

FIFTEEN YEARS LATER – LITERATURE PERSPECTIVES ON THE IMPACTS OF DWORKIN AND GOLDWASSER AND FERC ORDER NO. 719

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Synopsis: In the several decades since they were first established, the roles and responsibilities of regional transmission organizations and independent system operators have evolved and expanded, while the electricity market itself has become more complex as a result of emerging technologies and social and regulatory pressures to reduce carbon emissions. The combination of these factors has led numerous commentators to question whether RTOs' and ISOs' governance structures are adequate to guide the organizations in an increasingly complex – and scrutinized – environment. This article summarizes the critiques and suggestions regarding RTO/ISO governance from academic literature. It then synthesizes those contributions into a discussion of the aspects of governance that appear to work well and those that may be considered targets for future reform.

I. INTRODUCTION

Regional transmission organizations (RTOs) and independent system operators (ISOs) are organizations founded on the ideal of providing non-discriminatory access to regional electric transmission grids.[1] But over time, the roles of RTOs and ISOs have expanded to encompass additional operations associated with moving electricity from generators to end-users.[2] Those tasks include ensuring grid

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1. *RTOs and ISOs*, FERC, https://ferc.gov/power-sales-and-markets/rtos-and-isos (last visited Oct. 28, 2023).

2. Michael H. Dworkin & Rachel Aslin Goldwasser, *Ensuring Consideration of the Public Interest in the Governance and Accountability of Regional Transmission Organization*, 28 ENERGY L.J. 543, 553 (2007).

reliability, managing congestion, overseeing grid expansion, scheduling transmission, monitoring markets, and coordinating planning for critical new transmission lines, among other things.[3] Many of these individual tasks have become more complex as the electricity market has evolved with the addition of emergent forms of energy generation, such as wind and solar. These new technologies hold great promise for reducing society's dependence on fossil fuels, but they also add variability and uncertainty to the electric grid that RTOs and ISOs are being asked to manage with precision.

As a result of their outsized role in managing numerous elements of our electricity system, the governance of RTOs and ISOs is important not only to the proper functioning of the grid but also to many other social issues of great interest. Among other things, RTOs and ISOs now impact energy security and the fight against climate change because of their ability to control when, how, and even if, new energy generation sources come online. The concept of governance includes not only the question of which individuals or groups within an organization have authority to take which actions, but also what processes and rules the decision-makers must follow when acting. Depending on what those processes and rules permit, decision-makers may be able to act either with relative independence or subject to strict accountability from the outside. In that way, these governance structures – especially structures that impose accountability – can play a significant role in affecting the substantive outcome of the RTOs' and ISOs' decisions.

Because RTOs and ISOs exist in an unusual space between private and public governance – neither owing allegiance to shareholders as publicly held corporations nor subject to public accountability as government agencies – finding the proper balance of independence and accountability in developing a governance structure for RTOs and ISOs has proved challenging. That challenge has only grown as both their operations and the markets they oversee have become more complex.

In 2007, Michael H. Dworkin and Rachel Aslin Goldwasser published what has proved to be an enduring critique of RTO governance.[4] In that piece, Dworkin and Goldwasser focus especially on the role of the public in the operations of RTOs and ISOs.[5] Shortly thereafter, the Federal Energy Regulatory Commission (FERC) issued Order No. 719, meant to improve, among other things, stakeholder responsiveness in RTO/ISO governance.[6] Since that time, several authors have opined on the pros and cons of the existing governance structures. As illustrated by the sections that follow, many have suggested modifications to the existing system to make it more responsive to the public interest. This article seeks to survey those numerous contributions to the literature and to amplify some of the aspects of RTO governance that appear to work well and those most in need of reform. Building from Dworkin and Goldwasser's strong foundation, it suggests

3. *Id.*

4. *See generally* Dworkin, *supra* note 2.

5. *Id.*

6. Order No. 719, *Wholesale Competition in Regions with Organized Electric Markets*, 125 FERC ¶ 61,071 P 7 (2008).

that the drawbacks to RTO and ISO governance first identified in 2007 continue to generate concern.

II. RTO/ISO FORMATION AND STRUCTURE

RTOs and ISOs emerged in the 1990s and 2000s out of FERC initiatives to encourage open access to transmission infrastructure.[7]

Historically, electricity was provided to end users in the United States by vertically integrated utilities that built and owned generation, transmission, and distribution infrastructure.[8] Starting in the 1990s, FERC tried to increase competition in the electricity industry by remedying "undue discrimination in access to the monopoly owned transmission wires that control whether and to whom electricity can be transported."[9] In furtherance of that purpose, FERC issued Orders No. 888 and 889 in April 1996.[10] Order No. 888 allowed groups of electricity generators, transmission owners, and utilities to form ISOs that could collectively design and operate electric system operations, including operational control over transmission resources.[11] Order No. 888 provided guidance as to how those ISOs should be formed and governed.[12] Order No. 889 provided further incentives for transmission operators to join an ISO, but did not include substantial guidance regarding governance.[13]

