

NORTHWESTERN ENERGY

2019 ELECTRICITY SUPPLY RESOURCE

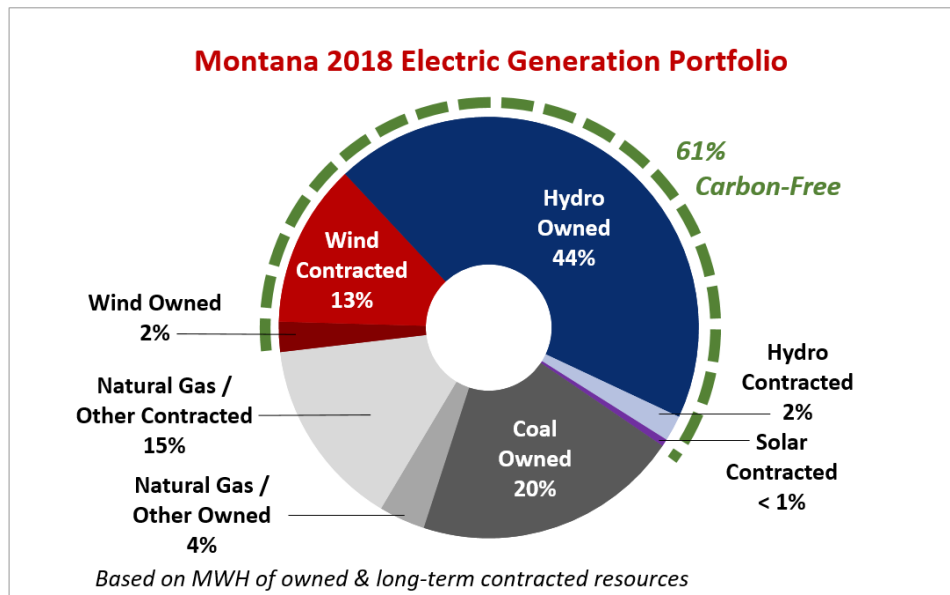
PROCUREMENT PLAN

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system is primarily a run-of-the-river system which provides a large part of the backbone of our generation portfolio, contributes significantly to our low cost carbon-free energy production, and provides system reliability for our customers. In 2018 NorthWestern’s energy portfolio produced 61% carbon free energy.

