



Pacific Northwest Economic Region (PNWER) Annual Summit - July 13, 2015
Renewable Resources and Transmission – Challenges and Successes
Mike Cashell, Vice President - Transmission

NorthWestern[®]
Energy
Delivering a Bright Future



About NorthWestern

South Dakota Operations

Electric

62,500 customers

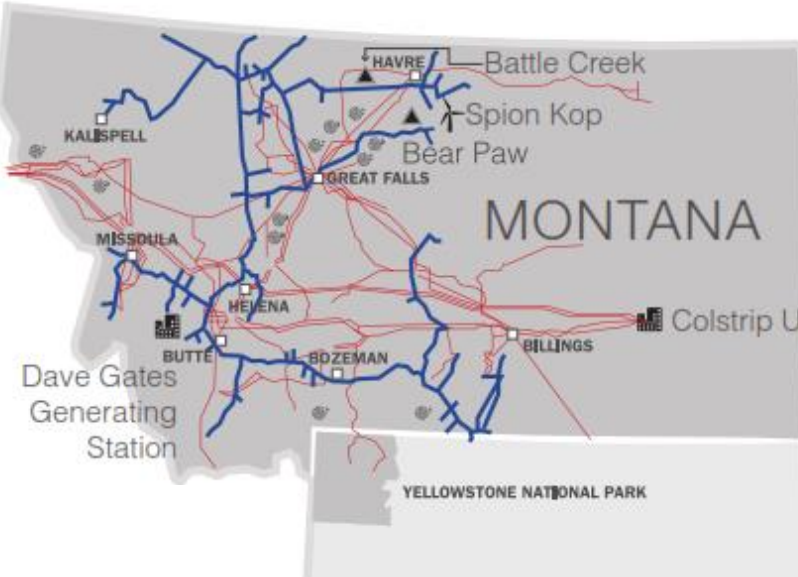
3,500 miles – transmission & distribution lines

360 MW of power generation

Natural Gas

45,500 customers

1,655 miles of transmission and distribution pipeline



Montana Operations

Electric

353,600 customers

24,300 miles – transmission & distribution lines

895 MW of baseload power generation

105 MW of regulating services generation

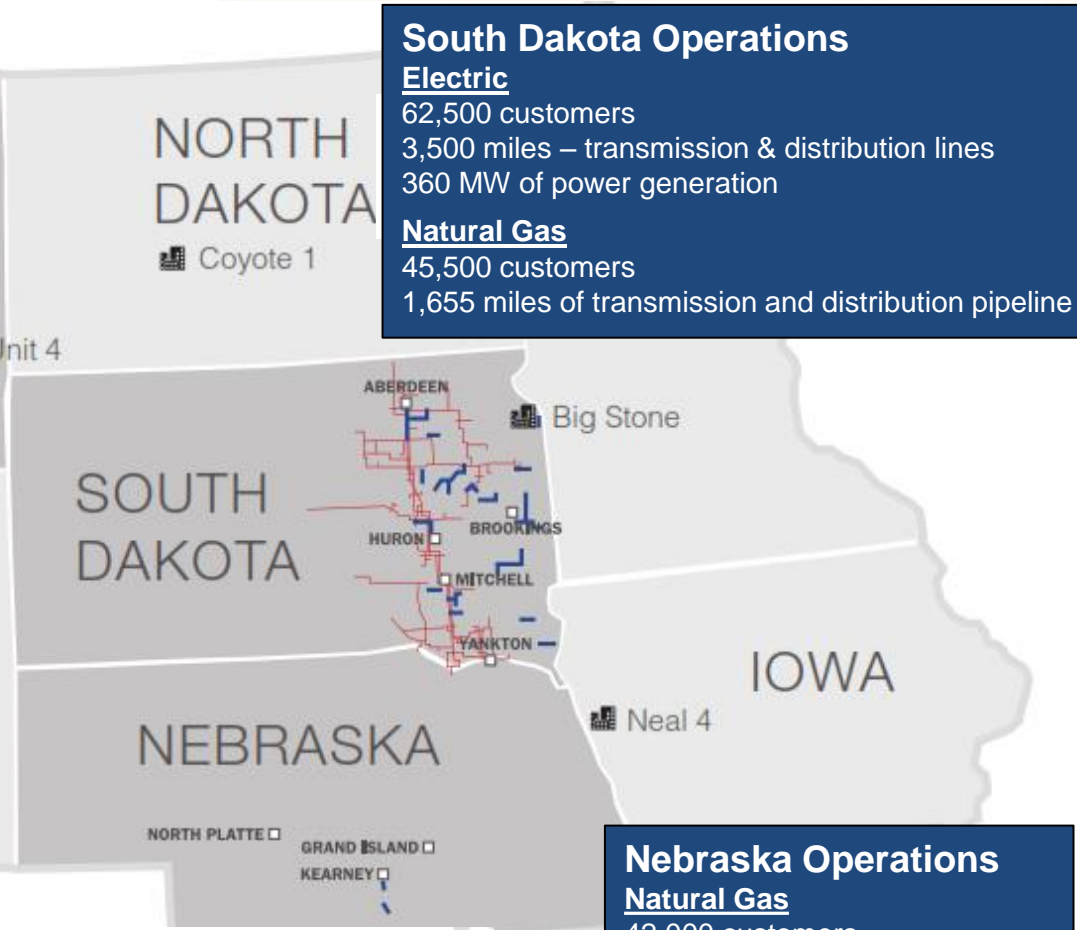
Natural Gas

189,000 customers

7,200 miles of transmission and distribution pipeline

18 Bcf of gas storage capacity

Owens 70 Bcf of proven natural gas reserves



Nebraska Operations
Natural Gas
 42,000 customers
 750 miles of distribution pipeline

