

**Northwestern Energy 2015 RPP**  
**Projected Wind Costs**  
**Base Case Integration Rate: Updated QF1 WI Rate**

**Spion Kop**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 2	Operating Reserves	Wind Cost
2016	\$53.78	(\$0.65)	\$0.71	\$0.33	\$54.17
2017	\$53.78	(\$0.90)	\$0.71	\$0.34	\$53.93
2018	\$53.78	(\$1.15)	\$0.71	\$0.34	\$53.68
2019	\$53.78	(\$1.40)	\$0.71	\$0.35	\$53.44
2020	\$53.78	(\$1.65)	\$0.71	\$0.36	\$53.20
2021	\$53.78	(\$1.90)	\$0.71	\$0.36	\$52.95
2022	\$53.78	(\$2.15)	\$0.71	\$0.37	\$52.71
2023	\$53.78	(\$2.40)	\$0.71	\$0.38	\$52.47
2024	\$53.78	(\$2.65)	\$0.71	\$0.39	\$52.23
2025	\$53.78	(\$2.90)	\$0.71	\$0.39	\$51.98
2026	\$53.78	(\$3.15)	\$0.71	\$0.40	\$51.74
2027	\$53.78	(\$3.40)	\$0.71	\$0.41	\$51.50
2028	\$53.78	(\$3.65)	\$0.71	\$0.42	\$51.26
2029	\$53.78	(\$3.90)	\$0.71	\$0.43	\$51.02
2030	\$53.78	(\$4.15)	\$0.71	\$0.44	\$50.78
2031	\$53.78	(\$4.40)	\$0.71	\$0.44	\$50.53
2032	\$53.78	(\$4.65)	\$0.71	\$0.45	\$50.29
2033	\$53.78	(\$4.90)	\$0.71	\$0.46	\$50.05
2034	\$53.78	(\$5.15)	\$0.71	\$0.47	\$49.81
2035	\$53.78	(\$5.40)	\$0.71	\$0.48	\$49.57
NPV	\$568.42	(\$26.18)	\$7.50	\$4.06	\$553.80
Levelized	\$53.78	(\$2.48)	\$0.71	\$0.38	\$52.40

**Gordon Butte**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 2	Operating Reserves	Wind Cost
2016	\$69.21	(\$0.65)	\$0.71	\$0.33	\$69.60
2017	\$69.21	(\$0.90)	\$0.71	\$0.34	\$69.36
2018	\$69.21	(\$1.15)	\$0.71	\$0.34	\$69.11
2019	\$69.21	(\$1.40)	\$0.71	\$0.35	\$68.87
2020	\$69.21	(\$1.65)	\$0.71	\$0.36	\$68.63
2021	\$69.21	(\$1.90)	\$0.71	\$0.36	\$68.38
2022	\$69.21	(\$2.15)	\$0.71	\$0.37	\$68.14
2023	\$69.21	(\$2.40)	\$0.71	\$0.38	\$67.90
2024	\$69.21	(\$2.65)	\$0.71	\$0.39	\$67.66
2025	\$69.21	(\$2.90)	\$0.71	\$0.39	\$67.41
2026	\$69.21	(\$3.15)	\$0.71	\$0.40	\$67.17
2027	\$69.21	(\$3.40)	\$0.71	\$0.41	\$66.93
2028	\$69.21	(\$3.65)	\$0.71	\$0.42	\$66.69
2029	\$69.21	(\$3.90)	\$0.71	\$0.43	\$66.45
2030	\$69.21	(\$4.15)	\$0.71	\$0.44	\$66.21
2031	\$69.21	(\$4.40)	\$0.71	\$0.44	\$65.96
2032	\$69.21	(\$4.65)	\$0.71	\$0.45	\$65.72
2033	\$69.21	(\$4.90)	\$0.71	\$0.46	\$65.48
2034	\$69.21	(\$5.15)	\$0.71	\$0.47	\$65.24
2035	\$69.21	(\$5.40)	\$0.71	\$0.48	\$65.00
NPV	\$731.51	(\$26.18)	\$7.50	\$4.06	\$716.89
Levelized	\$69.21	(\$2.48)	\$0.71	\$0.38	\$67.83