Figure 1-3. Percent of 2018 Electric Generation Portfolio

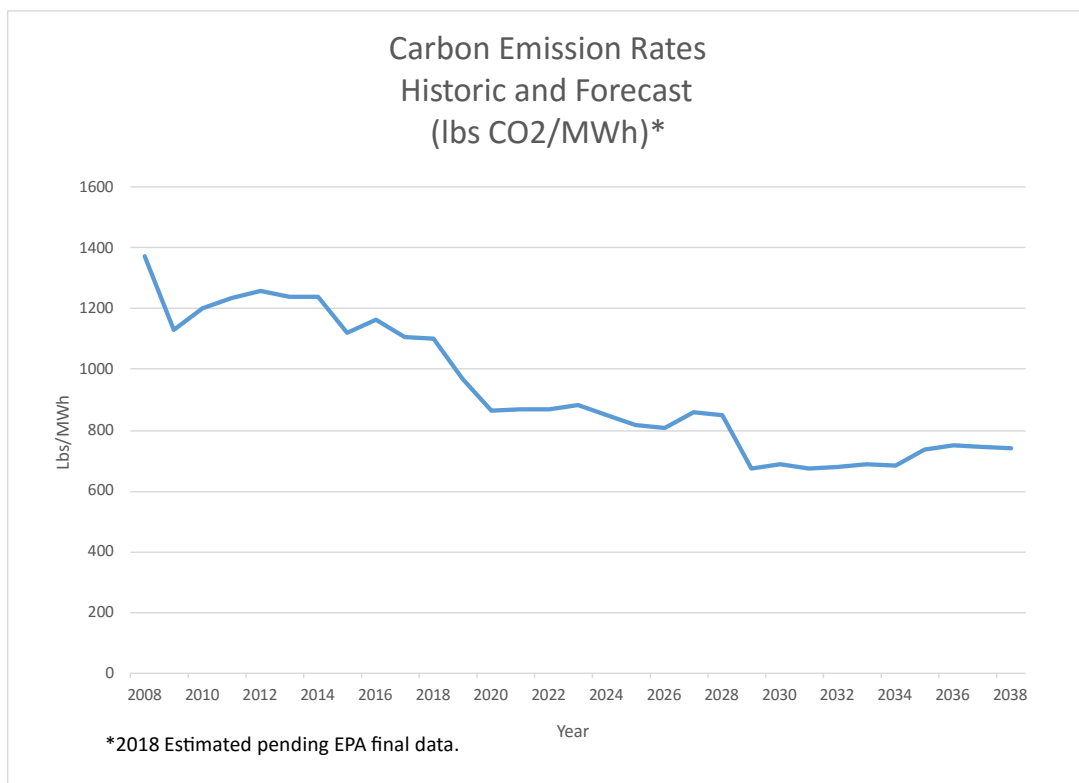


With the help of Montana’s generation portfolio, NorthWestern continues to be one of the leaders in the industry for carbon free portfolios. Carbon dioxide emissions associated with NorthWestern’s Montana portfolio have been significantly less than nearly all of our peer utilities.

From 2008 to 2018, carbon dioxide emissions associated with NorthWestern’s resource portfolio have declined, and they are forecast to continue to decline. Resource opportunities, technology improvements, and technology cost reductions could also reduce

emissions. As shown in Figure 1-4, carbon emissions associated with the Base portfolio decline over the term of the plan. Significant declines occur when Colstrip Energy Limited Partnership (CELP) and Yellowstone Energy Limited Partnership (YELP) leave the portfolio.² Together, CELP and YELP provide about 11% of the energy in our portfolio but contribute about 35% of the carbon dioxide emissions.

Figure 1-4. Historic and Future Carbon Emissions



From 2008 to 2018 carbon dioxide emissions associated with NorthWestern’s resource portfolio have declined, and are forecast to continue to decline (Base portfolio shown above).

² CELP is a 41.5 MW waste coal-fired Qualifying Facility with a contract that expires 6/30/2024. YELP is a 65 MW petroleum coke-fired Qualifying Facility with a contract that expires 12/31/2028.

