, 2006); *El Paso Nat. Gas Co.*, 104 FERC ¶ 61,045 at P 115 (July 9, 2003).

not mean that there are no differences between them; rather, it means there are no differences that are material to the inquiry at hand."[119] Entities are similarly situated "if they are in the same position with respect to the ends that the law seeks to promote or the abuses that it seeks to prevent, even if they are different in many other respects."[120] Irrelevant differences will not make parties dissimilarly situated.[121] Lastly, where a complainant has "met its burden under section 206 to show that the MISO Tariff is unjust, unreasonable, and unduly discriminatory or preferential" it is "appropriate for MISO to remedy its unjust and unreasonable Tariff" even if the issue may be addressed in a future rulemaking or stakeholder proceeding.[122]

As noted by the Commission, "[m]arket rules that . . . prevent new technologies from providing services that they are technically capable of providing can have detrimental impacts on the competitiveness of the organized wholesale

[119] *NYISO*, 162 FERC ¶ 61,124 at *3 (Feb. 15, 2018) (Order granting, in part, and denying, in part, rehearing and clarification, and requiring further compliance).
[120] *Id.* The Commission further explained "Consistent with those precedents, the Commission has, for example, determined that new and existing generators were similarly situated for 'reactive power compensation purposes' because they were equally capable of providing that service, notwithstanding other significant differences." *Id.* (citing *Calpine Oneta Power, L.P.*, 116 F.E.R.C. ¶ 61282 (Sept. 26, 2006)); *see also PJM Interconnection, L.L.C.*, 168 FERC ¶ 61,121 (Aug. 27, 2019) ("'[N]on-federal renewable resources are similarly situated to federal hydroelectric and thermal resources for purposes of transmission curtailments because they all take firm transmission service.'").
[121] *Calpine Corp., et al. v. PJM Interconnection, L.L.C.*, 171 FERC ¶ 61035 at *124 (Apr. 16, 2020).
[122] *Indianapolis Power & Light Co.*, 158 FERC ¶ 61,107 at P 71 (Feb. 1, 2017).

electric markets."[123] Tariffs and market rules must be designed to compensate all resources capable of providing services needed by the grid without specifying eligibility requirements or operating procedures that exclude innovative or new technologies capable of providing the same service. The Commission should move expeditiously to address the identified barriers to participation of advanced wind and solar technologies in MISO's Tariff and business practices manual, and require MISO to adopt a technology-neutral approach that allows for innovative technologies to provide critical grid reliability services.

MISO's Tariff and business practices manual establish an untenable and explicitly discriminatory mechanism for the eligibility of generators within the MISO region to provide certain ancillary grid services. Specifically, DIRs, such as wind and solar resources, "*are not eligible* to provide Operating Reserves to the Day-Ahead or Real-Time Energy and Operating Reserves Markets. For this reason, DIRs do not submit Dispatch Statuses for Regulating, Spinning, On-Line Supplemental, Off-line Supplemental or Short-Term Reserves."[124] MISO's targeting of dispatchable wind and solar resources – and prohibition of them from providing a number of important ancillary grid services for which they could be compensated – is plainly

[123] *Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators*, RM16-23-000, 81 Fed. Reg. 86,522 at P 33 (Nov. 30, 2016).
[124] BPM-002-r22, at 187 (emphasis added); *see also* MISO Tariff, Section 39.2.1.B, "Resource Requirements for Operating Reserves" ("Regulation Qualified Resources in the Day-Ahead Energy and Operating Reserve Market will be limited to (i) committed Generation Resources that are not Dispatchable Intermittent Resources . . .").

unlawful.[125] There is no reasonable wholesale market basis for distinguishing between DIRs being eligible to provide ancillary services as opposed to thermal resources, both of which are capable of offering similar wholesale market services.