- Natural Gas
- Electric
- 🏭 Electric Generating Plants
- ▲ Natural Gas Reserves
- ⚡ Wind Farm
- ⚙️ Hydro Facilities





Montana Electric Service Territory



NorthWestern Energy serves 354,000 Montana electric customers in 187 communities, and provides essential infrastructure for electric cooperatives and other transmission customers.



Montana Natural Gas Service Territory



NorthWestern Energy's serves 189,000 Montana natural gas customers in 105 communities, and provides gas storage and transmission to other parties.



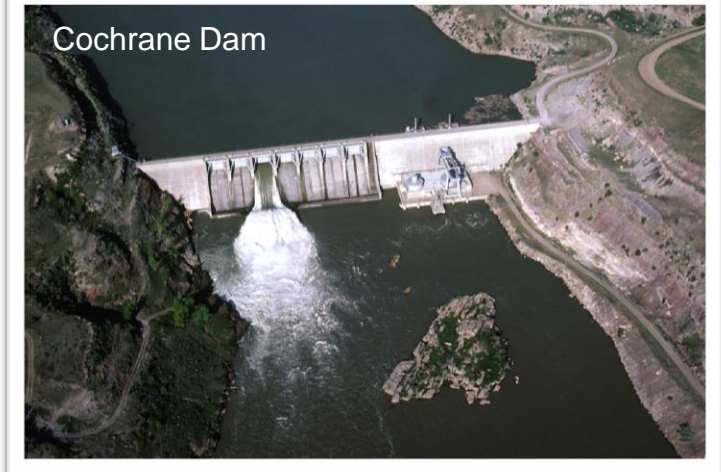
- 6,900 miles of MT electric transmission lines
- 17,500 miles of MT electric distribution lines
- 5,000 miles of MT natural gas distribution pipeline
- 2,000 miles of gas transmission pipeline, plus gathering and storage
- Due to recent purchases, NWE owns about 75 billion cubic feet of natural gas reserves – all dedicated to serve our MT customers



- November 2014 acquisition of eleven base load hydroelectric generating facilities representing 633 megawatts of capacity and one storage reservoir from PPL Montana
- These assets are consistent with our vision of providing safe and reliable energy

Overview of Hydro Facilities⁽¹⁾

Plant	Net Capacity (MW)	Ownership%	COD	River Source	FERC License Expiration	5-Yr Avg. Capacity Factor ⁽²⁾
Black Eagle	21	100%	1927	Missouri	2040	73.6%
Cochrane	69	100%	1958	Missouri	2040	49.1%
Hauser	19	100%	1911	Missouri	2040	79.3%
Holter	48	100%	1918	Missouri	2040	72.4%
Kerr ⁽³⁾	194	100%	1938	Flathead	2035	64.5%
Madison	8	100%	1906	Madison	2040	89.2%
Morony	48	100%	1930	Missouri	2040	63.8%
Mystic	12	100%	1925	West Rosebud Creek	2050	48.2%
Rainbow	60	100%	1910 / 2013	Missouri	2040	77.5%
Ryan	60	100%	1915	Missouri	2040	79.8%
Thompson Falls	94	100%	1915	Clark Fork	2025	60.1%
Total	633					66.1%



