



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

Alison Lane, MISO

Amy Hackbarth, MISO

Andy Witmeier, MISO

Andy Witmeier, MISO

Art Iler, IN OUCC

Ashleigh Moore, MISO

Bei Li, MISO

Brad Kovach, ERM

Brian Drumm, ITC

Brian Pedersen, MISO

Brian Tulloh, MISO

Brian Tulloh, MISO

Chris Supino, MISO

Christina Drake, MISO

David Harlan, Veriquist

Eli Massey, MISO

Hwikwon Ham, MN PUC

Jeremiah Doner, MISO

Jim Richardson, Xcel

John Wachtler, MN DOC

John Wolfram, BREC-

CWLP-MPPA-SIRC

Joseph Sullivan, MN PUC

Julie Pierce, MN Power

Kara Henderson, MN Power

Lauren Strager, ITC

Lise Trudeau, MN PUC

Madeleine Balchan, Xcel

Matt Tackett, MISO

Mike Schowalter, Fresh

Energy

Randi Nyholm, MN Power

Ruth Kloecker, ITC

Scott Jones, IN OUCC

Scott Wright, MISO

Shane O'Brien, Aypa Power

Shirley Schultz, AMP

Sophia Dossin, Invenenergy

Steve Leovy, WPPI

Sumit Pal Brar, MISO

Temujin Roach, EDF

Renewables

Tony Hunziker, MISO

Tricia DeBleekere, MISO

Warren Hess, CMPAS

Yusuf Abdi, MISO

Remote Participants:

Aaron Demuth, OTP

Abdelraouf Ismail, Entergy

Adam Manty, ATC

Adam McKinnie, MO PSC

Adam Meyer, MISO

Adam Renfand, NDSG

Adam Solomon,

Steelhead/Vistas

Aishwarya Jaishankar,

Pattern Energy

Ajinkya Rohankar, Baywa

R.E.

Alex Monn, MISO

Alexandria Koeplinger, MI

PSC

Alyssa Cooper, Entergy

Amanda Fong, MISO

Amanda Schiro, MISO

Amber Greb, Entergy

Amber Joyce, MDU

Amy Hackbarth, MISO

Andrew Gelston, Black
Mountain

Andrew Kienitz, MN Power

Andy K, Senenergy Solutions

Aneta Godbole, MISO

Anna Torgerson, ATC

Anthony A Alvarez, IA OCA

Anton Ptak, EDFR

Arash Ghodsian, Invenenergy



Armando Figueroa-Acevedo, MISO
Armin Karabegovic, CWLD
Art Iler, IN OUCC
Arunika Chandra, Arevon
Barry Darry,
Ben Dayman, MEC
Beth Soholt, Clean Grid Alliance
Bill Booth, Michael Best
Bill Peters, MISO
Boone Staples, Tenaska
Brad Cullipher, Entergy
Brad Pope, OMS
Brandin Stoesz, MB Hydro
Brenda Prokop, LS Power
Brent Taylor, MPPA
Bret Hariel, Cooperative Energy
Brian Giggee, MDU
Brian Koz,
Bridget Sparks, AES
Brinda Malladi, Arevon
Brock Ondayko, AEP
Bruce Froyum, MISO
Bruno Bisewski, RBJ Engineering
Carolyn Wetterlin, Xcel
Carrie Rowland, Scout Clean Energy
Casey Sobecks, MISO
Chad Allen, MISO
Chris Norton, AMP
Chris Plante, WEC
Christian Winter, MN Power
Ciaran Gallagher, Clean Wisconsin
Cindy Guillot, Cleco
Claudiu Cadar, GDS
Cleveland Richards Jr, PPL
Clifford Franklin, SEPC
Cody Anderson, OTP
Cody Doll, Next Era
Craig Wrisley, Xcel
Cynthia Crane, ITC
Dan Alfred, CMS
Dan Robicheaux, MISO
Dan Sprinkle, LG&E and KU
Daniel Gunderson, MN Power
Danielle Winner, MN PUC
Darren Kearney, SD PUC Staff
Darrin Lahr, MISO
Dave Seelye, MISO
David Harlan, Veriquest
David Johnston, IN URC
David Kapostasy, MISO
David Mindham, EDPR
David Osterkamp, ITC
David Savage, DOE/IURC

