Wind Pricing Model Instructions

Solve model by inputting Base Year Price (Assumptions tab, cell H33) on Assumptions tab that yields the target IRR (Assumptions tab, cell H37).
Evaluate debt service coverage ratios to ensure reasonable; reduce Debt percentage (Assumptions tab, cell C29) if minimum or average coverage ratios are not sufficient.
Property tax is based on EBITDA and affects EBITDA. Property tax values from Row 36 on the Cash Flow tab (make sure to line up with appropriate year) need to be iterated by copying (Copy Special, Values) into Row30 (Property Tax line item) until the numbers in the two rows are equal, using year 20 as a guide.

Wind Pricing Model

Assumptions:			Notes:
General Inflation Factor (revenue and expenses)	2.50%		
% of Base Price Escalating @ Infl.	0%		
Uses of Funds			
Debt Reserve	109,500		
Maint. Reserve	30,000		
Working Capital	14,749		
Total Working Capital & Reverses	154,249		
Financing Costs & IDC	155,093		3% of approximate debt amount + $50K + (5%/12 months * Installation Costs * 2 monhts = IDC)
Installation Cost (Hard Costs)	4,630,000		
Total Uses of Funds	4,939,342		
Total Project Cost ($/kW)	3,293		
Sources of Funds			
Grants	0		
Debt	2,123,917		
Equity	2,815,425		
Total Sources of Funds	4,939,342		
Grants:			
State and Federal Incentives	0		
Net Value of Grants	0		
Asset Life (Years)	20		
Loan Life	18		
Tax Rates:			
Federal Income Tax	35.0%		
State Income Tax	8.5%		
Income tax rate	40.53%		
Capital structure:			
Debt	43.00%		
Equity	57.00%		
Debt costs	7.50%		
Weighted Average Cost of Capital	10.14%	12.13%	
Tax Rates and Incentives:			
Investment Tax Credit Discount (% of Hard Costs	95.0%		
Income Tax Basis Adjustment Factor	50.0%		
Federal Income Tax Credit			
ITC Rate	30.0%		
ITC Realization Period (years)	1		
ITC Amount			
Total Amount	1,319,550		
Percent Realized	100.0%		
Total Amount Realized	1,319,550		
State Income Tax Credit			
ITC Rate			
Amount of Federal ITC Allowed	24.00%		
Effective State ITC Rate	7.20%		
ITC Realization Period (years)	2		
ITC Amount			
Total Amount	205,850		
Percent Realized	50.0%		

Assumptions:		Notes:
Operating Inputs:		
Generator Capacity (MW)	1.5	
Energy Production:		
Gross Project Capacity Factor	25%	
Project Availability Factor	100.00%	
Loss Factor/Other Adjustments	0.00%	
Net Capacity Factor	25.0%	
Output in MWhs	3,285	
Annual Output Degradation	0.00%	
Inverter Replacement (total value year 10)	0	
Annual Operating Expenses:		
Maintenance Cost	See Schedule Below	
Labor		
Hours of Labor	0	
Labor Rate ($/hour)	0	
Payroll Overhead Adder	0.0%	
Property Tax		
Amount	EBITDA x WACC x Tax Rate	
Property Tax Rate	1.78%	
Property Tax Depreciation rate	4.00%	
Insurance	0.40%	
Other Operational Expenses (lease)	4,500	
Wheeling Charges	0	
FERC Charges	0	
ISO-NE Charges	0	
Revenue Assumptions:		
RECs:		
REC and Carbon Value ($/MWh)	0.00	
REC inflation Factor	2.00%	
Other Revenues (increases with inflation)	0	
Base Year Energy Price ($/MWh)	143.25	
Return Metrics:		
Average Debt Service Coverage Ratio	1.62	
Minimum Debt Service Coverage Ratio	1.56	
Internal Rate of Return	12.13%	
Maintenance Schedule		
Years 1-5	57,240	
Years 6 (escalates at inflation)	50,000	