FERC went a step further in 1999 with Order No. 2000.[14] In that order, FERC amended its regulations to encourage the formation of RTOs.[15] That order included a list of "minimum characteristics and functions" that each RTO must have, building from and slightly modifying the list of characteristics initially required for ISOs in 1996.[16] Those minimum characteristics and functions included, among other things, requirements that touched on governance of the RTO, including independence,[17] tariff administration and design,[18] and ancillary services.[19] Today, the distinction between an RTO formed pursuant to Order No. 2000 and an ISO formed under Orders No. 888 and 889 is not significant.[20]

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7. *RTOs and ISOs*, *supra* note 1; *see* Order No. 888, *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, 75 FERC ¶ 61,080 (1996); *see* Order No. 889, *Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, 75 FERC ¶ 61,078 (1996); *see* Order No. 2000, *Regional Transmission Organization*, 89 FERC ¶ 61,285 (1999).

8. *Electric Power Markets*, FERC, https://ferc.gov/electric-power-markets (last visited Oct. 28, 2023).

9. Order No. 888, *supra* note 7, at P 1.

10. *Id.*; Order No. 889, *supra* note 7, at i.

11. Order No. 888, *supra* note 7, at 1, P 279.

12. *Id.* at 279-86.

13. Order No. 889, *supra* note 7, at P 1; Kenneth Rose et al., *Research report: Summary of key state issues of FERC orders 888 and 889*, NRRI 51-52 (Jan. 1997), https://www.osti.gov/biblio/464146.

14. *See generally* Order No. 2000, *supra* note 7.

15. *Id.* at P 1.

16. *Id.* at PP 1, 4-5.

17. *Id.* at P 152.

18. Order No. 2000, *supra* note 7, at P 324.

19. *Id.* at P 393.

20. Seth Blumsack, *EME 801 Energy Markets, Policy, and Regulation: Regional Transmission Organizations*, PENN. STATE UNIV. https://www.e-education.psu.edu/eme801/node/692 (last visited Nov. 1, 2023).

Although FERC did not mandate formation of ISOs or RTOs,[21] there has been significant uptake. Today, there are seven RTOs and ISOs that serve approximately two-thirds of electricity customers in the United States.[22] Each RTO and ISO has a unique structure, but there are many similarities among them.[23] Each RTO or ISO serves to: manage bulk power transport; provide non-discriminatory access to transmission infrastructure; dispatch electricity generation to balance supply and demand in real time; plan for generation and transmission; and run markets for electricity generation.[24] Decisions are generally made by a board and informed by committees comprised of stakeholders.[25]

In part due to their roles in long-term planning and as gatekeepers to the electric grid, RTO and ISO decision-making has been the subject of increasing focus. RTOs and ISOs have considerable authority to influence which technologies are connected to the electric grid.[26] Given the RTOs' and ISOs' mandate to ensure grid reliability and the composition of their voting membership, which includes vertically-integrated utilities and large owners of transmission lines, they have been perceived by some as developing rules and practices that have, directly or indirectly, advantaged legacy electric generation systems over newer technologies such as wind or solar.[27] In the eyes of those commentators, RTOs' and ISOs' perceived preference for fossil fuel systems has created tension with broader social efforts to combat climate change by reducing carbon emissions from fossil fuel combustion.[28] Indeed, longstanding concerns about RTO/ISO governance have taken on greater importance in light of tensions between legacy generation systems and renewables, particularly with respect to which parties are permitted to participate in decision-making and what role the public interest has in influencing RTO/ISO decisions.

III. RTO AND ISO STAKEHOLDER RESPONSIVENESS

In its initial orders sanctioning the formation of ISOs and RTOs, FERC took a light-handed approach to mandates about organization governance. FERC intended for its Order No. 2000 "to be neutral as to organizational form."[29] But it did include minimum characteristics and minimum functions of an RTO that bear on RTO governance.[30] Order No. 2000 described an "independence" principle that required that RTOs be designed to have "a decision-making process that is

21. Kate Konschnik, *RTOGov: Exploring Links Between Market Decision-Making Processes and Outcomes*, Duke Nicholas Inst. Env't Pol'y Sols. 2 (Sept. 2019), https://nicholasinstitute.duke.edu/sites/default/files/publications/RTOGov_Exploring_Links_Final.pdf.

22. *Power Market Structure*, EPA, https://www.epa.gov/green-power-markets/power-market-structure (last visited Oct. 28, 2023).

23. Blumsack, *supra* note 20.

24. *Id.*

25. *Id.*

26. Shelly Welton, *Rethinking Grid Governance for the Climate Change Era*, CALIF. L. REV. 209, 230-32 (2021).

27. *Id.* at 241-52.

28. *Id.* at 238-40.