David Severson, Clear Way Energy
David Shaffer, Dentons
Debra Roby, Washington Energy Law
Derek Bandera, MISO
Devon Pehrson, National Grid Renewables
DeWayne Todd, Alcoa
Dylan Stockert, MDU
Dylan Stupca, OTP
Edin Habibovic, MISO
Erik Hanser, MI PSC
Erik Winsand, ATC
Ethan Tellier, Cipco
Fairman Campbell, ITC
Fatou Thiam, MISO
Felix Wang, Algonquin Power
Frederick Salvo, Baker Donelson
Gala Disasa, MISO
Gautham Karthikeyan, PGR
Gimod Mathew, Grid United
Ginger Hodge, CES
Grant Bonnstetter, MISO
Greg Rislov, SD PUC
Hannah Fikes, AES
Hilary Brown, MISO
Hoa Tran, Grid United
Huaitao Zhang, MISO
Humberto Branco, Savion
Hunter Blair, MISO
Hwikwon Ham, MN PUC
J Tomich, EE
Jackson Evans, MISO
Jake Weinberg, Gabel
James Harmening, ICC
James Okenfuss, Savion
James Okullo, MISO
Jared Alholinna, GRE
Jared Brown, Earth Rise Energy
Jared Rasbold, Cooperative Energy
Jason Cox, EQ Energy Advisors
Jason Mazigian, BEPC
Jason Van Huss, Entergy
Javier Martinez, PSCW
Jeanna Furnish, MISO
Jeff Dodd, Ameren
Jeff Gindling, Duke
Jeff Webb,
Jeffrey Cebrik, Avangrid
Jenna Marinstein, Invenergy
Jennifer Vosburg, Jennifer J. Vosburg LLC
Jeremi Wofford, Ameren
Jeremiah Doner, MISO
Jeremy Barlow, MPUS

Jim Kaminski, MISO
Joanne Hu, RBJ Engineering
Joe Millard, Ameren
Joe Reddoch, MISO
Joel Berry, ATC
Joey Cheng, ATC
John Liskey, Liskey PLLC
John Thomasen, MGE
John Wachtler, MN PUC
John Weber, MRES
John Wolfram, Catalyst
Jordan Johnson, CenterPoint
Jose Ruiz-Monroy, HEPN
Josh Bymes, IA IUB
Joshua Spalding, AES
Joshua York, LS Power
Justin McNeil, PSC KY
Justin Salinas, Enel
Justin Stewart, Ameren
Kalen Coleman, MISO
Kara Henderson, MN Power
Kari Valley, MISO
Katharine McCormick, ICC
Kavita Maini, KM Energy Consulting
Ken Gavin, DTE
Ken Kagy, CFU
Kevin Kingsley, MDU
Kevin Murray, CMTCC
Khamsune Vongkhamchanh, Entergy
Kimberly Dunning, CenterPoint
Kiran Thammineni, Ameren
Kristen Staples, AECC
Kristina Grandquist, MEC
Kun Zhu, SunEnergy1
Kurt Vanderlick, Cleco
Kyle Jenkins, East Point Energy
Kyle Johnson, MISO
Kyle Supinski, PPL
Kyle Trotter, MISO
Kyle Watson, Entergy
LaShel Marvig, Excel
Laura Rauch, MISO
Laura Witzling, PSCW
Laurel Udenberg, MN Power
Lauren Azar, NRDC's SFP
Lauren Godfrey, MISO
Liang Qi, MISO
Lisa Silverwulf, HDR
Lise Trudeau, MN PUC
Logan Pollander, MISO
Lynn Hecker, MISO
Madison Pitts, MISO
Mallorie Azzolini, ConEd
Mandi McGirr, MISO
Marc Keyser, MISO
Marc-Alain Behar, Nexamp
Margaret Miller, ENGIE



