



Planning Advisory Committee (PAC)

March 8, 2023

Carmel, IN

10:00 am to 3:10 pm ET / 9:00 am to 2:10 pm ET

Dial-in and WebEx information available at www.misoenergy.org

Minutes

1. Administrative Items (Cynthia Crane)

a. Call to Order

Meeting called to order at 10:45 am ET, delayed due to technical difficulties.
The Public Meeting Notice was issued.

Sector Representatives:

Affiliate: not present

Coordination: Michael Steiman

End Use: Kavita Maini

Environmental: Natalie McIntire

IPP: Cody Doll for Matt Pawlowski

Muni/Coop/TDU: Steve Leovy

Power Marketers: not present

Public Consumer Group: John Wachtler

State Regulatory: Josh Byrnes

Transmission Developers: Joe Richardson

Transmission Owners: Yarrow Etheredge

In Person Participants:

Adam Solomon, Vestas

Eli Massey, MISO

Randi Nyholm, MN Power

Alison Lane, MISO

Hwikwon Ham, MN PUC

Ruth Kloecker, ITC

Amy Hackbarth, MISO

Jeremiah Doner, MISO

Scott Jones, IN OUCC

Andy Witmeier, MISO

Jim Richardson, Xcel

Scott Wright, MISO

Andy Witmeier, MISO

John Wachtler, MN DOC

Shane O'Brien, Aypa Power

Art Iler, IN OUCC

John Wolfram, BREC-

Shirley Schultz, AMP

Ashleigh Moore, MISO

CWLP-MPPA-SIRC

Sophia Dossin, Invenergy

Bei Li, MISO

Joseph Sullivan, MN PUC

Steve Leovy, WPPI

Brad Kovach, ERM

Julie Pierce, MN Power

Sumit Pal Brar, MISO

Brian Drumm, ITC

Kara Henderson, MN Power

Temujin Roach, EDF

Brian Pedersen, MISO

Lauren Strager, ITC

Renewables

Brian Tulloh, MISO

Lise Trudeau, MN PUC

Tony Hunziker, MISO

Brian Tulloh, MISO

Madeleine Balchan, Xcel

Tricia DeBleekere, MISO

Chris Supino, MISO

Matt Tackett, MISO

Warren Hess, CMPAS

Christina Drake, MISO

Mike Schowalter, Fresh

Yusuf Abdi, MISO

David Harlan, Veriquest

Energy

Remote Participants:

Aaron Demuth, OTP

Ajinkya Rohankar, Baywa

Amy Hackbarth, MISO

Abdelraouf Ismail, Entergy

R.E.

