

Community	Census Area	Wind Class	Total diesel generated FY07 [kWh]	Total Diesel used [gal]	Diesel Price [\$FY07]	Annual Wind Production [kWh]	Wind Capital Cost	Diesel displacement [gal]	Diesel savings [\$FY07]	GHG reduction [tco2]
Akutan	Aleutians East	7	540,924	48,005	\$ 2.74	453,000	\$ 600,000	34,846	\$ 95,478	365
Adak	Aleutians West	7	989,880	76,145	\$ 3.94	679,000	\$ 800,000	52,231	\$ 205,789	547
King Cove	Aleutians East	7	2,167,955	157,496	\$ 2.38	2,222,000	\$ 2,200,000	170,923	\$ 406,797	1,870
Saint George	Aleutians West	7	989,880	76,145	\$ 4.71	679,000	\$ 800,000	52,231	\$ 246,007	547
Saint Paul	Aleutians West	7	6,099,979	446,870	\$ 2.89	2,973,000	\$ 2,900,000	228,692	\$ 660,921	2,395
Sand Point	Aleutians East	5	2,719,000	301,671	\$ 3.24	2,226,000	\$ 4,200,000	171,231	\$ 554,788	2,191
Unalaska	Aleutians West	7	34,819,459	2,441,910	\$ 2.37	31,901,000	\$ 24,200,000	2,453,923	\$ 5,815,798	257,000
<b>Total/Average</b>		<b>7</b>	<b>48,327,077</b>	<b>3,548,241</b>	<b>\$ 3.18</b>	<b>41,133,000</b>	<b>\$ 35,700,000</b>	<b>3,164,077</b>	<b>\$ 7,985,578</b>	<b>264,915</b>
Akiachak	Bethel	5	1,800,172	181,453	\$ 3.29	539,000	\$ 1,000,000	41,462	\$ 136,408	453
Akiak	Bethel	4	1,173,965	90,305	\$ 3.02	215,000	\$ 600,000	16,538	\$ 49,946	173
Aniak	Bethel	7	2,569,600	195,889	\$ 2.76	1,812,000	\$ 1,800,000	139,385	\$ 384,702	1,525
Atmoutluak	Bethel	6	33,269	53,931	\$ 3.22	1,311,000	\$ 1,800,000	100,846	\$ 324,725	1,103
Bethel	Bethel	3	42,140,800	3,084,531	\$ 3.77	22,053,000	\$ 24,200,000	1,696,385	\$ 6,395,370	17,766
Chefornak	Bethel	6	904,180	73,122	\$ 3.61	656,000	\$ 1,000,000	50,462	\$ 182,166	552
Eek	Bethel	5	775,087	56,570	\$ 1.92	396,000	\$ 800,000	30,462	\$ 58,486	319
Goodnews Bay	Bethel	7	686,347	54,725	\$ 1.92	462,000	\$ 600,000	35,538	\$ 68,234	372
Kasigluk	Bethel	6	2,235,444	162,151	\$ 1.92	1,639,000	\$ 2,200,000	126,077	\$ 242,068	1,379
Kipnuk	Bethel	6	1,427,939	142,656	\$ 3.16	1,311,000	\$ 1,800,000	100,846	\$ 318,674	1,103
Kongiganak	Bethel	6	951,274	77,820	\$ 2.94	656,000	\$ 1,000,000	50,462	\$ 148,357	552
Kwethluk	Bethel	5	1,438,119	100,363	\$ 2.85	851,000	\$ 1,400,000	65,462	\$ 186,565	716
Kwigillingok	Bethel	6	1,065,250	70,347	\$ 2.69	656,000	\$ 1,000,000	50,462	\$ 135,742	552
Mekoryuk	Bethel	7	962,073	68,559	\$ 1.88	906,000	\$ 1,000,000	69,692	\$ 131,022	762