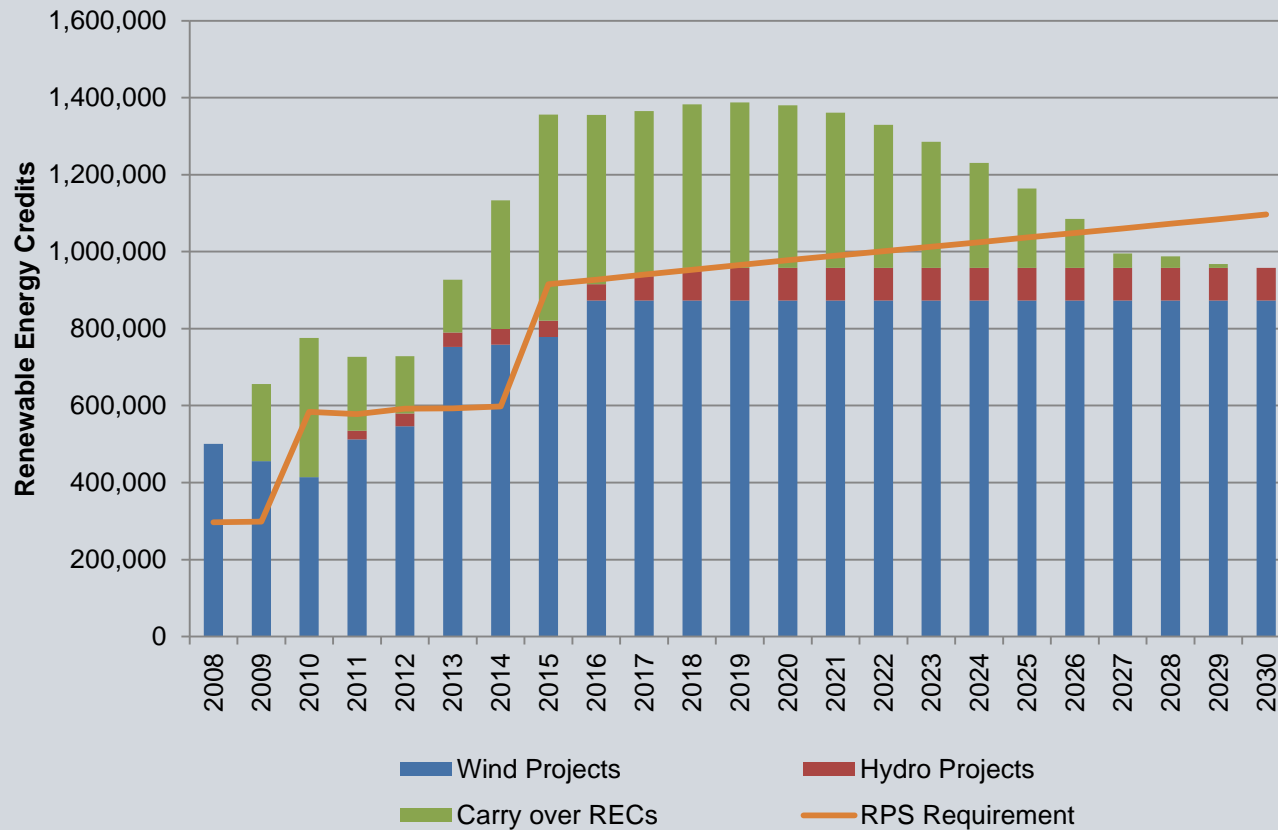
(1) Hebgen facility (0 MW net capacity) excluded from figures. All facilities are "run-of-river" dams except for Kerr and Mystic, which are "storage generation"

(2) As of June 2013

(3) The Confederated Salish and Kootenai Tribes have an option to purchase Kerr from September 2015 thru 2025



NorthWestern Energy RPS Compliance History & Forecast



Supply Portfolio Renewable Resources

Eligible Renewable Resources - Montana

Resource	Resource Type	Fuel	Installed Capacity MW	Estimated Annual Energy (MWh)
Judith Gap	PPA/REC	Wind	135	474,000
Gordon Butte Wind LLC	QF-1/CREP	Wind	9.6	41,000
Musselshell Wind Project LLC	QF-1/REC	Wind	10	26,000
Musselshell Wind Project Two LLC	QF-1/REC	Wind	10	31,000
Fairfield Wind LLC	QF-1/REC	Wind	10	32,000
Two Dot Wind Farm LLC	QF-1/REC	Wind	9.7	31,000
Spion Kop	Owned/REC	Wind	40	162,000
Greenfield Wind LLC*	PPA/REC	Wind	25	93,000
Turnbull Hydro LLC	PPA/CREP	Hydro	13	28,000
Flint Creek Hydroelectric LLC	QF-1/REC	Hydro	2	10,000
Lower South Fork LLC	QF-1/REC	Hydro	0.5	1,000
Sleeping Giant Power LLC*	QF-1/PPA	Hydro	8	43,000
			272.8	972,000
Community Renewable Energy Resources (in bold)			25.1	