29. Order No. 2000, *supra* note 7, at P 125.

30. *Id.* at PP 1, 4-5.

independent of control by any market participant or class of participants,"[31] and FERC defined the term "market participant."[32] Order No. 2000 also required that RTOs have operational authority for transmission facilities and for security coordination, but even there, FERC expressly avoided being overly prescriptive in order to "allow RTOs flexibility."[33]

As RTOs matured, both FERC and the literature started to pay more attention to RTO governance. FERC proposed a new rulemaking in July 2007 that would (and ultimately did), among other things, address RTOs' relationships with their stakeholders.[34] Shortly thereafter, Professors Dworkin and Goldwasser published their article exploring questions of accountability in RTO governance.[35] In that piece, Dworkin and Goldwasser argued that FERC had relied too much on market forces to create "just and reasonable" rates.[36] They posited that FERC overlooked several factors in providing for RTOs originally, as well as within its then-pending notice of proposed rulemaking.[37] Among them, Dworkin and Goldwasser advocated for greater consideration of the public interest in RTO decision-making, in addition to the interests of the stakeholders as defined in FERC regulations.[38]

Dworkin and Goldwasser described the many functions of RTOs and explained why accountability within the RTO grid governance system was both important and difficult to achieve.[39] The numerous stakeholders with interest in RTO operations – FERC, market participants, states, and the public at large – are all impacted by RTOs, and they can all claim, to a greater or lesser extent, that the RTO either is or should be accountable to them.[40] These competing interests require RTOs to balance the pressures of different groups that have varying levels of authority over RTO actions.[41] Accountability is further complicated by RTOs' status as non-profit organizations.[42] As non-profits, RTOs cannot be made financially responsible for the results of their actions, the costs of which are ultimately borne by market participants and end-users.[43]

In 2008, FERC finalized its proposed rule under Order No. 719 in an effort to "improve the operation of wholesale electric markets."[44] Order No. 719 included provisions involving a number of RTO functions, including market pricing, long-term power contracting, and market monitoring, but it notably included provisions related to the "responsiveness of [RTOs] and [ISOs] to their customers and

31. *Id.* at P 194.
32. *Id.* at P 195.
33. Order No. 2000, *supra* note 7, at PP 277-78.
34. Notice of Proposed Rulemaking, *Wholesale Competition in Regions with Organized Electric Markets*, 72 Fed. Reg., 36,276 (2007).
35. Dworkin, *surpa* note 2.
36. *Id.* at 545-46.
37. *Id.*
38. *Id.* at 546.
39. Dworkin, *supra* note 2, at 578-91.
40. *Id.* at 578-79.
41. *Id.* at 579-80.
42. *Today in Energy*, EIA (Apr. 4, 2011), https://www.eia.gov/todayinenergy/detail.php?id=790.
43. Dworkin, *supra* note 2, at 580-81.
44. Order No. 719, *supra* note 6, at P 1.

other stakeholders, and ultimately to the consumers who benefit from and pay for electricity services."[45] Recognizing that "[n]either Order No. 888 nor Order No. 2000 mandated specific RTO board governance requirements," FERC sought to address stakeholders' concerns that RTOs and ISOs were not responsive enough to stakeholders and electric customers.[46] To that end, FERC required each RTO to submit a compliance filing demonstrating practices it had in place to ensure responsiveness to stakeholders.[47] FERC explained that it intended to assess those filings on four criteria: inclusiveness, fairness in balancing diverse interests, representation of minority positions, and ongoing responsiveness.[48] These criteria speak to some of the accountability concerns that Dworkin and Goldwasser identified, and if energetically implemented, could have improved RTO governance.[49]

In response to Order No. 719, each of the six interstate RTOs/ISOs submitted a compliance report to FERC.[50] While some RTOs/ISOs proposed making small changes to enhance their responsiveness to shareholders,[51] each of the RTOs/ISOs asserted that their existing processes and protocols either largely or entirely complied with the responsiveness requirements of Order No. 719.[52]

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45. *Id.*

46. *Id.* at PP 248-49.

47. *Id.* at PP 250, 261.

48. Order No. 719, *supra* note 6, at PP 251, 262-64.

49. Dworkin, *supra* note 2, at 578-600.

50. *California Independent System Operator Corporation Compliance Filing*, FERC Docket No. ER09-1048 (Apr. 28, 2009) [hereinafter *CAISO Compliance Filing*]; *Midwest Independent Transmission System Operator, Inc., Compliance Filing*, FERC Docket No. ER09-1049 (Apr. 28, 2009) [hereinafter *MISO Compliance Filing*]; *Southwest Power Pool, Inc., Compliance Filing*, FERC Docket No. ER09-1050 (Apr. 28, 2009) [hereinafter *SPP Compliance Filing*]; ISO New England Inc. Compliance Filing, FERC Docket No. ER09-1051 (Apr. 28, 2009) [hereinafter *ISO-NE Compliance Filing*]; *PJM Interconnection, L.L.C., Compliance Filing*, FERC Docket No. ER09-1063 (Apr. 29, 2009) [hereinafter *PJM Compliance Filing*]; *New York Independent System Operator, Inc., Compliance Filing*, FERC Docket No. ER09-1142 (May 15, 2009) [hereinafter NYISO Compliance Filing].