As the Commission has observed, the Act "bristles with concern about undue discrimination."[126] One of the primary purposes of this principle is to ensure equality of treatment when similarly situated entities provide substantially similar services. Indeed, courts have long held that an "unjustifiable difference in rates for substantially similar service works an unlawful discrimination" that is prohibited under the FPA.[127] The Commission has consistently recognized "that it is important to remove barriers to participation now so that the competitive benefits are realized without delay."[128] Removing the prohibition would: 1) comply with the requirement that similarly situated resources be treated comparably; 2) be consistent with a litany of FERC orders including orders 888, 841, 755, and 2222; and 3) align with the Commission's precedent regarding the way in which the Commission requires

---

[125] *See also* Michael Goggin et al., *Customer Focused and Clean: Power Markets for the Future*, at 23, Grid Strategies L.L.C. (Nov. 2018) ("MISO bars dispatchable renewables from providing frequency regulation, spinning reserves, and supplemental (non-spinning) reserves, though renewables can provide MISO's new ramping service.").

[126] *Am. Elec. Power Serv. Corp.*, 67 FERC ¶ 61,168, at 61,490 (May 11, 1994) (citing *Associated Gas Distribs. v. FERC*, 824 F.2d 981, 998 (D.C. Cir. 1987) (in regards to the Natural Gas Act)).

[127] *Towns of Alexandria, Minn. v. Fed. Power Comm'n*, 555 F.2d 1020, 1028 (D.C. Cir. 1977); *see also Preventing Undue Discrimination and Preference in Transmission Serv.*, Order No. 890, 72 Fed. Reg. 12,266, 12,318, P 425 (Mar. 15, 2007) (the Commission "has a duty to prevent undue discrimination").

[128] Electric Storage Participation in Markets Operated by RTOs and ISOs, 81 Fed. Reg. 86,522, P 27 (Nov. 30, 2016).

battery storage facilities to be eligible to provide all the services they are technically capable of providing.

a. DIRs are Similarly Situated to Thermal Resources for the Purposes of Providing Ancillary Services in MISO's Footprint

As discussed in detail in Section IV(1)(iv), DIRs are similarly situated to thermal resources with regard to the provision of various ancillary services.[129] DIRs have been providing ancillary services for over a decade in some regions, and an avalanche of research and studies show that DIRs are similarly situated resources for the purposes of providing a variety of ancillary services including, but not limited to, frequency regulation, spinning reserves, and supplemental reserves.

Where different technologies appear operationally comparable to the grid, there simply is no basis for differentiating eligibility to participate in the market. The Commission has previously determined that new and existing generators were similarly situated for "reactive power compensation purposes" because they were equally capable of providing that specific service, notwithstanding their technical differences.[130] Likewise, a practice or procedure that grants one entity a competitive

---

[129] Even where the Commission determined that one resource type was not similarly situated to another, the remedy was to use different compensation methodologies, not a blanket prohibition from participating the wholesale electricity markets. *ISO New England Inc. et al.*, 147 FERC ¶ 61,172, at 86, 89 (May 30, 2014).

[130] *NYISO*, 162 FERC ¶ 61,124 at P 10 (Feb. 15, 2018) (citing *Calpine Oneta Power, L.P.*, 116 FERC ¶ 61,282 at P 36 (Sept. 26, 2006), *reh'g denied* 119 FERC ¶ 61,177 (May 21, 2007); *see also Iberdrola Renewables, Inc. et al. v. Bonneville Power Admin.*, 137 FERC ¶ 61,185 at P 62 (Dec. 7, 2011), *reh'g denied* 141 FERC ¶ 61,233 (Dec. 20, 2012) (explaining that that "non-[f]ederal renewable resources are similarly-situated to [f]ederal hydroelectric and thermal resources for purposes of transmission curtailments because they all take firm transmission service")).

advantage over another similarly situated entity may constitute undue discrimination or an undue preference.[131]

Where there is disparity in the treatment of similarly situated entities – as there is here – a valid reason must be presented in order to show that the disparity is not unduly discriminatory or preferential. For example, in *Tenaska Clear Creek Wind, LLC v. Southwest Power Pool, Inc.*, the Commission held that that Southwest Power Pool, Inc's (hereafter "SPP") use of a 2019 planning model to conduct the restudies for one project, while continuing to use an older 2017 planning model for other similarly situated projects, was unduly discriminatory or preferential.[132] There, the Commission explained that SPP was obligated, and failed, to sufficiently demonstrate that there was a legitimate factor justifying the disparate treatment between similarly situated customers.[133] In that instance, FERC concluded that SPP had no reasonable justification for applying a different vintage of modelling data in the restudy of projects in the same study cluster.[134] Specifically, FERC rejected SPP's argument that the higher queue position of some projects justified the application of a different modeling method.[135]