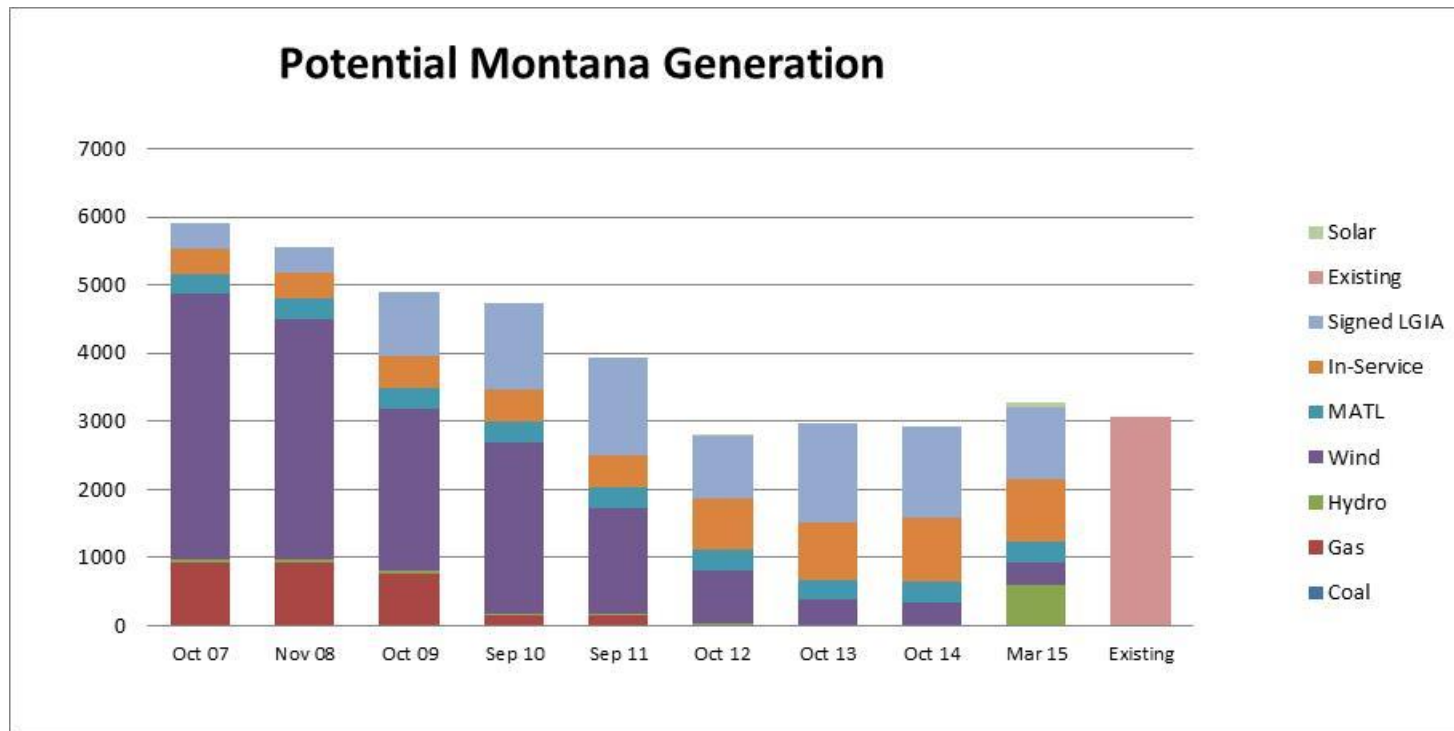
* Project under contract - construction not complete

NorthWestern needs an additional 43 MW of eligible CREP resource to meet installed capacity requirements for locally owned renewables.



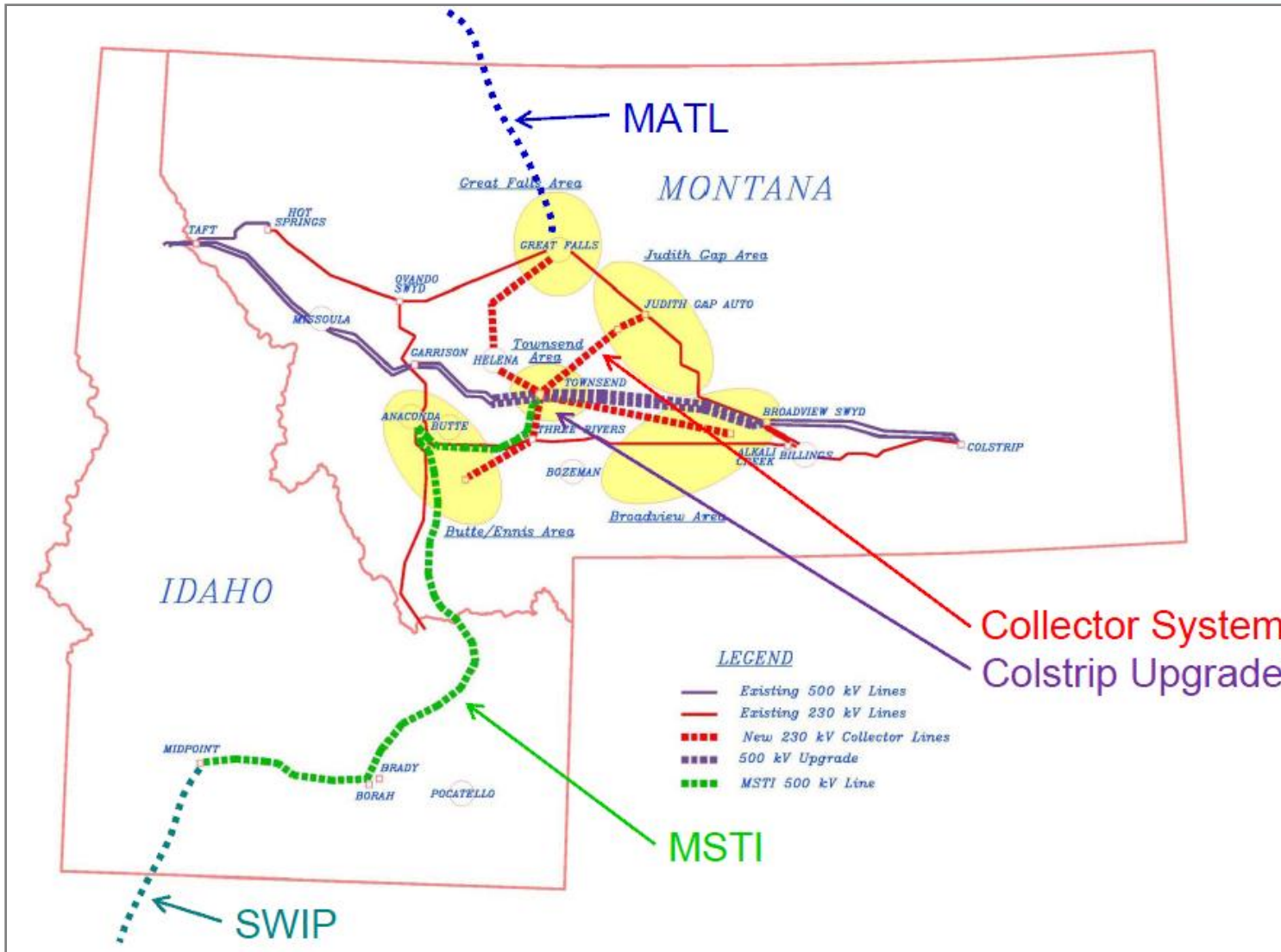
FERC Open Access Transmission Tariff (OATT) Generation Interconnection