Napakiaik	Bethel	5	876,000	67,385	\$ 4.71	567,000	\$ 1,000,000	43,615	\$ 205,428	477
Napaskiak	Bethel	5	934,527	74,098	\$ 3.17	567,000	\$ 1,000,000	43,615	\$ 138,261	477
Newtok	Bethel	5	274,248	39,791	\$ 1.51	567,000	\$ 1,000,000	43,615	\$ 65,859	477
Nightmute	Bethel	7	588,666	45,085	\$ 1.87	462,000	\$ 600,000	35,538	\$ 66,457	372
Quinhagak	Bethel	4	1,802,038	134,072	\$ 1.94	1,020,000	\$ 1,800,000	78,462	\$ 152,215	858
Toksook Bay	Bethel	7	2,552,597	139,588	\$ 1.92	1,812,000	\$ 1,800,000	139,385	\$ 267,618	1,525
Tuluksak	Bethel	4	869,717	75,738	\$ 3.01	510,000	\$ 1,000,000	39,231	\$ 118,085	429
Tuntutuliak	Bethel	6	876,000	67,385	\$ 4.71	656,000	\$ 1,000,000	50,462	\$ 237,674	552
Upper Kalskag	Bethel	7	1,255,023	91,301	\$ 1.89	906,000	\$ 1,000,000	69,692	\$ 131,718	762
Alakanuk	Wade Hampton	5	1,757,214	132,087	\$ 1.88	851,000	\$ 1,400,000	65,462	\$ 123,068	716
Chevak	Wade Hampton	6	2,287,638	180,785	\$ 1.91	1,311,000	\$ 1,800,000	100,846	\$ 192,616	1,103
Emmonak	Wade Hampton	5	2,884,529	202,893	\$ 1.90	1,418,000	\$ 2,200,000	109,077	\$ 207,246	1,193
Hooper Bay	Wade Hampton	7	922,360	207,586	\$ 1.88	1,812,000	\$ 1,800,000	139,385	\$ 262,043	1,525
Kotlik	Wade Hampton	5	1,763,129	151,270	\$ 3.22	851,000	\$ 1,400,000	65,462	\$ 210,786	716
Marshall	Wade Hampton	7	1,203,402	86,539	\$ 1.90	906,000	\$ 1,000,000	69,692	\$ 132,415	762
Mountain Village	Wade Hampton	7	2,615,914	176,569	\$ 1.87	1,812,000	\$ 1,800,000	139,385	\$ 260,649	1,525
Nunam Iqua	Wade Hampton	5	699,396	51,717	\$ 2.98	132,000	\$ 400,000	10,154	\$ 30,258	106
Pilot Station	Wade Hampton	7	1,707,354	128,455	\$ 1.88	1,359,000	\$ 1,400,000	104,538	\$ 196,532	1,144
Russian Mission	Wade Hampton	6	815,679	59,709	\$ 1.87	656,000	\$ 1,000,000	50,462	\$ 94,363	552
Saint Mary's	Wade Hampton	7	3,196,819	215,077	\$ 1.90	1,812,000	\$ 1,800,000	139,385	\$ 264,831	1,525
Scammon Bay	Wade Hampton	7	1,635,960	121,579	\$ 2.44	1,359,000	\$ 1,400,000	104,538	\$ 255,074	1,144
<b>Total/Average</b>		<b>6</b>	<b>89,681,729</b>	<b>6,861,130</b>	<b>\$ 2.55</b>	<b>54,809,000</b>	<b>\$ 67,800,000</b>	<b>4,216,077</b>	<b>\$ 12,375,662</b>	<b>45,267</b>

Community	Census Area	Wind Class	Total diesel generated FY07 [kWh]	Total Diesel used [gal]	Diesel Price [\$FY07]	Annual Wind Production [kWh]	Wind Capital Cost	Diesel displacement [gal]	Diesel savings [\$FY07]	GHG reduction [tco2]