**Two Dot Wind**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 1	Operating Reserves	Wind Cost
2016	\$59.00	(\$0.65)	\$1.92	\$0.33	\$60.60
2017	\$59.00	(\$0.90)	\$1.92	\$0.34	\$60.36
2018	\$59.00	(\$1.15)	\$1.92	\$0.34	\$60.11
2019	\$59.00	(\$1.40)	\$1.92	\$0.35	\$59.87
2020	\$59.00	(\$1.65)	\$1.92	\$0.36	\$59.63
2021	\$59.00	(\$1.90)	\$1.92	\$0.36	\$59.38
2022	\$59.00	(\$2.15)	\$1.92	\$0.37	\$59.14
2023	\$59.00	(\$2.40)	\$1.92	\$0.38	\$58.90
2024	\$59.00	(\$2.65)	\$1.92	\$0.39	\$58.66
2025	\$59.00	(\$2.90)	\$1.92	\$0.39	\$58.41
2026	\$59.00	(\$3.15)	\$1.92	\$0.40	\$58.17
2027	\$59.00	(\$3.40)	\$1.92	\$0.41	\$57.93
2028	\$59.00	(\$3.65)	\$1.92	\$0.42	\$57.69
2029	\$59.00	(\$3.90)	\$1.92	\$0.43	\$57.45
2030	\$59.00	(\$4.15)	\$1.92	\$0.44	\$57.21
2031	\$59.00	(\$4.40)	\$1.92	\$0.44	\$56.96
2032	\$59.00	(\$4.65)	\$1.92	\$0.45	\$56.72
2033	\$59.00	(\$4.90)	\$1.92	\$0.46	\$56.48
2034	\$59.00	(\$5.15)	\$1.92	\$0.47	\$56.24
2035	\$59.00	(\$5.40)	\$1.92	\$0.48	\$56.00
NPV	\$623.59	(\$26.18)	\$20.29	\$4.06	\$621.76
Levelized	\$59.00	(\$2.48)	\$1.92	\$0.38	\$58.83

**Musselshell**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 1	Operating Reserves	Wind Cost
2016	\$69.21	(\$0.65)	\$1.92	\$0.33	\$70.81
2017	\$69.21	(\$0.90)	\$1.92	\$0.34	\$70.57
2018	\$69.21	(\$1.15)	\$1.92	\$0.34	\$70.32
2019	\$69.21	(\$1.40)	\$1.92	\$0.35	\$70.08
2020	\$69.21	(\$1.65)	\$1.92	\$0.36	\$69.84
2021	\$69.21	(\$1.90)	\$1.92	\$0.36	\$69.59
2022	\$69.21	(\$2.15)	\$1.92	\$0.37	\$69.35
2023	\$69.21	(\$2.40)	\$1.92	\$0.38	\$69.11
2024	\$69.21	(\$2.65)	\$1.92	\$0.39	\$68.87
2025	\$69.21	(\$2.90)	\$1.92	\$0.39	\$68.62
2026	\$69.21	(\$3.15)	\$1.92	\$0.40	\$68.38
2027	\$69.21	(\$3.40)	\$1.92	\$0.41	\$68.14
2028	\$69.21	(\$3.65)	\$1.92	\$0.42	\$67.90
2029	\$69.21	(\$3.90)	\$1.92	\$0.43	\$67.66
2030	\$69.21	(\$4.15)	\$1.92	\$0.44	\$67.42
2031	\$69.21	(\$4.40)	\$1.92	\$0.44	\$67.17
2032	\$69.21	(\$4.65)	\$1.92	\$0.45	\$66.93
2033	\$69.21	(\$4.90)	\$1.92	\$0.46	\$66.69
2034	\$69.21	(\$5.15)	\$1.92	\$0.47	\$66.45
2035	\$69.21	(\$5.40)	\$1.92	\$0.48	\$66.21
NPV	\$731.51	(\$26.18)	\$20.29	\$4.06	\$729.67
Levelized	\$69.21	(\$2.48)	\$1.92	\$0.38	\$69.04