51. *CAISO Compliance Filing*, *supra* note 50, at 8-10 (discussing goal of improved management of stakeholder comments and establishment of a Stakeholder Symposium); *MISO Compliance Filing*, *supra* note 50, at PP 42-43 (discussing a commitment to formally include minority positions in Advisory Committee minutes); *ISO-NE Compliance Filing*, *supra* note 50, at 112-13 (proposing to post committee meeting agendas and clarify that stakeholders may submit written materials to the Board or any committee); *id.* at 116 (committing to provide stakeholders more information with which to evaluate the implications of ISO-NE's activities); *NYISO Compliance Filing*, *supra* note 50, at 36 (noting that, going forward, NYISO staff will be required to communicate minority positions to the Board in their briefing materials).

52. *See CAISO Compliance Filing*, *supra* note 50, at 2 ("The existing governance practices and procedures of CAISO provide the most direct solution to the Commission's concerns. . . ."); *MISO Compliance Filing*, *supra* note 50, at 5 ("The Midwest ISO believes that its current stakeholder representation structure and processes generally comply with the responsiveness requirements of Order No. 719."); *SPP Compliance Filing*, *supra* note 50, at 35-42 (stating, in response to each of FERC's four Order No. 719 responsiveness criteria, that SPP's existing processes were adequate); *ISO-NE Compliance Filing*, *supra* note 50, at 99 ("While . . . ISO-NE proposes herein to enhance its existing responsiveness practices, it is ISO-NE's belief that as of the date of this filing it is in compliance with the Commission's requirements for responsiveness."); *PJM Compliance Filing*, *supra* note 50, at 51 ("PJM's stakeholder process satisfies the four responsiveness criteria."); *NYISO Compliance Filing*, *supra* note 50, at 34 ("[T]he NYISO believes that its existing shared governance arrangements more than satisfy Order No. 719's requirements and is proposing no modifications to them in this compliance filing.")

Perhaps in response to significant public interest, FERC bifurcated its review of the portion of RTOs'/ISOs' compliance filings addressing governance[53] and scheduled a joint technical conference on February 4, 2010.[54] The technical conference was intended "to provide an additional forum for interested parties to discuss issues related to . . . RTO/ISO responsiveness issues concerning all RTOs and ISOs."[55] Among the topics considered were comments from the National Association of State Utility Consumer Advocates, which argued in favor of reorganizing the RTO/ISO stakeholder process and governance structure because of the current system's barriers to participation by end-use customers.[56]

Several months following the technical conference, FERC issued orders accepting all six RTOs'/ISOs' compliance filings on the same day.[57] Although in each order, FERC acknowledged that "many of the additional ideas presented and proposals made in this proceeding, and in response to the February 4, 2010, technical conference . . . deserve consideration in stakeholder processes as RTOs and ISOs continue to evolve and improve,"[58] the Commission did not require any of the RTOs/ISOs to make any changes to their processes. Instead, it simply admonished the RTOs/ISOs that they should continue to consider ways to improve their governance and stakeholder policies and that if unaddressed concerns persist, the Commission "may revisit these issues," taking "appropriate action, as required."[59]

A review of recent literature reveals that compliance with Order No. 719 did not eliminate all criticisms of the representativeness of RTO governance and that concerns about RTO/ISO governance do, in fact, persist.

IV. LITERATURE REVIEW OF PROPOSED CHANGES TO RTO PARTICIPATION MODELS

Since Dworkin and Goldwasser first called attention to concerns about RTO governance, several commentators have provided their own critiques and proposals for modernizing RTO operations and enhancing RTOs' accountability to stakeholders.

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53. *See*, *e.g.*, Order on Compliance Filing, *PJM Interconnection, L.L.C.*, 129 FERC ¶ 61,250, FERC Docket No. ER09-1063, ¶ 19 (Dec. 18, 2009) ("This order makes no findings as to PJM's compliance with the fourth area of reforms identified in Order No. 719: the responsiveness of RTOs and ISOs to their customers and other stakeholders. . . . [T]he Commission will issue a separate order addressing PJM's compliance with this aspect of Order 719.").

54. Order Accepting Compliance Filing, *PJM Interconnection LLC*, 133 FERC ¶ 61,071 at PP 22-23 (2010).

55. *Id.*

56. *Id.* at P 23 n.19.

57. *Id.*; Order Accepting Compliance Filing, *Midwest Independent Transmission System Operator, Inc.*, 133 FERC ¶ 61,068 (2010); Order Accepting Compliance Filing, *Southwest Power Pool Inc.*, 133 FERC ¶ 61,069 (2010); Order Accepting Compliance Filing, *ISO New England Inc. and New England Power Pool*, 133 FERC ¶ 61,070 (2010); Order Accepting Compliance Filing, *New York Independent System Operator Inc.*, 133 FERC ¶ 61,072 (2010).