Andrew Gelston, Black

Adam Manty, ATC

Alex Monn, MISO

Mountain

Adam McKinnie, MO PSC

Alexandria Koeplinger, MI

Andrew Kienitz, MN Power

Adam Meyer, MISO

PSC

Andy K, Senergy Solutions

Adam Renfandt, NDSG

Alyssa Cooper, Entergy

Aneta Godbole, MISO

Adam Solomon ,

Amanda Fong, MISO

Anna Torgerson, ATC

Steelhead/Vistas

Amanda Schiro, MISO

Anthony A Alvarez, IA OCA

Aishwarya Jaishankar,

Amber Greb, Entergy

Anton Ptak, EDFR

Pattern Energy

Amber Joyce, MDU

Arash Ghodsian, Invenergy

♦ Post Only Item

✓ Potential Voting Item

^ Feedback Requested

* Verbal Report

Armando Figueroa-Acevedo, MISO	David Severson, Clear Way Energy	Jim Kaminski, MISO
Armin Karabegovic, CWLD	David Shaffer, Dentons	Joanne Hu, RBJ Engineering
Art Iler, IN OUC	Debra Roby, Washington Energy Law	Joe Millard, Ameren
Arunika Chandra, Arevon	Derek Bandera, MISO	Joe Reddoch, MISO
Barry Darry,	Devon Pehrson, National Grid Renewables	Joel Berry, ATC
Ben Dayman, MEC	DeWayne Todd, Alcoa	Joey Cheng, ATC
Beth Soholt, Clean Grid Alliance	Dylan Stockert, MDU	John Liskey, Liskey PLLC
Bill Booth, Michael Best	Dylan Stupca, OTP	John Thomasen, MGE
Bill Peters, MISO	Edin Habibovic, MISO	John Wachtler, MN PUC
Boone Staples, Tenaska	Erik Hanser, MI PSC	John Weber, MRES
Brad Cullipher, Entergy	Erik Winsand, ATC	John Wolfgram, Catalyst
Brad Pope, OMS	Ethan Tellier, Cipco	Jordan Johnson, CenterPoint
Brandin Stoesz, MB Hydro	Fairman Campbell, ITC	Jose Ruiz-Monroy, HEPN
Brenda Prokop, LS Power	Fatou Thiam, MISO	Josh Byrnes, IA IUB
Brent Taylor, MPPA	Felix Wang, Algonquin Power	Joshua Spalding, AES
Bret Hariel, Cooperative Energy	Frederick Salvo, Baker Donelson	Joshua York, LS Power
Brian Giggee, MDU	Gala Disasa, MISO	Justin McNeil, PSC KY
Brian Koz,	Gautham Karthikeyan, PGR	Justin Salinas, Enel
Bridget Sparks, AES	Gimod Mathew, Grid United	Justin Stewart, Ameren
Brinda Malladi, Arevon	Ginger Hodge, CES	Kalen Coleman, MISO
Brock Ondayko, AEP	Grant Bonnstetter, MISO	Kara Henderson, MN Power
Bruce Froyum, MISO	Greg Rislov, SD PUC	Kari Valley, MISO
Bruno Bisewski, RBJ	Hannah Fikes, AES	Katharine McCormick, ICC
Engineering	Hilary Brown, MISO	Kavita Maini, KM Energy
Carolyn Wetterlin, Xcel	Hoa Tran, Grid United	Consulting
Carrie Rowland, Scout Clean Energy	Huaitao Zhang, MISO	Ken Gavin, DTE
Casey Sobecks, MISO	Humberto Branco, Savion	Ken Kagy, CFU
Chad Allen, MISO	Hunter Blair, MISO	Kevin Kingsley, MDU
Chris Norton, AMP	Hwikwon Ham, MN PUC	Kevin Murray, CMT
Chris Plante, WEC	J Tomich, EE	Khamsune Vongkhamchanh, Entergy
Christian Winter, MN Power	Jackson Evans, MISO	Kimberly Dunning, CenterPoint
Ciaran Gallagher, Clean Wisconsin	Jake Weinberg, Gabel	Kiran Thammineni, Ameren
Cindy Guillot, Cleco	James Harmening, ICC	Kristen Staples, AECC
Claudiu Cadar, GDS	James Okenfuss, Savion	Kristina Grandquist, MEC
Cleveland Richards Jr, PPL	James Okullo, MISO	Kun Zhu, SunEnergy1
Clifford Franklin, SEPC	Jared Alholinna, GRE	Kurt Vanderllick, Cleco
Cody Anderson, OTP	Jared Brown, Earth Rise Energy	Kyle Jenkins, East Point Energy
Cody Doll, Next Era	Jared Rasbold, Cooperative Energy	Kyle Johnson, MISO
Craig Wrisley, Xcel	Jason Cox, EQ Energy Advisors	Kyle Supinski, PPL
Cynthia Crane, ITC	Jason Mazigian, BEPC	Kyle Trotter, MISO
Dan Alfred, CMS	Jason Van Huss, Entergy	Kyle Watson, Entergy
Dan Robicheaux, MISO	Javier Martinez, PSCW	LaShel Marvig, Excel
Dan Sprinkle, LG&E and KU	Jeanna Furnish, MISO	Laura Rauch, MISO
Daniel Gunderson, MN Power	Jeff Dodd, Ameren	Laura Witzling, PSCW
Danielle Winner, MN PUC	Jeff Gindling, Duke	Laurel Udenberg, MN Power
Darren Kearney, SD PUC	Jeff Webb,	Lauren Azar, NRDC's SFP
Staff	Jeffrey Cebrik, Avangrid	Lauren Godfrey, MISO
Darrin Lahr, MISO	Jenna Marinstein, Invenergy	Liang Qi, MISO
Dave Seelye, MISO	Jennifer Vosburg, Jennifer J. Vosburg LLC	Lisa Silverwulf, HDR
David Harlan, Veriquest	Jeremi Wofford, Ameren	Lise Trudeau, MN PUC
David Johnston, IN URC	Jeremiah Doner, MISO	Logan Pollander, MISO
David Kapostasy, MISO	Jeremy Barlow, MPUS	Lynn Hecker, MISO
David Mindham, EDPR		Madison Pitts, MISO
David Osterkamp, ITC		Mallorie Azzolini, ConEd
David Savage, DOE/IURC		Mandi McGirr, MISO

