Decision No. C19-0756

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 19M-0495E

IN THE MATTER OF THE COMMISSION'S IMPLEMENTATION OF §§ 40-2.3-101 AND 102, C.R.S., THE COLORADO TRANSMISSION COORDINATION ACT.

COMMISSION DECISION OPENING A PROCEEDING, DESIGNATING COMMISSIONER KONCILJA AS HEARING COMMISSIONER, AND SOLICITING INPUT FROM INTERESTED PARTICIPANTS

Mailed Date: September 17, 2019
Adopted Date: September 11, 2019

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I. BY THE COMMISSION

A. Statement

1. Pursuant to the Colorado Transmission Coordination Act of 2019, §§ 40-2.3-101 and 102, C.R.S. (CTCA),[1] the Public Utilities Commission (Commission or PUC) opens this proceeding to collect comments and other information helpful in analyzing the potential advantages and disadvantages in joining one of the types of energy markets identified.[2] The Commission designates Commissioner Frances Koncilja as Hearing Commissioner,[3] pursuant to § 40-6-101(2)(a), C.R.S., to work with the Staff of the Colorado Public Utilities Commission (Staff), stakeholders, and other interested participants to collect and organize information, conduct public comment hearings, and make recommendations to the full Commission as to possible next steps in conducting the analysis required by § 40-2.3-102(2), C.R.S., and to aid the Commission in its determination of the public interest as required by § 40-2.3-102(3), C.R.S.

2. CTCA directs the Commission to investigate the costs and benefits to electric utilities, other generators, and Colorado electric utility customers resulting from electric utility participation in energy imbalance markets (EIMs), regional transmission organizations (RTOs), power pools, or joint tariffs. Electric utilities are defined in § 40-1-103(2)(a), C.R.S., to include

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[1] CTCA, attached as Exhibit A

[2] Section 40-2.3-102(1)-(4), C.R.S., refer to energy imbalance markets, regional transmission organizations, power pools and joint tariffs.

[3] At the Commissioners' Weekly Meeting on June 26, 2019, the Commissioners agreed to divide responsibilities for the first stages of implementation of the new obligations in the PUC Sunset Bill, Senate Bill 19-236 with Chairman Ackermann having responsibility for Distribution Resource Planning, Commissioner Gavan for Performance Based Ratemaking, and Commissioner Koncilja for CTCA.

"[e]very cooperative electric association, or nonprofit electric corporation or association, and every other supplier of electric energy, whether supplying electric energy for the use of the public or for the use of its own members." The CTCA directs the Commission to consider the impact of these four different market constructs on retail and wholesale electricity rates for both participating and non-participating entities, transmission rates, the commitment and dispatch of generation, operating costs, reserve requirements, renewable integration, and regional infrastructure investment. The interaction of these market options with system reliability must necessarily be included in this investigation.

3. CTCA sets deadlines for four specific Commission actions:

- **January 1, 2020** – "The Commission shall open a proceeding to investigate the potential costs and benefits to electric utilities, other generators, and Colorado electricity customers that would arise from electric utilities" participating in a regional electricity market,[4]
- **July 1, 2021** – "The Commission shall hold a hearing for public comment to consider the information received during the Commission's investigation…"[5]
- **December 1, 2021** – "The Commission shall issue a decision determining whether electric utilities participating in [an electricity market] is in the public interest."[6]
- **July 1, 2022** – If the Commission determines that electric utility participation in a one of the specified types of markets is in the public interest the Commission "shall direct electric utilities to take appropriate actions and conduct such proceedings as the commission deems appropriate to pursue participation in an energy imbalance market, regional transmission organization, power pool, or joint tariff."[7]

4. We open this miscellaneous proceeding to conduct the investigation contemplated in the first Commission obligation above. We choose to proceed through a miscellaneous

[4] § 40-2.3-102(1), C.R.S.
[5] § 40-2.3-102(2), C.R.S.
[6] § 40-2.3-102(3), C.R.S.
[7] § 40-2.3-102(4), C.R.S.

proceeding in order to allow the Hearing Commissioner to issue orders and make recommendations to the full Commission as to next steps. This proceeding will serve as a repository for the filing of comments, studies and analyses, and will serve as a platform from which to conduct workshops, hold public hearings, pose questions, discuss processes, and issue orders.

5. In order to build on information from other Commission proceedings and regional market studies and experience, Staff is directed to file the most current and relevant documents into this proceeding as described below.

