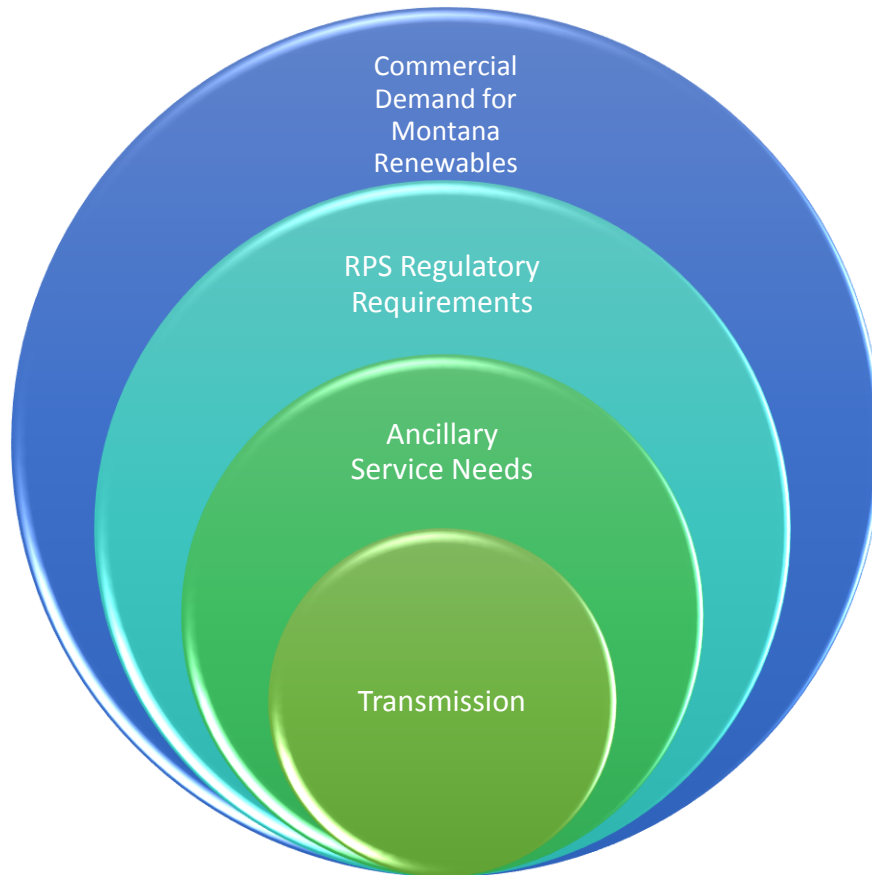


Montana Renewable Resource Development Action Plan



The factors influencing the development of Montana's renewable resources are nested. Availability of transmission may be a starting point for the development landscape, but transmission rate treatment, working through the queues of the transmission providers, acquiring the ancillary products needed to move the energy to load, and the characteristics required to 'count' toward the Renewable Portfolio Standard requirements of the western states also affect their competitive profile and resulting commercial demand. These are all elements of supply and demand which will ultimately determine if Montana based renewable generation will become an attractive resource to purchasers outside of Montana.

The intent of this project is to explore the physical and process opportunities and challenges facing Montana renewable resource development. This project arose from a diverse array of interested stakeholders with a mutual desire to explore the opportunities and challenges facing that development. The project's activities will culminate in an action plan to include an exploration of these nested issues, clarification

of facts, and development of a range of potential solutions to each of the barriers identified. The project will conclude by June 30, 2018. Actions identified in the plan will have activities and decisions that extend beyond the June 30, 2018 date.

Project Structure

The project is sponsored by Montana Governor Steve Bullock and BPA Administrator Elliot Mainzer. It will be organized in a structure of 3 working committees guided by a steering committee. The work will address (1) commercial/policy, (2) planning, and (3) operational issues. Each of the issues identified below will be assigned to one primary committee, but these committees will coordinate with the others as appropriate.