Martin Smith, MGE	Rachel Wiedewitsch, IA IUB	Steve Davies, IN URC
Matt Lee, GRE	Rajat Pungaliya, PG	Steve Leovy, WPPI
Matt Prorok, GPI	Renewables	Steve Malek, GRE
Matt Waldron, ATC	Randall Oyr, Xcel	Steve Porter, DPC
Matthew Ellis, GRE	Ray McCausland, Ameren	Steve Purdy, SPP
Matthew Tackett, MISO	Rebecca Moore Darrah,	Steve Rakow, MN PUC
Steve Dowell, Alcoa	ACES	Sumit Brar, MISO
Maxx Snell, MDU	Rhonda Peters, Intertranec	Susan Rossi, Xcel
Meera Shukla, MISO	Richard Bendish, MDU	Tag Short, MISO
Michael Saer, GRE	Robert Taylor, Invenergy	Tamal Paul, MISO
Michael Steiman, MB Hydro	Robert Vosberg, LPSC Staff	Tari Jung, MISO
Michelle Wilson, MISO	Consultant	Ted Callon, CUB WI
Mickey Headds, MISO	Robert Walter, ITC	Terrence Griffin, Entergy
Mike Dicks, HEPN	Roberto Paliza, Paliza	Terry Jarrett, MJMEUC
Mike Gahimer, NIPSCO	Consulting	Terry Volkmann, GLP
Mike Schowalter, Fresh	Rodney Massman, MO PSC	Terry Wright, Big River
Energy	Ronghai Wang, MISO	Thomas Burk, Lightsource
Milica Geissler, MISO	Ruth Kloecker, ITC	BP
Mitchell Myhre, Alliant	Ruth Pallapati, MN Power	Tim Tessier, IA OCA
Morad, ConEd	Ryan Hay, MISO	TJ Cochran, Ameren
Morad Hekmat, ConEd	Ryan Kohler, PSCW	Tom Butz, MN Power
Nan Duan, MISO	Ryan Snyder, CenterPoint	Tom King, WPSCI
Natalie McIntire, CGA	Ryan Westphal, MISO	Travis Broussard, LAFA
Nathan Lin, Cooperative	Sam Gomberg, UCS USA	Trevor Armstrong, MISO
Energy	Sam Hippel, MISO	Tricia DeBleckere, MISO
Nathanael Martin-Nelson,	Samantha Weaver,	Tuan Truong, Duke
MISO	Community Solar Access	Tung Nguyen, Next Era
Neil Hammer, MEC	Sandeep Tadepally, MISO	Venkata Bujimalla, IA IUB
Nicholas Collins, Entergy	Sandy Boegeman, MISO	Victoria Jones, MISO
Nicholas Vaillancourt, DTE	Sangeetha Rajasekeran,	Vince Vandaveer, Ameren
Nick Korhonen, GRE	Apex Clean Energy	Vish Sankaran, ICF
Nick Puga, Bates White	Sarah Nieman, MISO	Walt Cecil, MO PSC
Nihal Mohan, Next Era	Sarvesh Gadre, Arevon	Warren Hess, CMP
Nitin Kushwaha, NGR	Savannah Miller, MISO	Wendy Reed, Wright &
Noel Darce, Stone Pigman	Scott Deffenderfer, Ameren	Talisman
Norm Fishel, CompuServe	Scott Hoberg, MN Power	Werner Roth, PUCT
Pablo Jerez, ATC	Scott Wheeler, Next Era	Wes Pfaff, MRES
Patrick Dalton, MISO	Sean Whitaker, MISO	Will Kaul,
Pavan Sajja, Aura Power	Shane O'Brien, AYPA	Wonbae Choi, Algonquin
Pavithra Rajagopalan, EE	Sherry Johnson, OTP	Power
Peg Abbadini, HE	simon cherucheril, PG	Yarrow Etheredge, Entergy
Phillip Miller, Cleco	Renewables	Yonas Demissie, MISO
Presley Reed, Dentons	Sonjoy Roy, DTE	Yvonne Cappel, All 4 Energy
Preston Hart, OTP	Sophia Dossin, Invenergy	Zachary Callen, ICC
R McKee, ATC	Srijan Karim, MEC	Zack Bearden, MISO
Rachel Ibuado, Gridliance	Stacie Hebert, OTP	Zheng Zhou, MISO

b. Review Agenda

Due to the delayed meeting start, Items 01d and 01e were deferred to the next meeting.