Table 4-1. NorthWestern’s Resource Portfolio

Portfolio Resources	Facility Capacity (MW)	Expiration (Date)	Peak Load Contribution (MW)	Reg UP (MW)	Reg Down (MW)	Spin (MW)	Non-spin (MW)	INC (MW)	DEC (MW)
Hydro Generation									
Thompson Falls *	94.00	Rate Based	43.00	Varies	Varies	0 to 17	0	0	0
Cochrane*	62.00	Rate Based	25.00	Varies	Varies	1 to 6	0	0 - 18	-6 to -29
Ryan*	68.00	Rate Based	40.00	Varies	Varies	0	0	2 - 10	-26 to -36
Rainbow*	64.00	Rate Based	33.70	0	0	5 to 10	0	0	0
Holter*	53.00	Rate Based	32.00	0	0	0	0	0	0
Morony*	49.00	Rate Based	24.00	0	0	0	0	0	0
Black Eagle*	21.00	Rate Based	12.00	0	0	0	0	0	0
Hauser*	17.00	Rate Based	14.00	0	0	0	0	0	0
Turnbull Hydro LLC	13.00	12/31/2032	0.00	0	0	0	0	0	0
Mystic*	12.00	Rate Based	5.00	Varies	Varies	0 to 7	0	0	0
State of MT DNRC (Broadwater Dam)	10.00	6/30/2024	2.80	0	0	0	0	0	0
Madison*	8.00	Rate Based	6.00	0	0	0	0	0	0
Small Hydro Aggregate (See Below)	13.92	Various	1.70	0	0	0	0	0	0
Tiber Montana LLC	7.50	6/1/2024							
Flint Creek Hydroelectric LLC	2.00	1/16/2037							
Hydrodynamics Inc (South Dry Creek)	1.20	6/30/2021							
Wisconsin Creek LTD LC	0.55	7/1/2019							
Boulder Hydro Limited Partnership	0.51	6/30/2022							
Lower South Fork LLC	0.46	1/16/2037							
Ross Creek Hydro LC	0.45	6/30/2032							
Gerald Ohs (Pony Generating Station)	0.40	12/10/2020							
Allen R. Carter (Pine Creek)	0.30	6/30/2024							
Donald Fred Jenni (Hanover Hydro)	0.24	6/30/2034							
Hydrodynamics Inc (Strawberry Creek)	0.19	6/30/2023							
James Walker Sievers (Cascade Creek)	0.07	10/1/2019							
James Walker Sievers (Barney Creek)	0.06	11/14/2019							
Natural Gas Generation									
Basin Creek	52.00	12/31/2034	49.40	0	0	0	52	52	-52
DGGS 1	50.00	Rate Based	47.50	43	43	43	50	50	-50
DGGS 2	50.00	Rate Based	47.50	43	43	43	50	50	-50
DGGS 3	50.00	Rate Based	47.50	43	43	43	50	50	-50
Thermal/Coal Generation									
Colstrip Unit 4	222.00	Rate Based	206.46	0	0	24	24	100	-100
Yellowstone Energy Limited Partnership (BGI)	52.00	12/31/2028	48.36	0	0	0	0	0	0
Colstrip Energy Limited Partnership	35.00	6/30/2024	32.55	0	0	0	0	0	0
Wind Generation									
Judith Gap Energy LLC	135.00	12/31/2026	8.20	0	0	0	0	0	-135
Stillwater Wind LLC (WKN)	80.00	1/11/2043	TBD	0	0	0	0	0	-80
South Peak Wind LLC	80.00	Est 12/1/2034	TBD	0	0	0	0	0	-80
Crazy Mountain Wind LLC	79.50	Est 1/1/2045	TBD	0	0	0	0	0	-79.5
Spion Kop Wind	40.00	Rate Based	1.20	0	0	0	0	0	-40
Greenfield Wind LLC	25.00	11/1/2041	2.20	0	0	0	0	0	-25
Big Timber Wind LLC (Greycliff)	25.00	4/1/2043	TBD	0	0	0	0	0	-25
Fairfield Wind LLC (Greenbacker)	10.00	12/31/2033	0.10	0	0	0	0	0	0
Musselshell Wind Project LLC	10.00	3/24/2036	0.20	0	0	0	0	0	-10
Musselshell Wind Project Two LLC	10.00	3/24/2036	0.30	0	0	0	0	0	-10
Two Dot Wind Farm LLC	11.28	Rate Based	0.10	0	0	0	0	0	-11.28
Gordon Butte Wind LLC	9.60	3/21/2036	0.40	0	0	0	0	0	-9.6
Cycle Horseshoe Bend Wind LLC	9.00	8/31/2035	0.00	0	0	0	0	0	0
71 Ranch LP	2.70	1/1/2024	TBD	0	0	0	0	0	-2.7
DA Wind Investors LLC	2.70	1/1/2024	TBD	0	0	0	0	0	-2.7
Oversight Resources LLC	2.70	1/1/2024	TBD	0	0	0	0	0	-2.7
Small Wind Aggregate (See Below)	5.26	Various	0.00	0	0	0	0	0	0
Two Dot Wind LLC (Martinsdale Colony South)	2.00	4/23/2028							
Two Dot Wind LLC (Broadview East Wind)	1.60	1/11/2043							
Two Dot Wind LLC (Martinsdale Colony)	0.75	4/23/2028							
Two Dot Wind LLC (Sheep Valley Ranch)	0.46	4/23/2028							
Two Dot Wind LLC (Moe Wind)	0.45	4/23/2028							
Solar Generation									
MTSun LLC (MPSC Final Order 7535a)	80.00	Est 1/1/2030	TBD	0	0	0	0	0	0
Green Meadow Solar LLC	3.00	4/1/2042	TBD	0	0	0	0	0	3
South Mills Solar 1 LLC	3.00	4/1/2042	TBD	0	0	0	0	0	3
Black Eagle Solar LLC	3.00	10/1/2042	TBD	0	0	0	0	0	3
Great Divide Solar LLC	3.00	10/1/2042	TBD	0	0	0	0	0	3
Magpie Solar LLC	3.00	10/1/2042	TBD	0	0	0	0	0	3
River Bend Solar LLC	2.00	4/1/2042	TBD	0	0	0	0	0	2

TBD = To be determined
Note: * Updated from 2015 Plan.