The 3 working committees will strive to work collaboratively toward consensus recommendations to solve the issues to which they have been assigned. To the extent that consensus cannot be reached, a range of alternatives will be developed and submitted, along with the pros and cons of each, to the steering committee who will select among them, send the working committee back with guidance for additional work, or determine a solution of their own. A final report will be published by the steering committee addressing transmission, ancillary services, regulatory, and commercial viability issues.

BPA will maintain an external website for this project containing this action plan, notices, meeting agendas, and other materials. All committee, subcommittee and working group meetings will be noticed on the website (<https://www.bpa.gov/Projects/Initiatives/Montana-Renewable-Energy/Pages/Montana-Renewable-Energy.aspx>) and open to the public. BPA and the State of Montana will facilitate the development of meeting agendas with other participants.

Any decision, option or recommendation developed in this process regarding BPA will likely be subject to another subsequent process, such as a BPA rate case, tariff filing or policy process before it may be adopted. In addition, jurisdictional entities will be subject to State and FERC filings and other regulatory requirements before adoption.

Issue Categories:

Transmission

1. Current Transmission Availability
 - a. What is the current inventory of available transfer capability on the transmission systems of the various entities in Montana including NorthWestern Energy, the Colstrip Parties, Avista and BPA from the point of resource integration to the receiving point? (Colstrip to Garrison, West of Garrison, West of Hatwai, and beyond to western

- load centers). What is available to the east, north and south out of Montana and on whose systems? COMMERCIAL/POLICY
- b. What is the current capability to sink at the Mid-C hub and access existing markets and transmission without requiring new Available Transmission Capacity (ATC) over the South of Alston cutplane? COMMERCIAL/POLICY
 - c. How much of this inventory is available as 'new' offers from a Transmission Owner (TO) and how much is already allocated to a transmission customer, but may be available to the market? COMMERCIAL/POLICY
 - d. How can the outstanding dispute between BPA and NorthWestern Energy over access to 184MW of capacity on the Montana Intertie be resolved? COMMERCIAL/POLICY
 - e. How much ATC is available on the BPA Network to the west of Garrison and over the Eastern Intertie to deliver to potential buyers in the western states load centers? What Remedial Action Schemes (RAS) are required? PLANNING
 - f. What interactions on other transmission paths, such as South of Alston, limit available network capacity? PLANNING
 - g. How and when do inventories change on the existing system with the retirement of Colstrip Units 1 and 2? PLANNING
 - h. What investments or controls, if any, are needed to preserve reliability and transfer capability when Colstrip generation is retired and replaced by renewable resources with less mass and inertia? OPERATIONS
 - i. How should the appropriate cost allocations be determined for any desired incremental investments? COMMERCIAL/POLICY
 - j. How might existing transmission agreements be modified to free up future use of the Colstrip Transmission System? COMMERCIAL/POLICY
2. Additional Incremental Transmission Capacity
- a. How much incremental inventory can be added with various capital projects and at what cost? PLANNING
 - i. Montana to Washington project (M2W)
 - ii. Colstrip Transmission System Upgrade
 - iii. RAS
 - iv. Non-wires solutions (to mitigate South of Alston impacts or other constraints)
 - v. Other paths? East, north, south?
 - b. How much environmental and permitting work is needed? Who should pay for this work? COMMERCIAL/POLICY
 - c. When could this inventory be available? COMMERCIAL/POLICY

- d. How should cost allocation and transmission rate treatment be determined for the incremental 'tranches' of investment?
COMMERCIAL/POLICY

3. Rate Design COMMERCIAL/POLICY

- a. How do pancaked rates (comprehensive to include losses and scheduling and dispatch charges) impact the total transmission cost to reach buyers?
- b. If pancakes are eliminated or reduced in Montana, what are the implications to other transmission segmentation on the various TOs' systems?
- c. If multiple TOs need to make investments on their systems to free up transmission capacity, what opportunity is there for a joint tariff or coordinated transmission offering? COMMERCIAL/POLICY

4. Interconnection and Service Request Queues COMMERCIAL/POLICY

- a. What are the timing and cost implications of progressing through multiple TOs' queues?
- b. Are there opportunities to synchronize TO processes for a requestor?
- c. Are the various transmission entities' transmission tariffs different in ways that contribute to access barriers?
- d. What are the various OATT and FERC requirements?