c. Review Meeting Minutes, Action Items

Minutes for the last meeting were adopted as posted. One action item remains open:

Action Item	Owner	Date	Status
Feedback Requests will be opened for: <ul style="list-style-type: none"> GIP Timeline Reduction edits to BPM-015 (due February 8) 	MISO	1/25/2023	Closed
Stakeholder issue submission for dispatch charging values in GIAs for PAC consideration	Stakeholders	1/25/2023	Open

MISO was asked to consider providing a summary of planning meetings to occur throughout the 18-month MTEP cycle	MISO	1/25/2023	Closed
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- d. **PAC 2023 Charter and Management Plan** ✓
Deferred to April
- e. **PSC 2023 Charter and Management Plan** ✓
Deferred to April
- 2. **Status Updates** ☰ (Cynthia Crane)
 - a. **Interconnection Process Working Group (IPWG)**
 - b. **Planning Subcommittee (PSC)**
 - c. **Steering Committee (SC)**

Written status reports were provided with meeting materials. There were no questions.

3. **Liaison Report (Jeanna Furnish)**

Jeanna provided highlights of her written status report in the following areas:

- o Interregional planning update (MISO-PJM IPSAC, MISO-SPP IPSAC)
- o MTEP23 report timeline (noted August 22 posting of MTEP23 draft report)
- o JTIQ update (update provided in March 7 RECBWG)
- o GI reduction BPM language
- o PAC inactive issue recommendations

Two representatives from the Environmental Sector recommended keeping these two issues open in inactive/parking lot status – perhaps combined into a single issue – and were asked to present justification in the next meeting. A recommendation was made for increased documentation around the process or procedures used to close an issue. This should be taken up by the new Stakeholder Governance Working Group (SGWG). A feedback request will be opened to allow sectors to weigh in following the April presentation.
- o Announcements and workshops
 - New PSC liaison: Beibei Li
 - LRTP Workshops added: June 5, July 21
 - March Board/Advisory Committee meetings: March 21 – 23

4. **MISO Posted Items** ☰ (Jeanna Furnish)

a. **Expedited Project Review (EPR) Requests**

Cleco Ragley Substation, Cooperative Energy Maxie Delivery Point, East Texas Electric Cooperative Coldspring Substation, GRE Hampton Corners, METC Elephant Load Interconnection Phase 1, ITCT MDOT I-96 Construction, Ameren Alta – Pioneer 138kV Line, Ameren New Behive – Dupo Ferry 138kV Line, Ameren Coffeen N – Roxford 345kV Line Reconductor, Ameren Effingham NW – Neoga 138kV Line Upgrades

Jeanna discussed why the projects are coming forward, some of which had review begin in October. The floor was opened to questions; there were none.

5. **Reports from IPWG and PSC**

a. **Report from IPWG: MISO-SPP Interim Study Improvements (PAC-2022-4) ^ (Kyle Trotter)**

MISO and SPP have identified a process improvement for MISO interconnection projects limited by constraints on SPP's Affected System. Following supportive discussion and feedback at the IPWG, MISO is seeking feedback from the PAC on the issue and proposed changes to BPM-015 by March 29. Several stakeholders spoke in support of the change, as well as expansion to documentation of interregional processes with PJM – which is on the IPWG management plan beginning in Q2.

Stakeholders were invited to submit feedback by March 29.

b. Next Steps: ERIS DFAX Reduction Analysis (PAC-2022-3) (Andy Witmeier)

The PAC previously finalized the BPM language; however, MISO received some additional feedback that Interconnection Customers (IC) were looking for more analysis beyond what was provided last year regarding DFAX reduction. The additional cost analysis MISO performed showed minimal impact to overall costs. Andy answered several questions addressed in prior meetings about the rationale for selecting 10% DFAX. There were no additional changes to the new criteria nor the BPM. He indicated that the LRTP Tranche 1 portfolio will be in the base case of the DPP 2022 cycle kicking off on March 27.