**Musselshell 2**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 1	Operating Reserves	Wind Cost
2016	\$69.21	(\$0.65)	\$1.92	\$0.33	\$70.81
2017	\$69.21	(\$0.90)	\$1.92	\$0.34	\$70.57
2018	\$69.21	(\$1.15)	\$1.92	\$0.34	\$70.32
2019	\$69.21	(\$1.40)	\$1.92	\$0.35	\$70.08
2020	\$69.21	(\$1.65)	\$1.92	\$0.36	\$69.84
2021	\$69.21	(\$1.90)	\$1.92	\$0.36	\$69.59
2022	\$69.21	(\$2.15)	\$1.92	\$0.37	\$69.35
2023	\$69.21	(\$2.40)	\$1.92	\$0.38	\$69.11
2024	\$69.21	(\$2.65)	\$1.92	\$0.39	\$68.87
2025	\$69.21	(\$2.90)	\$1.92	\$0.39	\$68.62
2026	\$69.21	(\$3.15)	\$1.92	\$0.40	\$68.38
2027	\$69.21	(\$3.40)	\$1.92	\$0.41	\$68.14
2028	\$69.21	(\$3.65)	\$1.92	\$0.42	\$67.90
2029	\$69.21	(\$3.90)	\$1.92	\$0.43	\$67.66
2030	\$69.21	(\$4.15)	\$1.92	\$0.44	\$67.42
2031	\$69.21	(\$4.40)	\$1.92	\$0.44	\$67.17
2032	\$69.21	(\$4.65)	\$1.92	\$0.45	\$66.93
2033	\$69.21	(\$4.90)	\$1.92	\$0.46	\$66.69
2034	\$69.21	(\$5.15)	\$1.92	\$0.47	\$66.45
2035	\$69.21	(\$5.40)	\$1.92	\$0.48	\$66.21
NPV	\$731.51	(\$26.18)	\$20.29	\$4.06	\$729.67
Levelized	\$69.21	(\$2.48)	\$1.92	\$0.38	\$69.04

**Fairfield Wind**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 3	Operating Reserves	Wind Cost
2016	\$75.76	(\$0.65)	\$0.26	\$0.33	\$75.70
2017	\$75.76	(\$0.90)	\$0.26	\$0.34	\$75.46
2018	\$75.76	(\$1.15)	\$0.26	\$0.34	\$75.21
2019	\$75.76	(\$1.40)	\$0.26	\$0.35	\$74.97
2020	\$75.76	(\$1.65)	\$0.26	\$0.36	\$74.73
2021	\$75.76	(\$1.90)	\$0.26	\$0.36	\$74.48
2022	\$75.76	(\$2.15)	\$0.26	\$0.37	\$74.24
2023	\$75.76	(\$2.40)	\$0.26	\$0.38	\$74.00
2024	\$75.76	(\$2.65)	\$0.26	\$0.39	\$73.76
2025	\$75.76	(\$2.90)	\$0.26	\$0.39	\$73.51
2026	\$75.76	(\$3.15)	\$0.26	\$0.40	\$73.27
2027	\$75.76	(\$3.40)	\$0.26	\$0.41	\$73.03
2028	\$75.76	(\$3.65)	\$0.26	\$0.42	\$72.79
2029	\$75.76	(\$3.90)	\$0.26	\$0.43	\$72.55
2030	\$75.76	(\$4.15)	\$0.26	\$0.44	\$72.31
2031	\$75.76	(\$4.40)	\$0.26	\$0.44	\$72.06
2032	\$75.76	(\$4.65)	\$0.26	\$0.45	\$71.82
2033	\$75.76	(\$4.90)	\$0.26	\$0.46	\$71.58
2034	\$75.76	(\$5.15)	\$0.26	\$0.47	\$71.34
2035	\$75.76	(\$5.40)	\$0.26	\$0.48	\$71.10
NPV	\$800.73	(\$26.18)	\$2.75	\$4.06	\$781.36
Levelized	\$75.76	(\$2.48)	\$0.26	\$0.38	\$73.93