DIRs in MISO can provide a wide host of ancillary services on an operationally comparable basis to thermal resources, often able to do so with *twice*

---

[131] *NYISO*, 162 FERC 61,107 at P 40 (Feb. 15, 2018).
[132] *Tenaska Clear Creek Wind, L.L.C. v. SPP*, 177 FERC 61,200 at PP 62 and 73 (Dec. 16, 2021).
[133] *Id.* at P 73.
[134] *Id.*
[135] *Id.* at P 74.

the accuracy of thermal resources. Throughout the stakeholder process examining this issue, MISO failed to articulate a reasoned justification for the prohibition, and instead we are left with the unsatisfactory excuse from MISO that the prohibition is due to, among other things, "resource constraints."[136] This inadequate justification, which facilitates clear anticompetitive discrimination, does not withstand Section 206 scrutiny. Conspicuously, no other FERC jurisdictional RTO/ISO so overtly prohibits DIRs from providing these grid services in their tariffs.

The absence of competition is holding back the full capability of DIRs within MISO at a time when it is needed more than ever to provide the grid flexibility in the face of shrinking reserve margins and a changing resource mix.[137] Where the services that resources offer are technologically and operationally equivalent, the resource type provides no reasonable basis for discrimination.[138] Here, there is no question that DIRs are technically capable of providing the same or substantially better ancillary services as thermal power, traditional nuclear facilities, and

---

[136] *See Allow Dispatchable Intermittent Resources (DIRS) to Provide Regulation Service IR069, MISO* (Last Mod. Dec. 16, 2022), https://extranet.misoenergy.org/stakeholder-engagement/MISO-Dashboard/allow-dispatchable-intermittent-resources-dirs-to-provide-regulation-service/ (stating that "this project will remain in the Parking Lot due to resource constraints").

[137] Milligan Declaration at 1–4, 6.

[138] *Calpine Oneta Power L.P.*, 113 F.E.R.C. ¶ 63015 (Oct. 28, 2005), *aff'd Calpine Oneta Power L.P.*, 116 F.E.R.C. ¶ 61,282 at PP 26–27 (Sept. 26, 2006) (independent power producer and traditional vertically integrated utility are similarly situated for purposes of being compensated for their reactive power); *Mich. Elec. Transmission Co.*, 97 FERC ¶ 61,187 at 61,852–53 (Nov. 14, 2001) ("it is hardly consistent to allow an affiliate to have different and/or superior terms and conditions for interconnection than non-affiliates").

demand response providers.[139] There is no justification for such discriminatory treatment based solely on the type of equipment by which the service is delivered. Consistent with its longstanding precedent on undue discrimination, the Commission must find the prohibition as applied within MISO is unduly discriminatory and preferential. MISO's tariff and business practices manual provisions are thus contrary to the requirements of the FPA and inconsistent with the Commission's obligation to ensure just and reasonable rates.

b. Allowing DIRs to Participate in MISO's Ancillary Service Market is Consistent with the Commission's Orders Addressing Undue Discrimination and Promoting Competitive Wholesale Markets

FERC Order 888, promulgated in 1996, requires: "all public utilities that own, operate or control interstate transmission facilities to offer network and point-to-point transmission services (*and ancillary services*) to all eligible buyers and sellers in wholesale bulk power markets, and to take transmission service for their own uses under the same rates, terms and conditions offered to others."[140] This order laid the foundation for FERC jurisdictional RTO/ISOs to begin developing various ancillary service market products. The only RTO/ISO to explicitly ban DIRs from being eligible to provide these services is MISO.

---

[139] *See generally* Milligan Declaration.

[140] Final Rulemaking: FERC, Order 888: *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Servs. by Pub. Utils.; Recovery of Stranded Costs by Pub. Utils. and Transmitting Utils.*, 78 FERC ¶ 61,220 (Mar. 4, 1997) (hereinafter "Order 888")").