- FERC Order 2003 and Order 2006 - Large and Small Generator Interconnection Procedures (LGIP/SGIP)
- **Boom and Bust...**

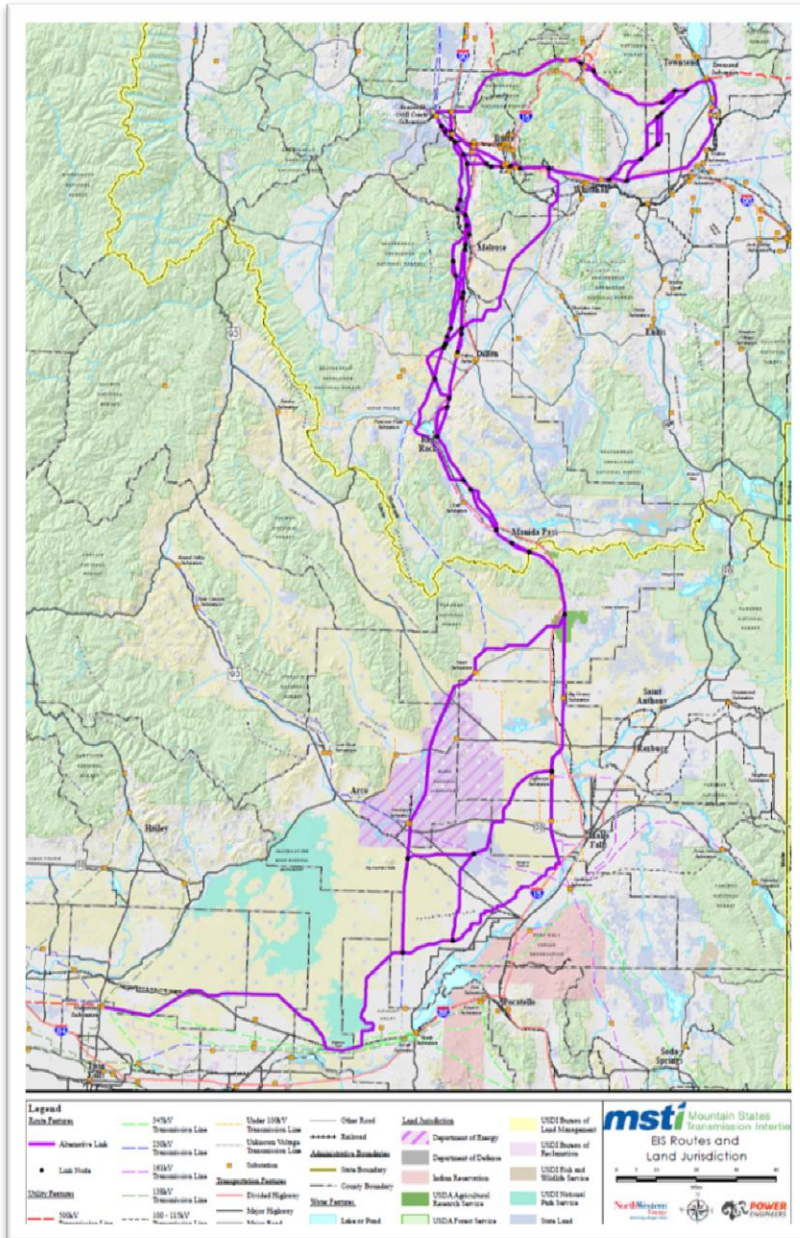




NorthWestern and Adjacent Transmission Projects



Mountain States Transmission Intertie (MSTI)



- 500 kV AC line from Townsend MT to Midpoint Substation near Twin Falls ID
- Approximately 450 miles depending on final route
 - 70+% on State and Federal Public Lands expected
- 1500 miles of alternatives reviewed
- Public Siting and Review began in 2007
- MFSA Application filed in July 2008
- 1500 MW Path Rating
- Project cost approximately \$1 billion



- The purpose of the MSTI Project was:
 - To provide a pathway for delivering renewable energy generated in Montana to areas throughout the western United States. MSTI will connect proposed new sources of clean energy, particularly wind power, to areas that need more electricity. MSTI is a response to customers' request for new transmission capacity
 - To strengthen the high-voltage transmission system in the western United States by helping to relieve current constraints and improving reliability
- The MSTI Project was being pursued because:
 - The Western US needs new sources of electricity
 - New sources of renewable energy produced in Montana need a pathway to communities that need the energy
 - Congestion on the western electric grid needs to be addressed