6. Through the course of this miscellaneous proceeding, we will invoke, pursuant to Rule 4 Code *of Colorado Regulations* 723-1-1111 of the Commission's Rules of Practice and Procedure, the "Permit, but Disclose" process. Interested persons may schedule *ex parte* presentations to a Commissioner that shall include Commission Staff provided that the contacts relate solely to the CTCA investigation, and do not concern any matter pending before the Commission in another proceeding. Within two business days following a permitted presentation, the person requesting the meeting is required to file in this Proceeding a letter disclosing the contact with a copy of materials provided to the Commissioner during the meeting.

7. We will attempt to accommodate all reasonable requests for *ex parte* meetings, subject to the schedule and availability of each Commissioner. To schedule an *ex parte* presentation with a Commissioner, an interested person should contact the Executive Assistants to the Commissioners and should clarify that the presentation is associated with this Proceeding.

8. We encourage stakeholders to file a statement of interest in participating in this proceeding. Participants should submit initial comments no later than November 15, 2019. Comments responsive to those initial filings may be made no later than December 15, 2019.

II. BACKGROUND

A. Commission History Investigating and Implementing Markets.

9. Evaluation of markets and participation by the investor owned utilities in Colorado in various types of markets is not new to the Commission. The Commission has been involved in implementing and analyzing the benefits and detriments of market participation by Colorado investor owned electric utilities since at least 2011.

10. The Commission examined the "implications of a potential regional Energy Imbalance Market (EIM) that may include Colorado electric utilities" in Decision No. C11-1347 in Proceeding No. 11M-998E issued December 15, 2011 at p. 1. More recently, the Commission has been monitoring the benefits to Colorado utilities of short-term imbalance energy trading through the participation of Public Service Company of Colorado (Public Service) and Black Hills in the Joint Dispatch Agreement (Proceeding No. 16A-0276E).[8]

11. In addition, Public Service has decades of experience in bilateral market transactions pursuant to their Trading Rules, which were originally approved by the Commission in 2000 and most recently updated in Proceeding No. 13A-0689E (Settlement between Public Service, Staff, and the Office of Consumer Counsel).

12. In October 2016, Decision No. C16-1002 opened Investigatory Proceeding No. 16I-0816E to "receive and develop information and analysis related to the activities of the

[8] Public Service filed a semiannual report in Proceeding No. 16A-0276E. This report details "Generation Cost Savings," "Energy Sales Margins," and "Net change in carbon emissions" by participating entity.

Mountain West Transmission Group (MWTG)." MWTG was comprised of nine transmission owners (Basin Electric Power Cooperative, Black Hills Colorado Electric, LLC, Black Hills Power, Inc., Cheyenne Light Fuel & Power Company, Colorado Springs Utilities, Platte River Power Authority, Public Service Company of Colorado, Tri-State Generation and Transmission Association, Inc., Western Area Power Administration, Loveland Area Projects and Western Area Power Administration, Colorado River Storage Projects).

13. Between March 2017 and March 2018, the Commission held five Commission Information Meetings (CIMs) to investigate issues related to MWTG joining the Southwest Power Pool (SPP). In addition to active participation by more than a dozen entities and reports from MWTG utilities regarding the status of their negotiations and proposed market operation, the Commission heard stakeholders present and discuss information related to the benefits of markets for renewables, ratepayer risks and concerns, reliability coordination, transmission rates, planning and cost allocation, RTO governance, Federal Energy Regulatory Commission (FERC) process and jurisdiction, and cost benefit categories. The CIM presentations, as well as comments and recommendations from stakeholders and a variety of white papers and market-related reports are all available in the MWTG Investigatory Proceeding (16I-0816E). Staff will file a subset of those documents that are the most current and relevant to the instant investigation in this new proceeding for ease of reference.

14. Public Service announced in April 2018 that it was withdrawing from the negotiations to join SPP, citing limited benefits and uncertain costs. This effectively ended the

MWTG effort and the Commission's investigation.[9] However, the MWTG Investigatory Proceeding is an invaluable resource to this current market investigation effort.