Wind Pricing Model

Operating Year			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Calendar Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Generation (MWh)			3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285	3,285
Revenue:																						
Standard Offer Price ($/MWh)																						
Fixed Price Component		100%	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25
Escalating Price Component		0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Standard Offer Price			143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25	143.25
Revenues From Energy Production			470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576	470,576
RECs																						
Market Value of RECs ($/MWh)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Change Market Value of REC				2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Revenues from RECs			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Revenues			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest Revenue			1,805	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	2,242	873	436
Total Revenue			472,381	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	474,187	472,818	471,449	471,013
Expenses:																						
O & M costs			57,240	57,240	57,240	57,240	57,240	50,000	51,250	52,531	53,845	55,191	56,570	57,985	59,434	60,920	62,443	64,004	65,604	67,244	68,926	70,649
Payroll			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Payroll Overhead			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheeling Charges			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERC Charges			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ISO-NE Charges			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Operational Expenses			4,500	4,613	4,728	4,846	4,967	5,091	5,219	5,349	5,483	5,620	5,760	5,904	6,052	6,203	6,358	6,517	6,680	6,847	7,018	7,194
Insurance			18,520	18,983	19,458	19,944	20,443	20,954	21,478	22,014	22,565	23,129	23,707	24,300	24,907	25,530	26,168	26,822	27,493	28,180	28,885	29,607
Property tax		79	37,731	37,127	36,533	35,949	35,373	34,807	34,251	33,703	33,163	32,633	32,111	31,597	31,091	30,594	30,104	29,623	29,149	28,682	28,223	27,772
Total			117,991	117,963	117,959	117,979	118,023	110,852	112,197	113,597	115,055	116,572	118,149	119,786	121,485	123,247	125,074	126,967	128,926	130,954	133,052	135,221
EBITDA			354,391	356,224	356,228	356,208	356,163	363,334	361,990	360,589	359,131	357,615	356,038	354,401	352,702	350,939	349,113	347,220	345,260	341,864	338,397	335,791
Property Tax Estimate:		NPV																				
EBITA x Capitalization Rate		2,119,712																				
Property Tax Rate	1.78%		37,731	37,127	36,533	35,949	35,373	34,807	34,251	33,703	33,163	32,633	32,111	31,597	31,091	30,594	30,104	29,623	29,149	28,682	28,223	27,772
Property Tax Escalatio	2.5%																					
Property Tax Deprecia	4.0%																					

IRR	12.13%	Output
Price	$143.25	Input
Debt %	43.00%	Input
Avg DSCR	1.62	Output
Min DSCR	1.56	Output
% of Price Escalating	0%	Input
Min Annual Cash Flow	1,603	Output

Debt Repayment:																						
Loan Balance		2,123,917	2,064,386	2,000,390	1,931,594	1,857,639	1,778,137	1,692,672	1,600,797	1,502,032	1,395,860	1,281,724	1,159,029	1,027,131	885,341	732,916	569,060	392,914	203,558	(0)	(0)	(0)
Interest	7.50%		(159,294)	(154,829)	(150,029)	(144,870)	(139,323)	(133,360)	(126,950)	(120,060)	(112,652)	(104,689)	(96,129)	(86,927)	(77,035)	(66,401)	(54,969)	(42,679)	(29,469)	(15,267)	0	0
Principal		(2,123,917)	(59,531)	(63,996)	(68,796)	(73,955)	(79,502)	(85,465)	(91,875)	(98,765)	(106,173)	(114,135)	(122,696)	(131,898)	(141,790)	(152,424)	(163,856)	(176,145)	(189,356)	(203,558)	(0)	(0)
Annual payment			(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	(218,825)	0	0
Debt Coverage Ratio			1.62	1.63	1.63	1.63	1.63	1.66	1.65	1.65	1.64	1.63	1.63	1.62	1.61	1.60	1.60	1.59	1.58	1.56		
After-Tax Equity Return																						
Cash																						
EBITDA			354,391	356,224	356,228	356,208	356,163	363,334	361,990	360,589	359,131	357,615	356,038	354,401	352,702	350,939	349,113	347,220	345,260	341,864	338,397	335,791
Plus: Release of Debt Service Reserve			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109,500	0	0
Plus: Release of WC & Maint Reserves			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44,749
Less: Inverter Replacement			0	0	0	0	0	0	0	0	0	0	0	0								
Less: Principal			(59,531)	(63,996)	(68,796)	(73,955)	(79,502)	(85,465)	(91,875)	(98,765)	(106,173)	(114,135)	(122,696)	(131,898)	(141,790)	(152,424)	(163,856)	(176,145)	(189,356)	(203,558)	(0)	(0)
Less: Interest			(159,294)	(154,829)	(150,029)	(144,870)	(139,323)	(133,360)	(126,950)	(120,060)	(112,652)	(104,689)	(96,129)	(86,927)	(77,035)	(66,401)	(54,969)	(42,679)	(29,469)	(15,267)	0	0
Total Cash			135,566	137,399	137,403	137,383	137,338	144,509	143,165	141,764	140,306	138,790	137,213	135,576	133,877	132,114	130,288	128,395	126,435	232,539	338,397	380,540
Taxable Income Benefit/(Liability)																						
EBITDA			354,391	356,224	356,228	356,208	356,163	363,334	361,990	360,589	359,131	357,615	356,038	354,401	352,702	350,939	349,113	347,220	345,260	341,864	338,397	335,791
Less: Interest			(159,294)	(154,829)	(150,029)	(144,870)	(139,323)	(133,360)	(126,950)	(120,060)	(112,652)	(104,689)	(96,129)	(86,927)	(77,035)	(66,401)	(54,969)	(42,679)	(29,469)	(15,267)	0	0
Less: Tax Depreciation			(763,107)	(1,226,139)	(745,383)	(456,281)	(454,499)	(237,528)	(21,413)	(21,413)	(21,436)	(21,413)	(21,436)	(21,413)	(21,436)	(21,413)	(21,436)	(14,584)	(7,755)	(7,755)	(7,755)	(7,755)
Taxable Income/(Loss)			(568,101)	(1,024,744)	(539,184)	(244,943)	(237,658)	(7,554)	213,626	219,116	225,042	231,512	238,473	246,061	254,231	263,126	272,708	289,957	308,037	318,842	330,642	328,037
State Tax Benefit/(Liability)			48,289	87,103	45,831	20,820	20,201	642	(18,158)	(18,625)	(19,129)	(19,679)	(20,270)	(20,915)	(21,610)	(22,366)	(23,180)	(24,646)	(26,183)	(27,102)	(28,105)	(27,883)
Federal Taxable Income/(Loss)			(519,812)	(937,641)	(493,354)	(224,123)	(217,457)	(6,912)	195,468	200,491	205,914	211,833	218,202	225,145	232,621	240,760	249,527	265,310	281,854	291,740	302,538	300,154
Federal Tax Benefit/(Liability)			181,934	328,174	172,674	78,443	76,110	2,419	(68,414)	(70,172)	(72,070)	(74,142)	(76,371)	(78,801)	(81,417)	(84,266)	(87,335)	(92,859)	(98,649)	(102,109)	(105,888)	(105,054)
Total Taxable Income Benefit/(Liability)			230,223	415,278	218,504	99,263	96,311	3,061	(86,572)	(88,797)	(91,198)	(93,820)	(96,641)	(99,716)	(103,027)	(106,632)	(110,515)	(117,505)	(124,832)	(129,211)	(133,993)	(132,937)
Tax Credits																						
Federal ITC			1,319,550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State ITC			51,462	51,462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			1,371,012	51,462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Equity Investment		(2,815,425)																				
Total Equity Return		(2,815,425)	1,736,801	604,139	355,908	236,646	233,649	147,570	56,593	52,967	49,108	44,969	40,572	35,860	30,850	25,483	19,773	10,890	1,603	103,328	204,404	247,603
Internal Rate of Return	12.13%	1,423,292																				
Reserve Accounts																						
Beginning Balance			0	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	44,749	44,749
Inverter Replacment			0	0	0	0	0	0	0	0	0	0	0	0								
Debt Reserve			109,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(109,500)	0	0
Maint. Reserve			30,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(30,000)
Working Capital			14,749	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(14,749)
Total			154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	154,249	44,749	44,749	0
Non-Interest Bearing Reserves			9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833	9,833
Interest on Reserves			1,805	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	3,610	2,242	873	436