58. Order Accepting Compliance Filing, *California Independent System Operator Corporation*, 133 FERC ¶ 61,067 at P 40 (2010).

59. *Id.* at P 43.

Stephanie Lenhart, from the Boise State University Energy Policy Institute/Center for Advanced Energy Studies, and Dalten Fox, from Boise State University's School of Public Service, performed a review of the seven existing RTOs and ISOs, focusing on governance structures and participatory and power dimensions.[60] Lenhart and Fox performed a qualitative comparative case study, focusing on the breadth of actors involved, communication and collective decision-making approaches, and the participants' shared authority.[61] Within current RTO structures, they identified a number of commonalities, including decision-making boards, stakeholder membership, and some interaction with non-governmental organizations and state agencies.[62] They also described and compared the governance structures of various RTOs.[63] After their review, Lenhart and Fox concluded that existing sector designations (e.g., transmission, generation, etc.) used to apportion authority within RTOs may be outdated and ripe for update by replacing the existing sectors with smaller and more numerous sectors to create more homogenous groupings that can more efficiently represent stakeholder interests.[64] They also suggested that governance structures promoting open access, information sharing, and stakeholder dialogue could be valuable going forward.[65] Further, Lenhart and Fox proposed focusing more attention on interactions between stakeholders and RTO staff, and improving institutional relationships with state authorities.[66]

Two additional governance principles were the focus of a study by Christina Simeone, a Senior Fellow at the University of Pennsylvania's Kleinman Center for Energy Policy and a PhD candidate in a joint program between the Colorado School of Mines and the National Renewable Energy Laboratory. Simeone discusses the changes in circumstances, including in electricity markets and state policy, that have occurred since FERC last updated its standards for RTO/ISO governance with Order No. 719 of 2008 and identified examples of governance problems within PJM.[67] To address those problems, she proposed creating two new governance principles for RTO: a fair representation principle and a neutrality principle.[68] Simeone argues that these principles are based on language previously espoused by FERC and would lead to a better reflection of stakeholder diversity and more neutral market rules.[69] According to Simeone, the fair representation principle would ensure that RTO/ISO sectors reflect the full diversity of stakeholders and that states have a "strong and clearly defined role" in the governance

60. Stephanie Lenhart & Dalten Fox, *Participatory Democracy in Dynamic Contexts: A Review of Regional Transmission Organization Governance in the United States*, 83 ENERGY RSCH. SOC. SCI. 1 (2022).

61. *Id.* at 5.

62. *Id.* at 6-7.

63. *Id.* at 7-10.

64. Lenhart, *supra* note 60, at 11.

65. *Id.*

66. *Id.*

67. Christina E. Simeone, *Reforming FERC's RTO/ISO Stakeholder Governance Principles*, 34 ELECTRICITY J. 2-8 (2021).

68. *Id.* at 10-11.

69. *Id.*

process.[70] The neutrality principle also encompasses the idea of increased public transparency, allowing for broader distribution of substantive information about governance deliberations and voting outcomes.[71]

A number of commentators have critiqued RTO governance related to RTOs' ability to address climate change by guiding the transition to a clean energy economy. Shelley Welton, Assistant Professor at the South Carolina School of Law, describes RTOs as being "private industry clubs"[72] that are preventing a timely transition away from fossil fuels in the energy industry.[73] Welton argues that RTOs' failures to address public policy challenges can be partially attributed to the fact that they arose out of a deregulatory environment, which led to what she describes as "functionally privatized governance systems."[74] Because RTO responsibilities have expanded over time, these largely privatized RTOs are effectively being required to manage matters of public policy that they were never intended to address.[75] Emphasizing the importance of reducing carbon emissions to combat climate change, Welton proposes several potential changes to RTO structures designed to reduce the control that legacy fossil fuel interests have over RTO decision-making. First, she suggests paring back RTO authority and returning them to a more basic function, primarily by eliminating mandatory capacity markets as an RTO function.[76] Welton further proposes increasing regulatory oversight over RTOs by both FERC and state regulatory agencies[77] and argues for more energetic policing of corporate power within RTOs and the electric system generally by, among other things, more heavily scrutinizing mergers.[78] Alternatively, she raises the possibility of a complete rethinking of grid management with what she calls a "public option," which would mean replacing RTOs with a government agency dedicated to managing the grid and performing the functions that RTOs currently manage.[79]

Daniel Walters, Associate Professor of Law at Texas A&M University School of Law, and Andrew N. Kleit, Professor of Energy and Environmental Economics at Penn State University, similarly identified shortcomings in RTOs' ability to address climate change that they contend arose out of changed management priorities over time. Walters and Kleit posit that RTOs were created as corporatist organizations in an era where reliability and affordability were the two primary foci of grid management.[80] With the emergence of the "energy trilemma" era, which adds the third factor of decarbonization to reliability and affordability as management goals, Walters and Kleit argue that the corporatist model for RTOs

70. *Id.* at 10.