Ancillary Services

1. Dynamic Transfer Capability (DTC) OPERATIONS

- a. How much DTC is available on key BPA interchange points to schedule wind out of Montana and into the BPA network? How much Montana wind can be supported by this DTC?
- b. How much DTC is available between the BPA network and other PNW BAs that may be viable markets for Montana renewables (PSE, PGE, AVA, etc.)? How much Montana wind can be supported by this DTC?
- c. What changes could be made to BPA facilities, systems and/or operating procedures to increase DTC out of Montana and/or into other PNW BAs? How much DTC can be added with these changes? How much Montana wind can be supported by this incremental DTC?
- d. How much DTC is available to dynamically schedule flexible capacity through the NorthWestern Energy and Colstrip Transmission Systems? How much Montana wind can be supported by this DTC?
- e. How much study is needed to determine this DTC and by who? How much would a study cost and who should pay for it? What timeframe is possible?

2. Flexible Capacity Requirements OPERATIONS

- a. How much incremental flexible capacity is needed to reliably integrate various quantities of Montana wind? Do those quantities change depending on which BA is providing balancing services?

- b. Given the diversity benefit of Montana wind, can the flexible capacity already deployed for other wind resources (Columbia Gorge wind) be utilized at a lower cost than others would need to charge if they don't have diverse wind resources balanced in their BAs? If there are savings, can this offset other transmission expenses?
- c. What are the potential sources of balancing capacity? When could they be made available?
- d. Could the California ISO's Energy Imbalance Market play a role in providing ancillary services?
- e. How much flexible capacity is available on NorthWestern's system to integrate new wind generation? Under what pricing and terms could it be made available? With existing facilities, it appears that there may not be any flexible capacity remaining.
- f. How much is available on BPA's system to integrate new wind generation? Under what pricing and terms could it be made available?
- g. How much is available from the Gordon Butte pumped storage project to integrate new wind resources? Under what pricing and terms could it be made available?
- h. How much flexible capacity is available from demand or receiving side BAs or other intermediate (pass through) BA's? Under what pricing and terms could it be made available?

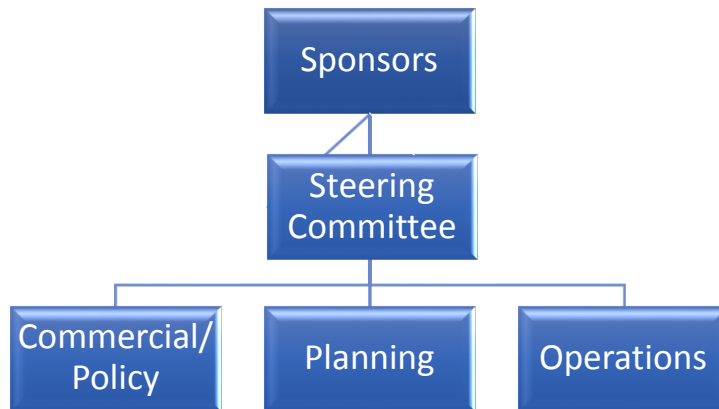
Regulatory Requirements COMMERCIAL/POLICY

- 1. What are the attributes of Montana wind resource integration necessary to meet the RPS requirements of Washington, Oregon and California?
- 2. Are there any other barriers to qualification beyond dynamic scheduling to the buyer's Balancing Authority Area (BAA)?
- 3. What are the impacts of the Production Tax Credit (PTC) expiration on developer investment timing and IRP solicitation bids?
- 4. Are there any other regulatory or policy barriers to Montana exports?