Martin Smith, MGE
 Matt Lee, GRE
 Matt Prorok, GPI
 Matt Waldron, ATC
 Matthew Ellis, GRE
 Matthew Tackett, MISO
 Steve Dowll, Alcoa
 Maxx Snell, MDU
 Meera Shukla, MISO
 Michael Saer, GRE
 Michael Steiman, MB Hydro
 Michelle Wilson, MISO
 Mickey Headds, MISO
 Mike Dicks, HEPN
 Mike Gahimer, NIPSCO
 Mike Schowalter, Fresh Energy
 Milica Geissler, MISO
 Mitchell Myhre, Alliant
 Morad, ConEd
 Morad Hekmat, ConEd
 Nan Duan, MISO
 Natalie McIntire, CGA
 Nathan Lin, Cooperative Energy
 Nathanael Martin-Nelson, MISO
 Neil Hammer, MEC
 Nicholas Collins, Entergy
 Nicholas Vaillancourt, DTE
 Nick Korhonen, GRE
 Nick Puga, Bates White
 Nihal Mohan, Next Era
 Nitin Kushwaha, NGR
 Noel Darce, Stone Pigman
 Norm Fishel, CompuServe
 Pablo Jerez, ATC
 Patrick Dalton, MISO
 Pavan Sajja, Aura Power
 Pavithra Rajagopalan, EE
 Peg Abbadini, HE
 Phillip Miller, Cleco
 Presley Reed, Dentons
 Preston Hart, OTP
 R McKee, ATC
 Rachel Ibuado, Gridliance

Rachel Wiedewitsch, IA IUB
 Rajat Pungaliya, PG
 Renewables
 Randall Oyr, Xcel
 Ray McCausland, Ameren
 Rebecca Moore Darrah, ACES
 Rhonda Peters, Intertranec
 Richard Bendish, MDU
 Robert Taylor, Invenergy
 Robert Vosberg, LPSC Staff
 Consultant
 Robert Walter, ITC
 Roberto Paliza, Paliza
 Consulting
 Rodney Massman, MO PSC
 Ronghai Wang, MISO
 Ruth Kloecker, ITC
 Ruth Pallapati, MN Power
 Ryan Hay, MISO
 Ryan Kohler, PSCW
 Ryan Snyder, CenterPoint
 Ryan Westphal, MISO
 Sam Gomberg, UCS USA
 Sam Hipple, MISO
 Samantha Weaver, Community Solar Access
 Sandeep Tadepally, MISO
 Sandy Boegeman, MISO
 Sangeetha Rajasekeran, Apex Clean Energy
 Sarah Nieman, MISO
 Sarvesh Gadre, Arevon
 Savannah Miller, MISO
 Scott Deffenderfer, Ameren
 Scott Hoberg, MN Power
 Scott Wheeler, Next Era
 Sean Whitaker, MISO
 Shane O'Brien, AYP
 Sherry Johnson, OTP
 simon cherucheril, PG
 Renewables
 Sonjoy Roy, DTE
 Sophia Dossin, Invenergy
 Srijan Karim, MEC
 Stacie Hebert, OTP

Steve Davies, IN URC
 Steve Leovy, WPPI
 Steve Malek, GRE
 Steve Porter, DPC
 Steve Purdy, SPP
 Steve Rakow, MN PUC
 Sumit Brar, MISO
 Susan Rossi, Xcel
 Tag Short, MISO
 Tamal Paul, MISO
 Tari Jung, MISO
 Ted Callon, CUB WI
 Terrence Griffin, Entergy
 Terry Jarrett, MJMEUC
 Terry Volkmann, GLP
 Terry Wright, Big River
 Thomas Burk, Lightsource BP
 Tim Tessier, IA OCA
 TJ Cochran, Ameren
 Tom Butz, MN Power
 Tom King, WPSCI
 Travis Broussard, LAFA
 Trevor Armstrong, MISO
 Tricia DeBleekere, MISO
 Tuan Truong, Duke
 Tung Nguyen, Next Era
 Venkata Bujimalla, IA IUB
 Victoria Jones, MISO
 Vince Vandaveer, Ameren
 Vish Sankaran, ICF
 Walt Cecil, MO PSC
 Warren Hess, CMP
 Wendy Reed, Wright & Talisman
 Werner Roth, PUCT
 Wes Pfaff, MRES
 Will Kaul, Wonbae Choi, Algonquin Power
 Yarrow Etheredge, Entergy
 Yonas Demissie, MISO
 Yvonne Cappel, All 4 Energy
 Zachary Callen, ICC
 Zack Bearden, MISO
 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: • 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:

- Interregional planning update (MISO-PJM IPSAC, MISO-SPP IPSAC)
- MTEP23 report timeline (noted August 22 posting of MTEP23 draft report)
- JTIQ update (update provided in March 7 RECBWG)
- GI reduction BPM language
- 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.
- 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 Reconnector, 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 presentationMISO-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 documentsPresentation 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