Wind Pricing Model
Depreciation

Depreciation Summary

Schedule	Amount	Federal ITC Amount	Federal ITC Basis Disallowance	Remaining Basis After Disallowance
5 Year MACRS	4,398,500	1,319,550	659,775	3,738,725
15 Year MACRS	231,500			231,500
20 Year MACRS				0
20 Year SL	155,093			155,093
39 Year SL				0
Non-Depreciable	154,249			
Total Project Cost	4,939,342	1,319,550	659,775	4,125,318

Income Tax Depreciation		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Depreciation												
Calendar Year Depreciation %s per Classification												
5 Year MACRS	3,738,725		20.00%	32.00%	19.20%	11.52%	11.52%	5.76%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	231,500		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%
20 Year MACRS	0		3.75%	7.22%	6.68%	6.18%	5.71%	5.29%	4.89%	4.52%	4.46%	4.46%
20 Year SL	155,093		2.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
39 Year SL	0		1.39%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Inverter replacement	0											
Tax Depreciation												
5 Year MACRS	3,738,725		747,745	1,196,392	717,835	430,701	430,701	215,351	0	0	0	0
15 Year MACRS	231,500		11,575	21,993	19,793	17,826	16,043	14,422	13,659	13,659	13,682	13,659
20 Year MACRS	0		0	0	0	0	0	0	0	0	0	0
20 Year SL	155,093		3,877	7,755	7,755	7,755	7,755	7,755	7,755	7,755	7,755	7,755
39 Year SL	0		0	0	0	0	0	0	0	0	0	0
												0
Total Depreciation	4,125,318		763,197	1,226,139	745,383	456,281	454,499	237,528	21,413	21,413	21,436	21,413
Different between Total Cost & Total Depreciation	0											

Income Tax Depreciation	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
Depreciation											
Calendar Year Depreciation %s per Classification											
5 Year MACRS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year MACRS	5.91%	5.90%	5.91%	5.90%	5.91%	2.95%	0.00%	0.00%	0.00%	0.00%	0.00%
20 Year MACRS	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	4.46%	2.23%
20 Year SL	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.50%
39 Year SL	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%	2.56%
Inverter replacement											
Tax Depreciation											
5 Year MACRS	0	0	0	0	0	0	0	0	0	0	0
15 Year MACRS	13,682	13,659	13,682	13,659	13,682	6,829					
20 Year MACRS	0	0	0	0	0	0	0	0	0	0	0
20 Year SL	7,755	7,755	7,755	7,755	7,755	7,755	7,755	7,755	7,755	7,755	3,877
39 Year SL	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
Total Depreciation	21,436	21,413	21,436	21,413	21,436	14,584	7,755	7,755	7,755	7,755	3,877