No further changes were made, nor action items taken. This issue is closed.

6. MTEP Guiding Principles Recommendation (Sandy Boegeman)

Sandy presented a summary of feedback received on the guiding principles from the Organization of MISO States, 2 PAC sectors, and one individual member alongside MISO responses. Several edits were made to the Principles based on that feedback as shown in redline. These redline recommendations will be provided to the System Planning Committee of the Board for consideration.

7. Consideration of 765 kV and HVDC in Future Transmission Plans (Matt Tackett)

A technical informational presentation was offered to the PAC discussing the various pros and cons of the transmission solution choices and how that should inform the specific solutions pursued in LRTP Tranche 2. Alongside the presentation, MISO posted an additional file containing supplemental information. Matt answered many technical questions throughout his presentation about technology performance, modeling, and policy, and received supportive comments for considering HVDC in Tranche 2.

When new bulk transmission facilities are required, there are pros and cons to each of the transmission solution choices: 345 kV (500 kV), 765 kV, HVDC. MISO noted an “All Things Considered” strategy where a diverse set of new transmission strategies is considered will result in the best overall transmission system. Legacy transmission voltage levels in a sub-region or on the seam also play a role in determining potential transmission solutions moving forward. Matt talked about how these principles informed the LRTP long-term roadmap and showed a conceptual map first shared in March 2021 (see slide 34). When legacy voltages are preferred, such voltage levels should align with those that already exist in the area.

Chair Crane noted the robust interest in this topic and asked those with continuing interest to contact PAC leadership as well as MISO.

8. Transmission Planning and Other Study Updates

a. Futures Refresh Update (Tony Hunziker, Bei Li)

Tony presented MISO’s response to stakeholder feedback and actions that were taken on preliminary F2A expansion: added scope to validate energy adequacy of the non-chronological EGEAS expansion with a chronological tool (PROMOD); developed and posted a document addressing questions raised in feedback on assumptions; and developed and posted a Retirements list by milestone year. He noted updates to the Futures webpage and nomenclature and coordination points between the PAC and LRTP Workshop. At the March 10 LRTP Workshop, MISO will present final F2A expansion and preliminary F2A siting and request feedback.

Bei Li talked about the process to validate the energy adequacy of EGEAS expansion in PROMOD as reflected on slide 6. MISO staff answered a few questions about modeling and gas expansion expectations. It was noted that PROMOD models should be available this summer.



Next steps are for stakeholders to review and provide feedback on F2A preliminary siting, which will then be finalized. MISO will work on F2A local expansion followed by F1A and F3A expansion and siting. A Futures Refresh Report will also be published later this year.

b. Competitive Transmission Deposit Update (Brian Pedersen)

Brian informed the PAC that MISO intends to increase the proposal deposit from \$100k to \$150k effective for proposal deposits received in September. Proposal evaluation expenses will remain unchanged in section VIII.D.3 in Attachment FF; MISO will file to amend section VIII.D.2 in May.

Additionally, a revised RFP Release Schedule was posted on February 17 and on March 2 a list of the RFP Respondents to the first RFP was posted. There were no questions.

9. New Business

Jeanna noted a written new business request received by PAC leadership pertaining to the posting and notification of new Local Planning Criteria (LPC). MISO agrees with the request and will apply additional resources and procedures to the posting and notification. Stakeholders should expect to see notifications through the Planning Superlist and via GI scoping calls.

10. Review Action Items

Action Item	Owner	Date	Status
Stakeholder issue submission for dispatch charging values in GIAs for PAC consideration	Stakeholders	1/25/2023	Open
Feedback requests will be opened for: <ul style="list-style-type: none">• Inactive issue proposal – will leave it open until after the April Env Sector presentation• MISO-SPP Interim Study Improvements BPM (due March 29)	MISO	3/8/2023	Closed
Management Plan/Next meeting agenda: <ul style="list-style-type: none">• Annual review and approval of PAC, IPWG and PSC administrative documents• Presentation from Environmental Sector on Coordinated Planning Process	PAC Leadership	3/8/2023	Closed

11. Adjourn

Meeting adjourned at 3:40 pm ET.

Next Meeting: April 26, 2023