71. Simeone, *supra* note 67, at 11.

72. Welton, *supra* note 26, at 209.

73. *Id.* at 209-10.

74. *Id.* at 214.

75. *Id.*

76. Welton, *supra* note 26, at 265-67.

77. *Id.*at 267-70.

78. *Id.* at 27-72.

79. *Id.* at 272-74.

80. Daniel Walters & Andrew N. Kleit, *Grid Governance in the Energy Trilemma Era: Remedying the Democracy Deficit*, 74 ALA. L. REV. 1033, 1037 (2022).

is no longer appropriate.[81] Although they recognize the benefits of corporatist governance under certain conditions,[82] they argue that corporatism is not adequate for RTO governance in the energy trilemma era.[83] They point to imbalances in power due to voting and membership rules[84] and a lack of public transparency[85] as two primary weaknesses in RTOs under the corporatist model, and they provide case studies to reflect those deficiencies.[86] Walters and Kleit propose a more pluralistic form of RTO governance that would be defined by broadened access to RTO proceedings, including notice-and-comment requirements and information-gathering mechanisms;[87] more transparency of RTO proceedings, including a public-facing dockets system and a more focused proposal system;[88] and enhanced oversight by both FERC and the judiciary.[89]

As part of a longer piece discussing several aspects of grid reliability, Alexandra Klass, Professor at the University of Minnesota Law School, and her co-authors devote a section to discussing the challenges created by RTO governance as well as suggesting possible solutions.[90] Klass, et al. note that RTOs can help to advance the goals of both FERC and the states by working through complex technical and social problems to reach compromise, but they suggest RTOs and ISOs currently lack the balance necessary to effectively manage coordinating the priorities of clean energy and grid reliability, especially given that RTOs have no clear statutory mandate to advance renewable energy.[91] The authors identify several examples to illustrate their belief that RTO governance often favors incumbent technologies, which often operate on fossil fuels, at the expense of new technologies, often renewables.[92] They then suggest several structural reforms that could weaken the hold that incumbent technologies have over RTO decision-making, including increasing transparency, re-evaluating whether RTOs are complying with the responsiveness expectations established in Order No. 719, enhancing state authority in RTO decision-making (potentially through its Section 209 authority to delegate certain matters to committees of states), and implementing legislative fixes.[93]

In a more positive vein, other researchers have analyzed how RTOs have changed institutionally in response to increasing pressure to integrate renewables into the electric grid. Benjamin A. Stafford, with the University of Minnesota's Carlson School of Management, and Elizabeth J. Wilson, from the University of Minnesota's Humphrey School of Public Affairs, explore the decision-making

81. *Id.*
82. *Id.* at 1053-55.
83. *Id.* at 1063.
84. Walters, *supra* note 80, at 1063-67.
85. *Id.* at 1067-68.
86. *Id.* at 1068-75.
87. *Id.* at 1077-79.
88. Walters, *supra* note 80, at 1079-82.
89. *Id.* at 1082-83.
90. Alexandra Klass et al., *Grid Reliability Through Clean Energy*, 74 STAN. L. REV. 969 (2022).
91. *Id.* at 1058-60.
92. *Id.* at 1060-62.
93. *Id.* at 1068-70.

processes that have led to wider penetration of wind energy into the Midcontinent Independent System Operator (MISO) grid.[94] They applied a multi-method approach to the strategic action field theory to analyze how changes in MISO's policy came about to allow for increased wind generation.[95] Stafford and Watson determined that MISO had to "re-negotiate complex socio-technical systems" and fundamentally change the system's operation in order to incorporate more wind energy into the grid.[96] They posit that an RTO's ability to engage and coordinate policymakers and stakeholders is an important element of adapting to changing policy and technology.[97] They further suggest that RTOs may fit well into the concept of "boundary organizations" that coordinate complex science and policy.[98]

Stephanie Lenhart, Assistant Research Professor in Boise State University's Department of Public Policy and Administration, et al., further developed the concept of RTOs/ISOs as boundary organizations in their study of a different challenge that resulted from integrating renewable energy sources into the electricity grid. The authors examined the California Independent System Operator's (CAISO's) initiative to provide energy imbalance market (EIM) services to authorities throughout the Western Interconnection, even those outside of CAISO itself, to assist with the integration of variable generation resources like wind and solar.[99] Lenhert, et al. analyzed the group of stakeholders convened to implement the EIM services as a boundary organization where there is overlap between technical and policy considerations and tensions between stakeholders are negotiated.[100] They determined that discursive processes to help create a collective identity among participants was instrumental in helping the group achieve a desirable outcome.[101]

Hannah J. Wiseman, Professor of Law at Penn State Law School, analyzed RTOs in the context of cooperative federalism and observed that their current governance structure offers both advantages and disadvantages for policymaking.[102] Wiseman found that, under the right circumstances, a regional actor situated between federal and state governments allows for policy experimentation that can lead to more innovation than would be expected from federal or state governments alone.[103] She notes that, in some cases, RTOs have been able to successfully ex-

94. Benjamin A. Stafford & Elizabeth J. Wilson, *Winds of change in energy systems: Policy implementation, technology deployment, and regional transmission organizations*, 21 ENERGY RSCH. SOC. SCI. 222 (2016).