III. CURRENT STATUS OF RELIABILITY CO-ORDINATION

15. In January 2018, amidst the MWTG effort to join the SPP, the California Independent System Operator (CAISO) announced that it would leave Peak Reliability, become its own reliability coordinator (RC) – to be known as "RC West" – and also offer that service to other utilities. Although the MWTG effort ended soon thereafter, SPP separately offered to provide RC services as a non-membership option for any interested western utilities. To date, 39 balancing authorities and transmission owners have finalized service agreements with RC West[10] and 14 utilities (including those within the Public Service balancing authority) have committed to SPP's RC service. The full transition from Peak Reliability will be completed by the end of 2019.[11]

IV. CURRENT AND PROPOSED MARKET OFFERINGS IN THE WESTERN INTERCONNECTION

16. Several of the transmission operators within Colorado are currently considering joining an imbalance market. Both CAISO and SPP are offering imbalance services in Colorado.[12]

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[9] The MWTG proceeding was closed on October 17, 2018.

[10] http://www.caiso.com/informed/Pages/RCWest/Default.aspx

[11] https://www.wecc.org/EventAnalysisSituationalAwareness/Pages/Certification.aspx

[12] On August 30, 2019, Xcel Energy issued a press release indicating that Xcel Energy, Black Hills Energy, Colorado Springs Utilities, and Platte River Power Authority (*i.e.,* current JDA members) have "launched an in-depth study to determine the best course of action" related to joining an energy imbalance market. They have hired a consulting firm to evaluate the benefits and costs of participation in either SPP's WEIS or CAISO's WEIM. The study results are expected by the end of September and a decision is expected by the end of the year.

17. The CAISO-administered Western EIM was established in 2014 with Pacificorp as the first participant outside California. [13] Additional utilities have joined in each year since then and by 2022, greater than 70 percent of the Western Interconnection's load will be participating in the Western EIM.[14] CAISO has also proposed to develop an Extended Day-Ahead Market (EDAM) for EIM participants and is currently conducting a feasibility analysis and discussing issues with stakeholders.[15]

18. Citing its expanded role as a Western RC, on April 4, 2019, SPP announced its interest in offering a Western Energy Imbalance Service (WEIS) to utilities in the Western Interconnection. On June 17, 2019, it released its specific WEIS proposal.[16] SPP requested action on or before September 3rd regarding its WEIS offering. If it receives sufficient commitments by then, SPP proposes to have the EIS up and running by February 2021. On September 9, 2019, Basin Electric Power Cooperative, Tri-State Generation and Transmission Association, Inc., and the Western Area Power Administration announced their decision to join SPP's Western Energy Imbalance Service.[17]

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[13] WEIM is a voluntary 15-minute and 5-minute real-time energy market operated by the CAISO. The WEIM utilizes transmission capacity made available to the EIM and security-constrained economic dispatch (SCED) to optimize real-time energy dispatch and resolve energy and load imbalances across the footprint.

[14] Current map available here: https://www.westerneim.com/Pages/About/default.aspx

[15] See http://www.caiso.com/informed/Pages/StakeholderProcesses/Day-AheadMarketEnhancements.aspx. If pursued, the EDAM would likely be a voluntary additional market option for entities participating in the WEIM.

[16] See https://www.spp.org/weis. This market's construct is still being developed but would likely be very similar to the Western EIM and would utilize SCED to optimize real-time energy dispatch and resolve imbalances. Most likely participants appear to be in Colorado, and parts of Wyoming, New Mexico, and Arizona (and are mostly comprised of former participants in the MWTG effort).

[17] https://www.tristate.coop/three-regional-utilities-announce-decision-join-southwest-power-pool-market

A. Discussion

19. The Commission needs to understand how utility market participation may change whether Colorado is an importer or exporter of electricity at different times of the day and/or year; what the fuel source is for the electricity being imported and exported; how these imports and exports may change over time; information on the geographic footprint of Colorado's trading partners; the impact this market activity has on the ultimate electricity bill paid by Colorado consumers; and who determines how the potential cost of new transmission is paid for.

20. As noted above, the purpose of this investigation is to help inform the Commission of the costs and benefits, impacts to ratepayers, regulatory and policy implications, and impact on renewable integration of different levels of regional market participation. As part of this investigation, the Commission seeks to determine the conditions under which these costs, benefits, and impacts materialize. This investigation should assist an ultimate Commission determination of what is in the public interest and how to proceed with the next steps.

1. Colorado Energy Policy

21. The CTCA is part of a broader set of recent statutory changes, many of which articulate state environmental policy goals pertinent to the electric utility industry. As explained in more detail below, the 2019 legislative session made substantive changes to the energy policies of the State of Colorado.