The Challenges of Transmission Development

- May 2006 to June 2008 – Pre-Regulatory Applications
 - Engineering and Environmental Studies
 - Over 35 Gov't Consultations and Public Scoping Meetings
- June 2008
 - Filed MFSA Application and Federal SF299 Applications
 - **BLM and MT DEQ Co-lead Agencies Responsible for the EIS**
 - 10 Different Cooperating Agencies
 - **Over 50 Various Permitting & Regulatory Authorities Required**
- June 2008 to August 2012 – **Public Outreach**
 - Over 20 Agency Sponsored Scoping Meetings
 - 120+ NWE Sponsored Public Meetings and Briefings



The Challenge of Transmission Development (cont'd)

- May 2010 – Jefferson County Montana filed suit against the MT DEQ for **'failure to adequately consult with the county'**
 - District Court ruled in favor of Jefferson County
 - MT DEQ appealed the decision
- October 2011 - Montana Supreme Court unanimously overturned the lower court's decision
 - **18 month Project Delay**
- January 2012 – Idaho State BLM Office decides an entirely new set of route alternatives are required to be studied to avoid Sage Grouse Habitat
- **50 months of analysis**
- **3 ADEIS documents**
- **No DEIS ever produced**



- MSTI Project Shelved

- In **August 2012** NWE called a “Time-Out” with the BLM, MDEQ and associated agencies and informed them to cease all activity on the EIS process, which eventually led to **NWE writing off the \$24 million** in development costs incurred for the Project.
- This decision was the result of:
 - The **ever changing scope**, schedule delays to complete the EIS and the significant cost of these delays to the Project
 - **Lack of cooperation** and coordination between agencies and with other entities – BLM, MDEQ, USFS, DOE, INL, USDA Sheep Experiment Station
 - **MFSA is outdated** and statute not compatible with today’s new transmission development world making it **difficult for NWE to demonstrate purpose and need and commercial viability**
 - **Sage grouse** issue created more delays and uncertainty with the decision on possible listing under the ESA not being made until 2015
 - Declining renewable energy market in MT- **energy developers unable to secure customers**, lack of national renewable energy standard, PTC uncertainty, restrictions on out of state renewables allowed by some western states

Policy Issues Affecting Transmission Development

- Items Below Impact Renewable Development As Well...
- Lack of coordinated and comprehensive regulatory process
 - Difficulty in satisfying competing federal, state, and local needs
 - Need centralized siting process for interstate transmission that serves regional and/or national interests
- State level market protection (at the time Project was abandoned)
 - Mainly CA – preference to in-state renewable projects for job growth
 - Restrictions placed on out of state wind even if lower cost
- Need federal policy support for ITC and PTC
 - Without clarity renewable initiatives don't make near term financial sense
 - Short horizon on Treasury grants and wind tax credits expire YE 2013
- Uncertainty increasing from state economic challenges, budget issues, political change
 - Potential impacts – reduction or delay of RPS standards, incentive phase outs
- Montana Issues
 - Eminent domain legislation (likely an on-going issue in Montana)



- **Marketing**

- Issues

1. Slower energy demand growth in the west
2. MT renewable energy developers unable to secure customers
3. Lack of national renewable energy standard, PTC uncertainty
4. Restrictions on out of state renewables allowed by some western states
5. During 2009 NWE conducted a Transmission Road Show to several western states to promote the value of Montana's wind resources and encourage development

•Siting, Permitting, and Environmental

Issues

1.BLM

- a.EIS process was continually delayed because of open ended scoping process, which pushed out the project schedule and increased costs
- b.Better cooperation needed** among other entities – MDEQ, USFS, DOE, INL, Sheep Experiment Station
- c.Better communication and coordination with other stakeholders. Idaho sage grouse example
- d. Many consultants and **agency resource staff with little electric transmission experience**

2.MDEQ

- a.MFSA is outdated and **statute not compatible with today's new transmission development world making it difficult for NWE to demonstrate purpose and need and commercial viability**
- b.Need better coordination of MFSA and MEPA
- c.Better coordination and cooperation needed with federal agencies
- d.Scoping process was open ended with new alternate routes and LRO's added after process was supposed to be done
- e.Jefferson County lawsuit against MDEQ concerning inadequate consultation delayed the project an additional 18 months even though the MDEQ eventually prevailed

3.Idaho

- a.Lack of state siting process - requires approval from all counties
- b.Sage grouse issue created more delays and uncertainty** with the decision on possible listing under the ESA not being made until 2015



•Public Outreach

Issues

1.Despite our attempt to inform the public about the MSTI Project through numerous open houses, meetings with elected officials, and presentation to community groups in all the impacted counties, **many people still criticized NWE and the agencies for not keeping them informed about the Project.**

2.The 3rd Party MSTI Review Project validated previous work done by NWE on permitting and siting and is generally viewed as a method that could be used by siting authorities to help bring community involvement into the siting process in a collaborative way.

3.Looking back, it may have been beneficial to have the MSTI Review Group involved earlier in the Project to assist in resolving stakeholder issues.