Removing the indiscriminate blanket prohibition on DIRs in MISO is consistent with the logic undergirding Order 841. Specifically, Order 841 involved FERC's effort to "remove existing barriers to the participation of electric storage resources" (hereafter "ESRs") in RTO/ISO markets. . . ."[141] There Commission recognized "that market rules designed for traditional resources can create barriers to entry for emerging technologies."[142] Order No. 841 required RTOs to revise their Tariffs to accommodate and enable storage energy resources to provide all of the market services they are capable of providing, which specifically included eligibility to provide ancillary services.[143] We request the same treatment here.

Allowing wind, solar, and battery hybrid resources to fully participate in MISO's ancillary services market is also consistent with Commission Order No. 755.[144] In that Order, the Commission revised its regulations to remedy undue discrimination in the procurement of frequency regulation in the organized wholesale electricity markets by ensuring that providers of frequency regulation receive just and reasonable rates, including performance payments for both regulation up and regulation down services.[145]

In Order No. 755, the Commission required RTOs to compensate "frequency regulation" resources based on the actual amount of frequency regulation service

---

[141] *Nat'l Ass'n of Regul. Util. Commissioners v. FERC*, 964 F.3d 1177, 1182 (D.C. Cir. 2020).
[142] *See generally* Order No. 841, 162 FERC ¶ 61,127.
[143] *See* Order No. 841, 162 FERC ¶ 61,127.
[144] Order No. 755, 137 FERC ¶ 61,064 at P 1 (2011).
[145] *Id.* at P 1.

provided in responding to a transmission system operator's automatic generator control (hereafter "AGC") signal for purposes of responding to actual or anticipated frequency deviations or interchange power imbalances. Order No. 755 directed RTOs to implement a two-part payment for frequency regulation service, including: (1) a capacity payment that includes the marginal unit's opportunity costs; and (2) a payment for performance that reflects the quantity of frequency regulation service provided by a resource when the resource is accurately following the dispatch signal.

The Commission has also found that for other ancillary grid services, such as reactive supply services, that the mechanisms for providing compensation for this service to generators must apply consistently to all generators within the region in order to eliminate undue discrimination and preferential treatment between generators that are competing within the same regional market.[146] In this context, the Commission invited parties to "propose a rate for *all generators* that compensates them comparably for the level of reactive power actually needed and used."[147]

Complainant's request is also consistent with Order 2222, where the Commission directed RTO/ISOs to accommodate aggregations of DER technologies, because excluding such resources would be a barrier to emerging or future

---

[146] *See, e.g.*, *Midwest ISO,* 109 FERC ¶ 61,005 at P 40 (The Commission made clear with regard to MISO that "only a Schedule 2 that includes *all generators* ... is just and reasonable and not unduly discriminatory or preferential") (emphasis added).
[147] *Midwest ISO,* 116 FERC ¶ 61,284 at P 23 (2006) (emphasis added); *see also Reh'g Order,* 129 FERC ¶ 61,041 at P 32.

technologies and prevent them from being eligible to "provide all of the capacity, energy, and ancillary services that they are technically capable of providing."[148] For example, in the Commission's order addressing NYISO's Order 2222 Compliance Filing, the Commission faulted NYISO for failing to propose tariff modifications that would permit aggregations of inverter-based resources to provide all the ancillary services for which they are technically capable.[149] NYISO later complied with this directive, and proposed tariff changes allowing inverter-based resource aggregations to provide ancillary services.[150] Order 2222 goes to great lengths to recognize that it is not the nature of the technology that is central to its eligibility to participate in RTO/ISOs, but rather the ability of a resource to meet the qualification and performance requirements to provide the service they are offering to the market.[151]

Indeed, Order 2222 and the resulting compliance filings reiterate the core principle that it is the service, not the form of the technology or the business model, that matters. Throughout Order 2222 and the related orders on compliance filings, the Commission rejects efforts to narrowly define the scope of technology or the business model that may comprise a DER.[152] Moreover, a long line of precedent