22. In addition to statutory changes, recently elected Governor Jared Polis has issued executive orders and made public statements regarding Colorado's renewable energy goals. In

these statement, the Polis administration "has set a goal of 100% renewable electricity by 2040."[18]

23. In recent years, Colorado has been working under the Renewable Energy Standard laid out in § 40-2-124, C.R.S. This statute requires 30 percent of retail electricity sales to be supplied by renewable energy by 2020 for Investor Owned Utilities.[19] The Renewable Energy Standard for most electric cooperatives is 20 percent and for other cooperatives and large municipal utilities the standard is 10 percent.

24. Two bills from the 2019 legislative session extend these utility environmental targets. The first bill, House Bill (HB) 19-1261, established statewide goals to reduce 2025 greenhouse gas emissions from the 2005 baseline by at least 26 percent, 2030 emissions by 50 percent, and 2050 emissions by 90 percent. The goals in HB19-1261 apply economy wide, not just to the electric sector. The second bill, Senate Bill 19-236, directed "electric [utilities] with greater than five hundred thousand customers in the state or any other electric utility that opts in…" to file a Clean Energy Plan to reduce carbon emissions to 80 percent below 2005 levels by 2030 and reduce atmospheric carbon emissions by 100 percent by 2050.[20]

25. The West is not homogeneous in regard to state environmental and other policy goals or in regard to existing fossil and renewable generation assets. Electricity service providers in other states that might participate in electric markets and with whom Colorado utilities may

[18] See:
https://www.colorado.gov/governor/environment-and-renewables and
https://www.colorado.gov/governor/2019-executive-orders

[19] *See* § 40-2-124(1)(c), C.R.S.

[20] Currently, only Public Service is obligated to file a Clean Energy Plan based on the statutory definition of a "qualifying retail utility."

trade, could have less or more demanding decarbonization and/or renewable energy goals. These factors need to be considered in approaching the evaluation of the potential costs and benefits of electricity market regionalization in Colorado and the impact of regionalization in supporting Colorado's policy goals.

2. Colorado's Transmission Infrastructure

26. Colorado is electrically located on the edge of the Western Interconnect with limited DC ties to the East and limited AC ties to the West. Colorado is surrounded by states of relatively low load density with large geologic barriers between them. In recognition of this lack of interconnection, both the 2017/2018 SPP proposal to provide RTO services to the MWTG and the current energy imbalance service offerings treat the MWTG footprint (or portions of the MWTG footprint) as a geographic market distinct from either the rest of SPP or other CAISO EIM participants in the West.

27. One benefit that may be considered in this investigation of regional market participation is the potential for increased access to renewable generation from other geographic regions and the potential to export local excess renewable generation to other geographic regions without paying fees to multiple transmission providers. Regional diversity of renewable generation may help compensate for the inherently intermittent nature of individual renewable resources. This investigation should evaluate the degree to which this geographic diversity could help support the state's statutory requirements and energy policy goals.

28. The Commission is concerned that Colorado has limited transmission interconnection with the rest of the Western Electricity Coordinating Council region (WECC) and with SPP states to the East and that this lack of interconnection may limit the benefits of

regional markets absent significant infrastructure investment. More than one stakeholder has observed that "if you love wind generation, you must love transmission." The Commission will need to assess the costs, benefits, feasibility, cost recovery, and other implications of major transmission investment as part of this market investigation.

3. Current and Future Role of Storage

29. In Public Service's most recent electric resource plan Proceeding No. 16A-0396E, the Commission approved the acquisition of 275 megawatts of battery storage (configured as "solar plus storage" facilities) on September 10, 2018 in Decision No. C18-0761. These battery projects provide four-hour storage capability. Adding these batteries will provide an opportunity to determine how to utilize storage resources most effectively for integrating higher penetrations of variable renewable generation. It is not clear what role storage will play in renewable integration in the medium to long-term and to what extent batteries could reduce the overall need for regional transmission. This will depend in part on how quickly storage technology advances, particularly in the development of long-term (seasonal) storage, and how much costs decline.

4. Joint Dispatch Agreement (JDA)

30. In 2016, Public Service, Black Hills Colorado Electric, LLC, and Platte River Power Authority entered into a Joint Dispatch Agreement (JDA) to dispatch their generating units on a sub-hourly basis to serve their combined load with the most economic resources. Similar to participants in other energy imbalance markets, participants in the JDA realize short-term production cost savings and earn margins from additional sales. The combined annual benefit for JDA participants has ranged from approximately $2 million to $3.7 million in the first

years of operation.[21] The JDA is currently in the process of expanding to include the City of Colorado Springs Utility.

