High Plains Wind Consortium

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Wind Policy Issues

Strong public demand, but uneconomical w/o subsidy

Level, structure and duration of support?

Infrastructure lacking

Developer or user bear cost?

Diverse goals

Profit, rural development, renewable?

New Tech/Limited disclosure of terms

Public education?

Externalities

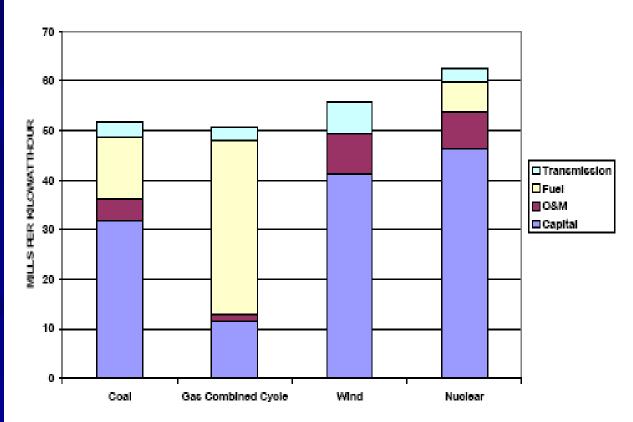
Economic Incentives Langdon Feasibility Study

- 106 1.5mw towers
- \$500 million investment, \$1 million lease payments, \$456,000 local tax payments
- Met tower (2004), FPL (2006)

■ Wind energy is free

Levelized Electricity Costs for New Plants 2015

Source: U.S. Energy Information Agency, 2005 Annual Energy Outlook



Utilities buy electricity at same rate I pay

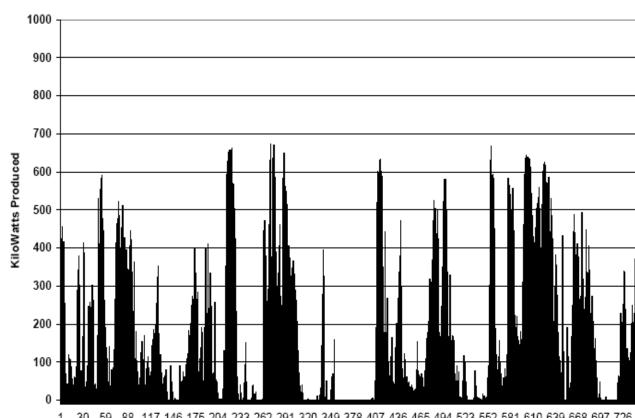
Consumers pay \$0.08/kwh

Buy back at \$0.03/kwh (avoided cost)

Wind provides constant power

Hourly Production of Power in July 2004 at Petersburg, North Dakota

Source: Minnkota Power



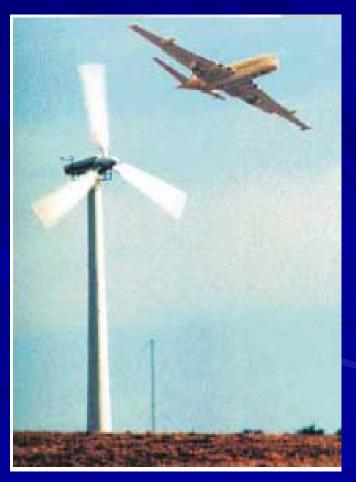
59 88 117 146 175 204 233 262 291 320 349 378 407 436 465 494 523 552 581 610 639 668 697 726

Wind towers last for ever





■ Wind tower only affects me



If wind investment is good for neighbor, must be good for me

Wind Financial Calculator

1 2	В	С	Wind T	urbine l	F Product	a tion Eco	н nomics	ı	J	K by Douglas	L G. Tiffany,	M Dept. of a	N Applied Ec	o on., Unive	p rsity of Mir	Q nnesota
3										12/29/2006		_				
4			Assum	ptions:						Conclus	ions:					
6	Wind Turbine Capacity			MW		Percent Equity	<u> </u>	40,00%		MPV of 20 Yr. I	Project	ı	250.543			
6	Capacity Factor of Wind Site		35	%	į.	ercent Debt		60,00%		Average Cost	our KWMH	ľ	\$0,03652			
	Annual Production		1000 0 0 0 0 0 0 0 0 0	KWIH		nterest Rate	<u> </u>	7,00%		IRR for Project			13.30%			
-	Price for Power Sold (per KWH)			1st Decade	\$0.0330.2	and Decade	_					_				
	Discount Factor (%)		9.00%	-												
	Salvage Value(+)/Removal Cost (-)		\$161,300													
11		1,0	Intial	1	2	3	4	5	6	7	8	9	10	11	12	13
	Capital Expenditures			_												
	Site Investigation		20,000													
	Legal- for Site		2,000													
	Legal—Power Purchase Interconnection Fees		5,000													
	Tower, Turbine & Installation		1.613.000													
	Transmission Feeder Unes		2,000													
-	Working Capital		8.000													
	Salvage Value/Removal Expense			-												
	Total Capital Expenditures		1,655,000													
22																
23	Revenue or Credits															
-	Power Purchased	- 1	0	186,944	186,944	166,944	186,944	166,944	166,944	168,944	166,944	166,944	166,944	166,944	166,944	105,944
	Production Tax Credit (Federal)	1 0	0	96,119	96,119	98,119	96,119	98,119	96,119	96,119	96,119	96,119	96,119			
	MN Sm Producer Psymt @1.5 Sale of Green Tags @ \$.01/kWh	0	0	•												
	USDA Rural Davelop, Grant	0														
	Total Revenue or Credits	ο.	0	283.083	263.063	283.083	283,083	263,063	283,063	283.063	283,063	263,063	283.063	166,944	188,944	188,944
30			_													
31	Operating Expenses															
32	Land Lease			4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
33	Service and Warrenty			12,500	12,500	23,900	23,900	23,900	23,900	23,900	23,900	23,900	23,900	23,900	23,900	23,900
	Electricity			1,000	1,000	1,000	1,000	1,000	1,000	7 1 2 2 2	1,000	1,000	1,000	1,000	1,000	1,000
-	Insurance			10,000	10,000	10,000	10,000	10,000	10,000		10,000	10,000	10,000	10,000	10,000	10,000
-	Accounting			1,000	1,000	1,000	1,000	1,000	1,000	1,000 607	1,000	1,000	1,000	1,000 607	1,000	1,000
	Property Texes (production) Debt Service (P+ I)			141.381	141.381	141.381	141.381	141.381	141.381	141.381	141.381	141.381	141.381	604	OWN	000
	Total Operating Expenses		0	170.488	170.488	181.838	181.888	181,888	181.888		181,888	181,888	181.888	40.507	40 507	40.507
40							100 0 0000		1000000	1000000						
41	Net Cach Flow		-682,000	92,575	92,575	81,175	84,175	81,175	81,175	81,175	81,175	81,175	84,175	126,437	126,437	126,433
	Disc. Cash Flow of Year		-682,000	84,931	77,918	62,682	57,506	52,758	48,402		40,739	37,375	34,289	48,996	44,953	41,241
	Cumulative Disc. Cash Flows			84,931	162,849	225,534	283,038	335,798	384,198		469,342	506,717	541,006	590,005	634,957	676,196
44	med managed as a second		Initial	- 1	2	3	4	5	6	7	8	9	10	11	12	13
45	Net Present Value of Project	at	250,543													

High Plains Energy Consortium

- Wiki space (http://sustainablegreatplains.wikispaces.com/Energy)
- Webcasts
- Discussion Forum

(www.plainswind.org)