---

[148] *Id.* at P 141.
[149] *See Order on Compliance Filing*, ER21-2460 at P 93(June 7, 2022).
[150] *See NYISO Compliance Filing*, ER21-2460 at 8–9(Nov. 14, 2022).
[151] *Id.* at P 117.
[152] *See, e.g.*, *Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 172 FERC ¶ 61,247 at P 265, RM18-9 (Sept. 17, 2020) (rejecting standard metering and telemetry requirements in light of the variety of potential aggregation business models), P 340 (market participation agreements for DERs

recognizes that it is the ability to provide the requisite service that counts, not the mechanism producing it.[153] The only relevant characteristic for the Commission to consider with regard to the eligibility of wind, solar, and battery hybrid resources to participate in wholesale ancillary markets is operational, specifically, the quality and accuracy of the ancillary services wind and solar can provide.[154]

Allowing wind, solar, and battery hybrids to be eligible to provide ancillary services in MISO is consistent with the Commission's goals of eliminating barriers to participation in wholesale markets and necessary to comply with the requirements of the FPA.

c. Allowing DIRs to Participate in MISO's Ancillary Service Market is Consistent with the Commission's Treatment of Battery Storage Resources

This core concept of prohibiting undue discrimination for comparable services is perhaps most clearly articulated in *Indianapolis Power and Light* (hereafter "IP&L").[155] There, a utility filed a complaint arguing that MISO's tariff was unjust, unreasonable, and unduly discriminatory or preferential because it failed to, among other things, properly accommodate and provide compensation for the operational

---

"should not limit the business models under which distributed energy resources can operate"), 353 (allowing aggregators with varying business models to be included in such agreements increases ability for DERs to participate in markets).

[153] *See, e.g.*, *Calpine Oneta Power L.P.*, 113 FERC ¶ 63,015 (Oct. 28, 2005).

[154] *See Demand Response Supporters v. N*YISO 145 FERC ¶ 61,162 at PP 31–32 (Nov. 22, 2013) (different forms of demand response must be allowed to compete on "equal footing" regardless of the mechanism used to reduce the amount of energy purchased).

[155] *See Indianapolis Power and Light v. MISO*, 158 FERC ¶ 61,107 at PP 69–72 (2017) (hereafter "*IP&L*").

characteristics of grid-scale battery storage devices such as IP&L's 20 MW lithium ion Battery Energy Storage System.[156]

Ultimately, the Commission agreed with IP&L because MISO's tariff "unnecessarily restrict[ed] competition by preventing ESRs from providing all the services that they are technically capable of providing, which could lead to unjust and unreasonable rates."[157] The Commission made clear that although an ESR can participate in MISO as an Stored Energy Resource, "this resource category limits the resource to participation in MISO's regulation market and does not allow the resource to qualify for capacity, energy, ramp capability, and contingency reserves."[158] In addition, the Commission said that while an ESR may be able to participate in MISO's organized markets using market rules that were designed for generation, demand response, or other types of resources, "these participation models were designed for those other types of resources and therefore may fail to accommodate the unique physical and operational characteristics of electric storage resources."[159]

As such, the Commission ordered MISO to submit a compliance filing proposing Tariff revisions that "accommodate the participation of all electric storage resources, regardless of the technology, in all MISO capacity, energy *and ancillary service markets that they are technically capable of participating in*."[160]

---

[156] *Id.*
[157] *Id.* at P 69.
[158] *Id.*
[159] *Id.*
[160] *Id.* at P 72 (emphasis added).

There is little daylight between the MISO's discriminatory eligibility parameters in the IP&L matter, and MISO's prohibition of DIRs from providing ancillary services.

ii. Unjust and Unreasonable Rates Under the FPA

Fostering competitive bulk power markets is the bedrock of the Commission's statutory task to ensure just and reasonable rates in RTO/ISOs. To ensure reliable energy at just and reasonable rates, the Commission has encouraged the development of wholesale competition across market products.[161] Specifically, FERC "undertakes to ensure 'just and reasonable' wholesale rates by enhancing competition—attempting ... 'to break down regulatory and economic barriers that hinder a free market in wholesale electricity.'"[162] FERC has consistently found that the best way "to bring more efficient, lower cost power to the Nation's electricity consumers" is through robust competition in organized electricity markets.[163] Effective competition is critical to well-functioning markets because it "supports just and reasonable rates" by "encourage[ing] entry and exit," "promot[ing] innovation," while "incentivizing the efficient operation of resources."[164]