•Public Opposition

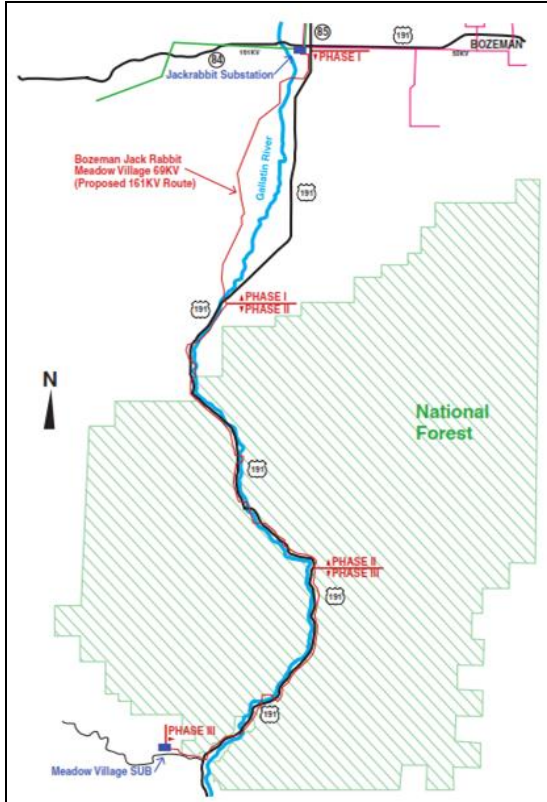
Issues

1. Several **landowner opposition groups were formed** in Montana including: Concerned Citizens Montana, MoveMSTI, Keep It Rural, Save Scenic Jefferson Valley Coalition, and Friends of Southwest Montana. In Idaho, the Power County MSTI Citizens Task Force was formed along with opposition groups in other counties.

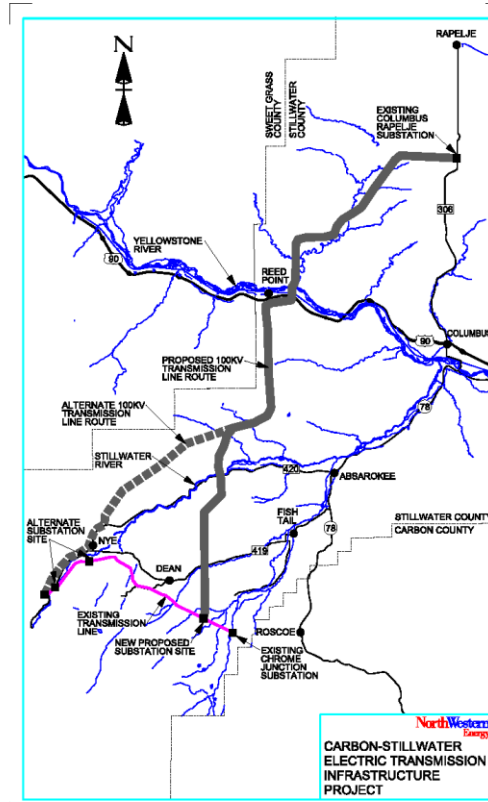
2. **Local residents impacted by the project felt that MSTI should be on public, not private land** and property rights should be respected with existing energy corridors utilized to minimize health and environmental impacts. Additional concerns included EMF's, view shed, noxious weeds, eminent domain, property values, and wildlife habitat.

Current NorthWestern Transmission Projects

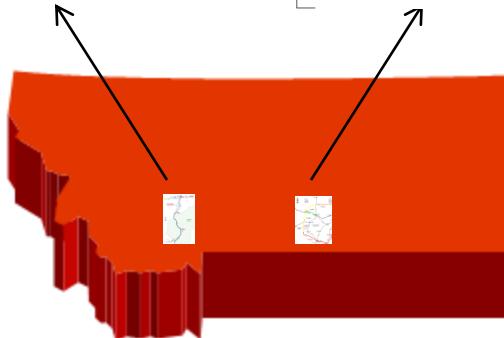
Jack Rabbit – Big Sky 161kV



Carbon - Stillwater 100kV



NorthWestern Energy continues to make significant investments to upgrade our transmission system to add capacity and improve reliability. Two such projects are: Jack Rabbit – Big Sky 161kV Line and Carbon - Stillwater 100kV line and substation upgrades. With a total capital investment of over \$90M, these are two of several projects in our maintenance capex program that are necessary to meet customer needs and load growth in our service territory.



- Project Budget / Schedule
 - Within our Montana Service Territory
 - Growing load in Big Sky, MT
 - 36 Miles in Length
 - 69 kV upgrade to 161 kV
 - Mostly in same ROW
 - Estimated Cost of Project - \$47 Million
 - Spent on Project thru 2014 - \$28.9 Million
 - Construction Started: Fall of 2012
 - Finish: Expected in the Late 2016

- Permitting
 - About 2/3 private, 1/3 Federal Lands
 - Gallatin National Forest (GNF) - Special Use Permit (SUP) – acquired on November 26, 2013. Started on SUP the first quarter of 2008.
 - While this process was ultimately successful, it took over 6 ½ years to complete
 - Strong relationship with GNF
 - Storm Water Pollution Prevention Plans (SWPPP) acquired for timber clearing and line construction.