31. In a letter agreement between Public Service and former Commission Chairman Joshua Epel, dated August 21, 2015,[22] Public Service agreed to a number of provisions regarding the reporting and administration of the JDA. In this agreement, Public Service committed that "[i]n the event [Public Service] intends to file with the FERC a proposal to establish an energy imbalance market, or another related or similar construct, [Public Service] agrees to notify the [Commission] at least ninety (90) days in advance of such a filing. [Public Service] also agrees to provide the [Commission] with a confidential briefing of such proposal at least thirty (30) days in advance of filing with the FERC." This advance notice will allow the Commission to consider the procedural complexities such a filing would introduce.

5. Mountain West Transmission Group Conclusions

32. During the MWTG negotiation, several consulting firms were used to model the costs and benefits of market participation. MWTG consultants performed production cost modeling of both the joint tariff and full RTO constructs.[23] Based on the preliminary modeling results, the MWTG concluded that a joint transmission tariff alone would not produce enough savings to justify the effort, but that RTO participation was worth pursuing. At the time, energy imbalance market and day ahead market constructs were not evaluated. The Commission

[21] See "Semiannual JDA Reports" filed in Proceeding No. 16A-0276E.

[22] See Attachment SLP-2 to the Answer Testimony of Staff witness Sharon Podein in Proceeding No. 16A-0276E.

[23] The Joint tariff was modeled for 2016 only. Full RTO was modeled for 2016 and 2024 and examined current trends, high natural gas prices, and "market stress" scenarios. Both sets of results were compared to a status quo bilateral market analysis. The report points out that the production cost modeling did not include simulation of intra-day and real-time operations and thus was missing potential benefits achieved through such coordination.

proposes to build on the preliminary findings of the MWTG regarding joint tariffs and full RTO in conducting this investigation into the benefits of regional market participation.

33. In a report to SPP stakeholders dated March 19, 2018, SPP indicated that the cost of coal generation in Colorado was less expensive than the cost of coal generation in SPP and forecast increased Colorado coal generation if the MWTG were to join SPP.[24] This observation raises questions regarding the impact of market participation on generation mix, particularly as Colorado accesses markets with substantially different generation fleets and state environmental goals.

6. Department of Energy Market Investigation (DOE Study) and Other Market Studies of Interest

34. Four Western states, including Colorado, recently received funding from the U. S. Department of Energy (DOE) to perform an investigation into the benefits of greater integration in Western electricity markets. The four participating states are Utah, Montana, Idaho, and Colorado with the Utah Energy Office functioning as the Principal Investigator. This study includes a consultant (Energy Strategies) performing utility-grade production cost modeling of several potential market footprints.

35. The draft project schedule calls for modeling results to be available the third quarter of 2020 and additional deliverables to be completed in early 2021. This modeling effort is currently in the stage of scoping the market constructs, geographic footprints, and scenarios to be evaluated. Staff will have more insight into the extent of overlap between the CTCA and this

[24] SPP Staff report *10-year Costs and Benefits to SPP Members of Integrating Mountain West Transmission Group: Quantitative Analysis of Costs and Benefits*, March 19, 2018, pp. 16-17.

modeling effort in the next few months. Staff is directed to file into this proceeding updates from the DOE Study as they become available.

36. As a preliminary step in the Utah-led DOE-funded investigation, Energy Strategies compiled a list of other recent market studies, many of which may offer insights into the issues, costs, and benefits that should be considered in the Commission's evaluation. In addition to the MWTG studies, Staff is directed to collect pertinent information from those analyses and to file them into this proceeding.[25]

7. Reliability Concerns that Must Be Addressed in this Proceeding

37. Although not specifically identified in the CTCA, the Commission considers reliability a key consideration in any major shift in utility operations and governance such as joining an organized market.[26] The WECC region is currently transitioning from essentially two Reliability Coordinators (Peak Reliability and the Alberta Electric System Operator) to a total of five RCs (California Independent System Operator's RC West, Southwest Power Pool, BC Hydro, Gridforce Energy Management, LLC, and the Alberta Electric System Operation). Reliability considerations should play a significant role in any evaluation of joining or forming a new market construct. Staff is closely following the activities of the Western Interconnection Regional Advisory Body (WIRAB), which advises the North American Electricity Reliability

[25] These studies include Western EIM service evaluations including quarterly benefits estimates/reports, individual utility evaluations regarding Western EIM participation, and California's Senate Bill 350 study evaluating the impacts of a regional market.