**Northwestern Energy 2015 RPP  
 Projected Wind Costs  
 Base Case Integration Rate: Updated QF1 WI Rate**

**Generic QF Zone 1**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 1	Operating Reserves	Wind Cost
2016	\$54.39		\$7.12	\$0.33	\$61.84
2017	\$54.39		\$7.12	\$0.34	\$61.84
2018	\$54.39		\$7.12	\$0.34	\$61.85
2019	\$54.39		\$7.12	\$0.35	\$61.86
2020	\$54.39		\$7.12	\$0.36	\$61.86
2021	\$54.39		\$7.12	\$0.36	\$61.87
2022	\$54.39		\$7.12	\$0.37	\$61.88
2023	\$54.39		\$7.12	\$0.38	\$61.89
2024	\$54.39		\$7.12	\$0.39	\$61.89
2025	\$54.39		\$7.12	\$0.39	\$61.90
2026	\$54.39		\$7.12	\$0.40	\$61.91
2027	\$54.39		\$7.12	\$0.41	\$61.92
2028	\$54.39		\$7.12	\$0.42	\$61.93
2029	\$54.39		\$7.12	\$0.43	\$61.93
2030	\$54.39		\$7.12	\$0.44	\$61.94
2031	\$54.39		\$7.12	\$0.44	\$61.95
2032	\$54.39		\$7.12	\$0.45	\$61.96
2033	\$54.39		\$7.12	\$0.46	\$61.97
2034	\$54.39		\$7.12	\$0.47	\$61.98
2035	\$54.39		\$7.12	\$0.48	\$61.99
<b>NPV</b>	\$574.84	\$0.00	\$75.26	\$4.06	\$654.15
<b>Levelized</b>	\$54.39	\$0.00	\$7.12	\$0.38	\$61.89

**Generic QF Zone 2**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 2	Operating Reserves	Wind Cost
2016	\$54.39		\$2.62	\$0.33	\$57.34
2017	\$54.39		\$2.62	\$0.34	\$57.35
2018	\$54.39		\$2.62	\$0.34	\$57.35
2019	\$54.39		\$2.62	\$0.35	\$57.36
2020	\$54.39		\$2.62	\$0.36	\$57.37
2021	\$54.39		\$2.62	\$0.36	\$57.37
2022	\$54.39		\$2.62	\$0.37	\$57.38
2023	\$54.39		\$2.62	\$0.38	\$57.39
2024	\$54.39		\$2.62	\$0.39	\$57.40
2025	\$54.39		\$2.62	\$0.39	\$57.40
2026	\$54.39		\$2.62	\$0.40	\$57.41
2027	\$54.39		\$2.62	\$0.41	\$57.42
2028	\$54.39		\$2.62	\$0.42	\$57.43
2029	\$54.39		\$2.62	\$0.43	\$57.44
2030	\$54.39		\$2.62	\$0.44	\$57.45
2031	\$54.39		\$2.62	\$0.44	\$57.45
2032	\$54.39		\$2.62	\$0.45	\$57.46
2033	\$54.39		\$2.62	\$0.46	\$57.47
2034	\$54.39		\$2.62	\$0.47	\$57.48
2035	\$54.39		\$2.62	\$0.48	\$57.49
<b>NPV</b>	\$574.84	\$0.00	\$27.73	\$4.06	\$606.62
<b>Levelized</b>	\$54.39	\$0.00	\$2.62	\$0.38	\$57.39

**Generic QF Zone 3**

Discount Rate 7.03%  
 Escalation Rate 2.00%

Year	Energy + RECs	RECs	QF1 WI Zone 3	Operating Reserves	Wind Cost
2016	\$54.39		\$0.96	\$0.33	\$55.67
2017	\$54.39		\$0.96	\$0.34	\$55.68
2018	\$54.39		\$0.96	\$0.34	\$55.69
2019	\$54.39		\$0.96	\$0.35	\$55.69
2020	\$54.39		\$0.96	\$0.36	\$55.70
2021	\$54.39		\$0.96	\$0.36	\$55.71
2022	\$54.39		\$0.96	\$0.37	\$55.71
2023	\$54.39		\$0.96	\$0.38	\$55.72
2024	\$54.39		\$0.96	\$0.39	\$55.73
2025	\$54.39		\$0.96	\$0.39	\$55.74
2026	\$54.39		\$0.96	\$0.40	\$55.75
2027	\$54.39		\$0.96	\$0.41	\$55.75
2028	\$54.39		\$0.96	\$0.42	\$55.76
2029	\$54.39		\$0.96	\$0.43	\$55.77
2030	\$54.39		\$0.96	\$0.44	\$55.78
2031	\$54.39		\$0.96	\$0.44	\$55.79
2032	\$54.39		\$0.96	\$0.45	\$55.80
2033	\$54.39		\$0.96	\$0.46	\$55.80
2034	\$54.39		\$0.96	\$0.47	\$55.81
2035	\$54.39		\$0.96	\$0.48	\$55.82
<b>NPV</b>	\$574.84	\$0.00	\$10.10	\$4.06	\$588.99
<b>Levelized</b>	\$54.39	\$0.00	\$0.96	\$0.38	\$55.73