95. *Id.* at 226-33.

96. *Id.* at 222, 233.

97. *Id.* at 234.

98. Stafford, *supra* note 94, at 234.

99. Stephanie Lenhart et al., *Electricity governance and the Western energy imbalance market in the United States: The necessity of interorganizational collaboration*, 19 ENERGY RSCH. SOC. SCI. 94 (2016).

100. *Id.* at 95.

101. *Id.* at 105.

102. Hannah J. Wiseman, *Regional Cooperative Federalism and the US Electric Grid*, 90 GEO. WASH. L. REV. 147 (2022).

103. *Id.* at 153.

pand transmission infrastructure to support more renewable generation and maintain service during extreme weather events.[104] But she also recognized that challenges of coordination remain – including in the context of trying to expand renewable energy generation[105] and to construct interregional transmission lines.[106] Wiseman observed that RTOs specifically have often come up short with respect to accountability, in part because they are private corporations that can disregard certain important viewpoints and operate with limited agency oversight.[107] To overcome some of these shortcomings, Wiseman proposed that: (1) FERC issue mandates to incentivize innovation;[108] (2) RTOs extend governance services to non-members;[109] and (3) RTOs improve accountability by expanding public participation and developing better tools for resolving intra-RTO conflicts.[110]

V. DISCUSSION

The body of literature that has been generated since Dworkin and Goldwasser's 2007 study of RTO governance reveals that the concerns they raised about RTO operations are widely shared and that those concerns have not been fully mitigated by the implementation of FERC Order No. 719. Indeed, as focus on climate change has intensified in recent years, it appears that RTOs' and ISOs' perceived performance in combatting climate change may have exacerbated some concerns about RTO governance. That does not mean, however, that commenters are necessarily ready to give up on RTOs or ISOs altogether. The literature suggests that there are benefits to RTOs, and much of the commentary focuses on ways of improving RTOs' and ISOs' functions to better focus on protecting the public interest and achieving climate goals.

The successes of RTOs and ISOs identified in the literature reveal a form of governance that has distinct advantages. Most notably, by bringing together multiple stakeholders with varying interests and expertise, RTOs and ISOs have the

104. *Id.* at 236.

105. *Id.* at 154.

106. Wiseman, *supra* note 102, at 184.

107. *Id.* at 155-56.

108. *Id.* at 215-16.

109. *Id.* at 216-17.

110. Wiseman, *supra* note 102, at 217-19; In separate student notes, Deandra Fike and Oleg Kozel both argue that current management of the energy grid is hindering progress toward addressing climate change. Fike writes that RTOs focus too much on protecting established energy interests and that reforms are needed to promote the public interest and advance the battle against climate change. Deandra Fike, Note, *Regional Electricity Markets and the Struggle to Integrate State Clean Energy Subsidies*, 46 COLUM. J. ENV'T L. 523 (2021). She favors expanding states' roles in RTO governance. *Id.* at 559. She further advises that RTOs that currently do not have mandatory capacity markets be cautious about forming them and advocates for FERC to be more cognizant of the benefits of clean energy technology when reviewing and approving RTO rule proposals. *Id.* at 559-62. Kozel argues that green energy policies are being "sabotaged" by RTOs. Oleg Kozel, Note, *Governing the Grid: Reforming Regional Transmission Organizations of the Heels of Order No. 841*, 49 ECOLOGY L.Q. 259, 261 (2022). Kozel contends that RTOs suffer from regulatory capture that results in legacy interests having the ability to prevent integration of alternative forms of energy. *Id.* Kozel proposes remedying that regulatory capture by increasing insulation of RTO boards from their members, distributing alternative resource stakeholders broadly among sectors, and deferring to states on a case-by-case basis. *Id.* at 288-92.

potential to address complex problems that have technical, policy, and legal dimensions.[111] By addressing problems on a regional scale, RTOs and ISOs have a unique ability to experiment and innovate, leading to emergent policy solutions.[112] These innovations are most likely to occur when RTOs effectively engage and coordinate policymakers and stakeholders[113] and develop processes that allow for the group to create a collective identity.[114] In fact, there have been success stories. MISO and Southwest Power Pool (SPP) have led the way in developing transmission infrastructure across state lines to support burgeoning renewable energy production,[115] and CAISO partnered with non-members to establish an energy imbalance market that helped address another challenge of renewable generation.[116] Indeed, Western states — which will host much of the burgeoning solar production and some new wind generation — may join either CAISO's energy imbalance market or SPP's new energy market to help integrate renewable energy generation, among other benefits.