Jack Rabbit – Big Sky 161kV





- NWE has provided Interconnection Service to Naturener's:
 - Glacier Wind 1 -100 MW – August 2008
 - Glacier Wind 2 –105 MW – July 2009
 - Rimrock – up to 300 MW (first temporarily directly to NWE to facilitate commissioning while MATL was completed – July 2012)

And

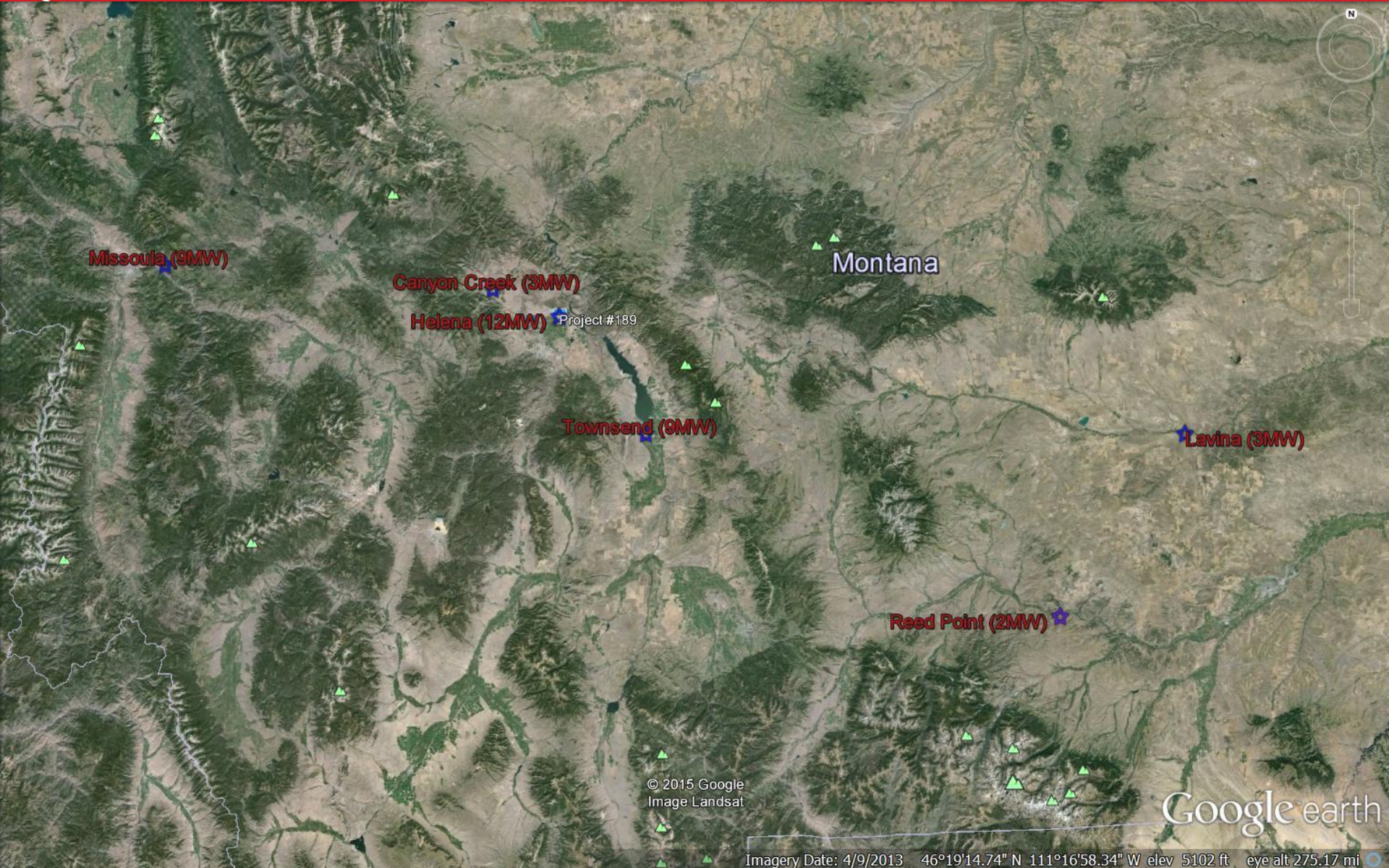
- The Montana Alberta Transmission Line (MATL) – energized in late 2013
 - Providing permanent interconnection for Rimrock



- NWE has provided Transmission Service to Naturener's:
 - Glacier Wind 1
 - Glacier Wind 2
 - Over 800,000 MWH of Transmission Service provided by NorthWestern in last 18 months
 - Rimrock – up to 300 MW (first temporary directly to NWE to facilitate commissioning while MATL was completed
- And
- The Montana Alberta Transmission Line (MATL)
 - Providing permanent interconnection for Rimrock
 - About 240,000 MWH of Transmission Service provided by NorthWestern in last 18 months



Potential Solar Development



© 2015 Google
Image Landsat

Imagery Date: 4/9/2013 46°19'14.74" N 111°16'58.34" W elev 5102 ft eye alt 275.17 mi

Google earth

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