FERC has identified numerous benefits of a robust ancillary services market that support a healthy and well-functioning grid, that in turn supports just and

---

[161] *Reg'l Transmission Orgs.*, 65 Fed. Reg. 810, 811 (Jan. 6, 2000) (to be codified at 18 C.F.R. pt. 35).
[162] *FERC v. EPSA*, 577 U.S. 260, 267 (2016) (quoting *Morgan Stanley Capital Grp. Inc. v. Pub. Util. Dist. No. 1 of Snohomish Cty.*, 554 U.S. 527, 536, (2008)).
[163] *Promoting Wholesale Competition*, Order No. 888, 75 FERC ¶ 61,080 at 1 (1996).
[164] Michael Panfil & Rama Zakaria, *Uncovering Wholesale Electricity Market Principles*, 9 Mich. J. Env't & Admin. L. 145, 174 (2019), https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1098&context=mjeal.

reasonable rates. In the context of ancillary services, the Commission has opined upon its continuing obligation on "a case-by-case basis to remove barriers to the entry of new technologies" in order to ensure just and reasonable rates.[165]

iii. The Blanket Prohibition on Wind and Solar Resources from Providing the Services Results in Rates that are Unjust and Unreasonable

There is no question that MISO's prohibition is an unnecessary barrier to robust competition in this market, as the existing structure insulates non-DIR resources from competitive pressures. The resulting harm is meaningful, ongoing, and will worsen absent action from the Commission to eliminate these barriers to competition. In this context, allowing DIRs to fully participate in MISO's wholesale markets is fully consistent with the Commission's commitment to "adopt reforms that will remove barriers to the integration of variable energy resources" in the marketplace.[166]

The participation of wind and solar resources in ancillary services markets contributes to just and reasonable rates in several ways. DIRs can provide value to the markets because of their unique capabilities, while also increasing the total quantity of low or no-marginal cost resources capable of providing ancillary services. MISO's prohibition is, on its face, anti-competitive and harmful to the functioning of the wholesale market and therefore results in rates that are not

---

[165] *Third-Party Provision of Ancillary Services*; Acct. & Fin. Reporting for New Elec. Storage Techs., 135 FERC ¶ 61,240, 62,338 (2011).
[166] *See, e.g.*, *Integration of Variable Energy Res.*, 139 FERC ¶ 61246 at P 1 (June 22, 2012).

just and reasonable.[167]

Unlocking greater competition among ancillary services providers within MISO could both reduce overall system costs while creating the pressure for innovation and enhanced ancillary service capability, both of which serve to ensure just and reasonable rates. Even before one considers the acute operational strains and threat to reliability looming in MISO, the evidence before the Commission compels the conclusion that MISO's ban results in rates that are not just and reasonable.

VI. REMEDY REQUESTED

The Commission should find that the MISO Tariff and BPM are unjust and unreasonable, unduly discriminatory or preferential for the reasons discussed above. While a complainant bears the burden to establish that existing rates are not just and reasonable, or unduly discriminatory, it does not face a burden to offer an alternate replacement rate that meets statutory requirements.[168] Complainant

---

[167] *See* Order No. 841, 162 FERC ¶ 61,127 at 1 (2018) (finding that the existing "market rules are unjust and unreasonable in light of barriers . . . to the participation of electric storage resources . . . thereby reducing competition and failing to ensure just and reasonable rates") *see generally* Enhancement of Electricity Market Surveillance and Analysis through Ongoing Electric Delivery of Data from Regional Transmission Organizations and Independent System Operators, 139 FERC ¶ 61,053 at 57 (2012) (detecting "anti-competitive behavior or manipulative behavior, or ineffective market rules . . . ensure[s] just and reasonable rates"); PJM Interconnection, LLC, 112 FERC ¶ 61,031, at 43 (2005) (ensuring that wholesale electric markets are competitive is necessary to ensure that "wholesale electric rates that are just and reasonable").