Commercial Viability COMMERCIAL/POLICY

- 1. Has Montana wind been identified as an attractive potential resource for west side IOU's IRPs? Oregon, Washington? Directly served 'Choice' customers in Montana?
- 2. Is there demand from NW Public Power (including Montana public power utilities) or California anticipated?
- 3. Are exports to Alberta to the north and Wyoming or Idaho to the south feasible?
- 4. What additional physical barriers exist (beyond those identified in transmission or ancillary services categories) to affect competitiveness? Identified by utilities? By wind developers?

5. What process barriers exist (beyond those identified in transmission, ancillary services, or regulatory requirements categories)?



Steering Committee: Co-Leads: David Mills, PSE, Tim Baker, MT Gov's Office and NWPPC, and Mike Cashell, NorthWestern

1. Tim Baker, MT Gov's Office, NWPPC
2. Larry Bekkedahl, PGE
3. Carl Borgquist, Absaroka
4. Johnny Casana, Pattern
5. Mike Cashell, NWE
6. Jeff Cook, BPA
7. Scott Corwin, PPC
8. Michael Cressner, Orion
9. Michael Hagood, INL
10. Travis Kavulla, Montana PUC
11. Joe Lukas, MT G&T
12. Chuck McGraw, NRDC
13. David Mills, PSE
14. Bill Pascoe, representing Orion
15. Rachel Shimshak, Renewable NW
16. Jason Smith, Montana Governor's Office of Indian Affairs (ex-officio)
17. Gov Inslee's office
18. WUTC
19. OPUC
20. Avista
21. PacifiCorp

Commercial/Policy Committee: Co-Leads: Brian Altman, BPA and Bill Pascoe, representing Orion

1. Brian Altman, BPA
2. Robin Arnold, MT PSC
3. Carl Borgquist, Absaroka
4. Michael Cressner, Orion
5. Mike Deen, PPC
6. Brian Fadie, MEIC
7. Jeff Fox, Renewable NW
8. Stacey Gasvoda, Gaelectric
9. John Goroski, Flathead Electric Coop
10. Nate Hill, PSE (Alternate)
11. Doug Howell, Sierra Club
12. Dan Lloyd, MT DEQ
13. Joe Lukas, MT G&T
14. Chuck Magraw, NRDC
15. Andrew McLain, NorthWestern
16. Larry Nordell, MT Consumer Counsel
17. Bill Pascoe, representing Orion
18. Diego Rivas, NVEC
19. Shauna Tran, PSE (Primary)
20. Avista
21. PGE
22. PacifiCorp

Planning Committee: Co-Lead: Cameron Yourkowski, Renewable NW and Patrick Rochelle, BPA

1. Eli Bailey, Absaroka
2. Don Bauer, NorthWestern
3. Patrick Damiano, ColumbiaGrid
4. Bob Decker, MT PSC
5. Brian Dekiep, NWPPC
6. Ray Ellis, Lincoln Electric Coop
7. Tom Flynn, PSE (Primary)
8. Fred Huetten, NVEC
9. Chelsea Loomis, NorthWestern
10. Phillip Popoff, PSE (Alternate)
11. Bill Pascoe, representing Orion
12. Pat Rochelle, BPA
13. Tom Schneider, consultant
14. Ed Weber, HDR
15. Cameron Yourkowski, Renewable NW
16. Avista

17. PGE
18. PacifiCorp

Operations Committee: Co-Leads: Bart McManus, BPA and Casey Johnston, NorthWestern

1. Thomas Bagnell, PSC (Alternate)
2. Rob Hovsopian, INL
3. Rhett Hurless, Absaroka
4. Casey Johnston, NorthWestern
5. Libby Kirby, BPA
6. Bart McManus, BPA
7. Ken Neal, NaturEner
8. Bill Pascoe, representing Orion
9. Tom Schneider, consultant
10. Pete Simonich, Missoula Electric Coop
11. Evan Sorrell, PSE (Primary)
12. Ed Weber, HDR
13. Cameron Yourkowski, Renewable NW
14. Avista
15. PGE
16. PacifiCorp