But these successes do not tell the whole story of RTOs and ISOs, which continue to have considerable room for improvement. The literature cited in this article points to a number of deficiencies in the RTO governance process. These organizations are regularly criticized for their inability — or unwillingness — to more effectively integrate renewable energy resources into the electric grid.[117] They are also viewed as lacking transparency,[118] inadequately accounting for the public interest in their decision-making,[119] and having numerous other deficiencies that undermine their ability to optimally serve the public.

These critiques suggest that the time may have come for FERC to follow through on the warning it made when it approved RTOs' and ISOs' Order No. 719 compliance filings – to "revisit" stakeholder responsiveness concerns and take "appropriate action, as required."[120] It is clear that the electricity industry has changed significantly since FERC issued Order No. 719 in 2008– and even more so since RTOs and ISOs were originally contemplated prior to the turn of the century. And with the effects of climate change becoming ever clearer and the government investment in renewable energy sources growing significantly under the Inflation Reduction Act, it would seem that those changes are likely to accelerate in the coming years. The ability of RTOs and ISOs to adapt and respond in a way that facilitates – rather than hinders – the fight against climate change may depend on their willingness to adapt their governance models.

There are a number of changes that FERC may consider to address the shortcomings identified by critics. Several themes emerge from the literature presented

111. Stafford, *supra* note 94, at 222, 233.

112. Wiseman, *supra* note 102, at 153.

113. Stafford, *supra* note 94, at 234.

114. Lenhart et al., *supra* note 99, at 105.

115. Wiseman, *supra* note 102, at 177.

116. Lenhart et al., *supra* note 99, at 95.

117. *See generally* Welton, *supra* note 26; Walters, *supra* note 80, at 1037; Fike, *supra* note 110, at 561-62; Kozel, *supra* note 110, at 261.

118. Walters, *supra* note 80, at 1067; Lenhart, *supra* note 60, at 11; Simeone, *supra* note 67, at 8.

119. Dworkin, *supra* note 2, at 546; Fike, *supra* note 110.

120. 133 FERC ¶ 61,067, at P 43.

here. There are calls for RTOs and ISOs to embrace transparency,[121] provide for more representative governance practices,[122] and be subject to more exacting oversight,[123] among other things. FERC can use these academic critiques as a menu of options for requirements it can impose to improve the governance of RTOs and ISOs. Given the urgency of the battle against a changing climate, it seems that FERC should prioritize those governance changes that would prevent calcification of the electricity market in a way that would impede the emergence of new entrants. FERC may also consider prioritizing imposing requirements that ensure that public interest groups and consumer advocates have both the right to become members or RTOs and ISOs and the practical ability to meaningfully contribute. These types of interventions are generally consistent with requirements that FERC has imposed in the past under its authority from section 205 of the Federal Power Act to ensure that rates and charges for transmission or sale of electric energy are "just and reasonable."[124] If FERC is reluctant to assert its existing authority over just and reasonable rates to make changes geared toward addressing the climate crisis, Congress should consider statutorily mandating FERC to consider climate impacts in its role overseeing electric markets.

To inform future government action – whether by FERC or Congress – future academic literature should focus on feasible ways to operationalize some of the transparency and accountability principles discussed by many authors within the complex political and economic environment in which FERC operates. It may also focus on discrete and specific steps that FERC could take under its existing authority to mitigate climate change.[125] Finally, if some of these issues are not resolved soon, it may be worth exploring the types of changes Congress can make at the statutory level to force change on a time scale consistent with addressing meaningfully addressing climate change.

VI. CONCLUSION

This review suggests that RTOs and ISOs are likely to continue to play an important role in our energy future. By building on the positive aspects of the current model and incorporating some of the, admittedly significant, changes suggested in the literature, the organizations will be better positioned to take on the heavy challenges of our time – most notably the battle against climate change – and achieve their full potential. The literature reviewed in this piece suggests both broad thematic approaches that FERC and/or RTOs and ISOs may consider as well as more specific, targeted proposals for change. Considering those suggestions in the context of both the political and economic space in which FERC and RTOs/ISOs operate as well as the moral imperative to address climate change on a realistic timescale is going to be essential to developing practical and workable solutions. In doing so, the vision for better governance set forth by Dworkin and

121. Lenhart, *supra* note 60, at 11; Simeone, *supra* note 67, at 11; Walters, *supra* note 80, at 1077-82; Wiseman, *supra* note 102, at 217-19.

122. Lenhart, *supra* note 60, at 11; Simeone, *supra* note 67, at 10-11; Kozel, *supra* note 288-92.

123. Walters, *supra* note 80, at 1082-83; Welton, *supra* note 26, at 267-70; Fike, *supra* note 110, at 559.

124. Federal Power Act § 205, 16 U.S.C. § 824d.

125. Klass, *supra* note 90, at 1068-70.

Goldwasser – and hinted at in some of the Order No. 719 proceedings – may finally become a reality.