[168] *See, e.g.*, *New England Power Generators Ass'n, Inc.*, 153 FERC ¶ 61,222, at P 11 (2015) (If complainant meets its burden, the Commission then determines the just and reasonable replacement rate).

requests the Commission direct MISO to submit a compliance filing, within sixty days from the date of a final Order, proposing Tariff and corresponding BPM revisions that accommodates the participation of DIRs in all MISO's ancillary services markets in which they are technically capable of participating, and in a way that acknowledges their unique physical and operational characteristics.[169]

VII. RULE 206 REQUIREMENTS

To the extent not already provided herein, SEIA provides the following additional information required by Rule 206 of the Commission's Rules of Practice and Procedure:

a. Good Faith Estimate of Financial Impact or Harm (Rule 206 (b)(4)): The total Ancillary Service Market in MISO is significant, with the average price in 2021 being roughly $13.55 p/MWh for regulation reserves, $3.54 p/MWh for spinning reserves, and $1.11 p/MWh for supplemental reserves. As a result of MISO's prohibition, SEIA's members are ineligible to access any of this market.

b. Operational or Nonfinancial Impacts (Rule 206 (b)(5)): The issues presented here have the effect of potentially creating unjust and unreasonable rates in MISO's wholesale market, and also stifle innovation and competition among renewable resources.

[169] *See Indianapolis Power & Light Co.*, 158 FERC ¶ 61,107 (2017).

c. Other Pending Matters (Rule 206 (b)(6)): The issues presented here are not pending in an existing Commission proceeding or a proceeding in any other forum in which SEIA is a party.

d. Specific Relief or Remedy Request (Rule 206 (b)(7)): The specific relief sought by SEIA is set forth in detail in the Complaint.

e. Documents Supporting the Complaint (Rule 206 (b)(8)): SEIA has attached to this Complaint the Declaration of Michael Milligan and additional reports and studies in support of its request for relief.

f. Alternative Dispute Resolution (Rule 206 (b)(9)): SEIA has not used the Commission's Enforcement Hotline or Dispute Resolution Services and does not believe at this time that alternative dispute resolution would resolve the issues underlying this Complaint. SEIA has no reason to expect that alternative dispute resolution would result in the relief requested herein.

g. Form of Notice (Rule 206 (b)(10)): A form of notice of Complaint suitable for publication in the Federal Register is attached hereto.

h. Fast Track Processing (Rule 206 (b)(11)): Fast track processing is not sought by SEIA.

i. Service (Rule 206 (c)): SEIA has served a copy of this Complaint upon representatives for the Respondent (including those corporate officials designated by MISO on the FERC website for receipt of complaints) via electronic mail, simultaneous with the filing of this Complaint.

VIII. CONCLUSION

For the foregoing reasons, SEIA respectfully requests the Commission grant the Complaint, and provide SEIA with the relief described above.

Dated: January 31, 2023.

Respectfully submitted,

/s/ Aaron Stemplewicz
Aaron Stemplewicz
Staff Attorney
Clean Energy Program
Earthjustice
1617 John F. Kennedy Blvd., Suite 1130
Philadelphia, PA 19103
T: (215) 717-4524
astemplewicz@earthjustice.org

/s/ Christine A Powell
Christine A. Powell
Deputy Managing Attorney, Clean Energy Program
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111
cpowell@earthjustice.or org

Counsel for SEIA

/s/ Melissa Alfano
Melissa Alfano
Director of Energy Markets & Counsel
Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2873
malfano@seia.org

/s/ Ben Norris
Ben Norris
Senior Director of Regulatory Affairs & Counsel

Solar Energy Industries Association
1425 K Street, NW
Suite 1000
Washington, D.C. 20005
T: 202.556.2909
bnorris@seia.org

CERTIFICATE OF SERVICE

I hereby certify that I have on this date caused a copy of the foregoing document to be served upon Midcontinent Independent System Operator, L.L.C., at the following addresses obtained from the Commission's list of corporate officials designated to receive service pursuant to 18 C.F.R. § 385.2010(k):

Dated: January 31, 2023.

/s/ Aaron Stemplewicz

Aaron Stemplewicz
Staff Attorney
Clean Energy Program
Earthjustice
1617 John F. Kennedy Blvd., Suite 1130
Philadelphia, PA 19103
T: (215) 717-4524
astemplewicz@earthjustice.org