[26] The Commission's Rules Regulating Electric Utilities, 4 *Code of Colorado Regulations* 723-3, require jurisdictional utilities to address reliability in Electric Resource Planning (3600 through 3619), Transmission Planning (Rules 3625 through 3627), the Renewable Energy Standard (Rules 3650 through 3668) and utility Applications (Rule 3703) and establish standards for "Operating Reliability and Safety" (Rules 3910 through 3929). In addition, the Commission's Rules require utilities to report major events resulting in a loss of service (Rules 3250 through 3253).

Council, FERC, and WECC on reliability issues.[27] Staff is directed to file into this proceeding relevant information developed in WIRAB proceedings.

8. Market Definitions and Solicitation of Comments

38. The Commission proposes to use the following more detailed definitions of the various market options in this proceeding and invites comments on these definitions:

a) *Power Pool* – Power Pool refers to a system of trading wholesale electricity that determines which of a set of pooled generators are most economic to serve load and set the price for that period. The Joint Dispatch Agreement (JDA) operating today is an example of a power pool and serves as the base case market construct. Parties to the Joint Dispatch Agreement pool generating resources to meet their combined load using the least cost dispatch.

b) *Joint Tariffs* – Joint Tariff refers to a single rate that applies for transmission service over the routes or lines of two or more transmission providers. This market construct was studied during the Mountain West Transmission Group (MWTG) investigation.

c) *Energy Imbalance Market* (EIM) – An EIM refers to a real-time bulk power trading market that allows participants to buy and sell unscheduled energy using available/unscheduled transmission. The California ISO (CAISO) is currently operating an EIM in the West (the WEIM) and has offered to stand up an EIM market to serve Colorado entities. The Southwest Power Pool (SPP) is currently working with interested parties to develop a Western Energy Imbalance Service (WEIS) market.

d) *Regional Transmission Organization (RTO)* – An RTO refers to an independent electric transmission operator that provides wholesale transmission services to more than one provider of electric services. An RTO incorporates centralized real-time dispatch and day ahead unit commitment with a joint transmission tariff, An RTO also consolidates reliability obligations, transmission planning and cost allocation, and transfers operational control of the transmission system to the system operator. An RTO introduces new sources of potential benefits but also the potential for substantial additional costs and a host of governance issues that other market constructs largely avoid.

e) *Extended Day Ahead Market (EDAM)* – The EDAM is an initiative conceptualized by the CAISO and Western EIM entities to extend the benefits of the EIM to the day-ahead market. EDAM would enable day-ahead unit commitment and dispatch across the participating footprint, but would not encompass transfer of operational control or any planning responsibilities to the CAISO. While this market construct could have significant benefits beyond the EIM, it does start to raise governance and market power/monitoring issues. While the EDAM was not specifically identified for

[27] WIRAB was created by Western Governors under Section 215(j) of the Federal Power Act. Section 215 of the FPA provides for the establishment of a federal regulatory system of mandatory and enforceable electric reliability standards for the nation's bulk power system. WIRAB's membership is composed of representatives from all states and international provinces that have load within the Western Interconnection. See https://westernenergyboard.org/wirab/who-what/

investigation by the Colorado Transmission Coordination Act, PUC Staff believe this market construct would be appropriate to include in this investigatory effort.

39. We also invite comments on any or all of the following questions and issues:

a) *Costs and Benefits* – Modeling studies to date have primarily addressed the savings attributable to generation commitment and dispatch optimization provided by integrated markets (as determined by production cost modeling). What other costs and benefits should be quantified for purposes of this investigation? What other costs and benefits cannot be quantified but should be taken into account and how can those be factored into an evaluation of market constructs? How do these change over time and with differing levels of resource and transmission investment?

b) *Ratepayer Benefits* – What are the mechanisms by which ratepayers realize the benefits from greater market integration? What kind of benefits and costs impact retail energy rates? How does the Commission ensure that benefits flow to ratepayers?

c) *Governance* – How should the Commission evaluate the potential governance structures of the four identified market structures and the subsequent potential for changes in regulatory authority? How should the Commission consider such non-quantifiable governance issues as the independence of market service providers, transparency in market decision-making, the representation of consumer interests, and the role of FERC in market oversight?

d) *Risks* – What risks should the Commission consider in its evaluation of markets? How do these risks change depending on market construct? What factors influence the level of risk borne by Colorado entities?[28]

e) *Quantitative Analysis* – What kind(s) of modeling efforts or other analyses should the Commission be pursuing?

f) *Footprints* – What geographic market footprints should the Commission consider in its market evaluation? Footprint options could include the state of Colorado, the Mountain West Transmission Group, or a larger regional area.

g) *New Transmission* – To what extent is additional transmission access/investment needed in order to realize the benefits of market participation? What is the potential cost and or range of costs of new transmission build needed to enable the full benefits of an RTO? What are the barriers to the development of new transmission resources within the state of Colorado and elsewhere?

h) *Transmission Pricing and Cost Treatment* – How should transmission be priced under different market structures? How should the Commission consider transmission cost allocation issues and the impact on rates for both new and existing transmission infrastructure?

i) *Other Market Services* – How should the Commission consider other market functions such as reserve planning, resource adequacy, GHG policies, ancillary services, and capacity markets?

j) *Timeframe* – What period of time should be covered by the Commission's quantitative analysis?

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[28] Some risks the Commission might consider include the potential for stranded costs, reduction in opportunities for bilateral transactions for non-participating entities, potential market exit fees, etc.

k) *State Environmental Goals* – How should the state's statutory requirements and/or environmental goals pertaining to the state's electric utilities be considered in the Commission's analysis? What implications do different market constructs have for greater renewable penetration and the economics of renewable generation? How do the impacts change over time and depending on technological development?

l) *Imports/Exports* – How should an evaluation of public interest consider the potential impact of markets on the exports of high-GHG emission generation to other states?

40. We invite comments regarding the regulatory process and specific authority of the PUC as regards market regionalization efforts:

a) *Stakeholder Process* – The Commission envisions holding a series of workshops and a public hearing to address specific issues related to its CTCA investigation. What topics and workshop structure would be most productive?

b) *Ordering Authority under the CTCA* – Does the Commission have authority to order Electric Service Providers within the state of Colorado to enter into one of the market options discussed in the CTCA?

c) *Legislative Clarification* – Should the General Assembly clarify and or amplify the jurisdiction of the PUC to order these entities to participate in a market?

d) *Imbalance Market Regulatory Process* – If Colorado jurisdictional utilities decide to pursue either CAISO or SPP energy imbalance services, what would they need to file at the PUC and when would that occur? How does this relate to when the costs to join such a market would begin to be incurred? When would FERC filings be made and what would be included in those FERC filings? To what extent do decisions regarding imbalance market participation restrict future regional market options?

e) *Bifurcated State* – What are the implications, both regarding regulatory processes and costs and benefits, of different Colorado Electric Service Providers pursuing different market constructs or different market operators?

V. ORDER

A. The Commission Orders That:

1. The Commission opens this Miscellaneous Proceeding to collect comments and information helpful in analyzing the potential advantages and disadvantages of joining an energy market, pursuant to §§ 40-2.2-101 and 102, C.R.S., consistent with the discussion above.

2. This proceeding shall serve as a platform to conduct the statutorily required investigation specified in § 40-2.2-102(1), C.R.S., and will serve as a platform from which to conduct workshops, pose questions, hold public hearings, file investigation results, issue orders

and make recommendation as to how to proceed with the next steps in the Colorado Transmission Coordination Act of 2019.

3. This Proceeding is designated as an administrative proceeding under 4 *Code of Colorado Regulations* 723-1-1004(b).

4. This Proceeding will follow the "Permit, but Disclose" process pursuant to Rule 1111 of the Commission's Rules of Practice and Procedure 4 *Code of Colorado Regulations* 723-1.

5. The Commission designates Commissioner Frances Koncilja as the Hearing Commissioner.

6. Persons interested in participating in this proceeding shall file a notice of participation by November 15, 2019.

7. Interested stakeholders shall submit initial comments in response to this Decision no later than November 15, 2019.

8. Responsive comments shall be filed by December 15, 2019.

9. This Decision is effective upon its Mailed Date.

B. ADOPTED IN COMMISSIONERS' WEEKLY MEETING September 11, 2019.

(S E A L)

ATTEST: A TRUE COPY

Doug Dean,
Director

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

JEFFREY P. ACKERMANN

FRANCES A. KONCILJA

JOHN GAVAN

Commissioners