Naknek	Bristol Bay	4	22,203,563	1,537,298	\$ 2.39	11,895,000	\$ 12,200,000	915,000	\$ 2,186,850	9,583
Alegnagik	Dillingham	7	367,920	28,302	\$ 3.94	457,000	\$ 600,000	35,154	\$ 138,506	368
Dillingham	Dillingham	5	19,081,200	1,221,084	\$ 2.40	25,431,000	\$ 24,200,000	1,956,231	\$ 4,694,954	20,487
Manokotak	Dillingham	7	1,067,400	66,295	\$ 4.71	686,000	\$ 800,000	52,769	\$ -	552
New Stuyahok	Dillingham	6	1,206,029	87,967	\$ 3.03	649,000	\$ 1,000,000	49,923	\$ 151,267	546
Togiak	Dillingham	7	2,559,306	178,398	\$ 2.85	1,795,000	\$ 1,800,000	138,077	\$ 393,519	1,510
Kokhanok	Lake & Peninsula	7	505,141	41,129	\$ 4.22	457,000	\$ 600,000	35,154	\$ 148,349	368
Newhalen	Lake & Peninsula	7	528,966	42,686	\$ 2.35	2,693,000	\$ 2,600,000	207,154	\$ 486,812	2,265
Port Alsworth	Lake & Peninsula	7	623,387	56,082	\$ 4.05	686,000	\$ 800,000	52,769	\$ 213,715	552
Kodiak	Kodiak Island	4	21,067,800	1,620,600	\$ 3.94	11,782,000	\$ 12,200,000	906,308	\$ 3,570,852	9,492
<b>Total/Average</b>		<b>6</b>	<b>69,210,712</b>	<b>4,879,841</b>	<b>\$ 3.39</b>	<b>56,531,000</b>	<b>\$ 56,800,000</b>	<b>4,348,538</b>	<b>\$ 12,233,368</b>	<b>45,723</b>
Brevig Mission	Nome	7	934,777	70,833	\$ 1.88	924,000	\$ 1,000,000	71,077	\$ 133,625	777
Diomede	Nome	7	474,980	43,280	\$ 1.85		\$ 200,000	0	\$ -	
Elim	Nome	7	1,130,207	83,192	\$ 1.88	924,000	\$ 1,000,000	71,077	\$ 133,625	777
Gambell	Nome	7	1,821,583	138,378	\$ 1.91	1,386,000	\$ 1,400,000	106,615	\$ 203,635	1,166
Golovin	Nome	7	699,111	59,237	\$ 3.28	706,000	\$ 800,000	54,308	\$ 178,129	569
Koyuk	Nome	6	1,292,120	97,261	\$ 1.89	668,000	\$ 1,000,000	51,385	\$ 97,117	562
Nome	Nome	7	30,088,983	32,943	\$ 3.03	16,576	\$ 12,200,000	1,275	\$ 3,863	13,354
Saint Michael	Nome	7	1,474,768	100,616	\$ 1.93	1,386,000	\$ 1,400,000	106,615	\$ 205,768	1,166
Savoonga	Nome	6	1,809,090	147,824	\$ 1.91	1,003,000	\$ 1,400,000	77,154	\$ 147,364	844
Shishmaref	Nome	5	1,596,490	111,966	\$ 1.86	867,000	\$ 1,400,000	66,692	\$ 124,048	730
Stebbins	Nome	7	1,378,185	105,624	\$ 1.91	1,386,000	\$ 1,400,000	106,615	\$ 203,635	1,166
Teller	Nome	6	810,276	69,455	\$ 2.77	480,000	\$ 800,000	36,923	\$ 102,277	387
Unalakleet	Nome	6	3,942,280	290,392	\$ 2.79	4,973,000	\$ 5,000,000	382,538	\$ 1,067,282	4,006
Wales	Nome	7	584,426	38,917	\$ 1.87	471,000	\$ 600,000	36,231	\$ 67,752	379
<b>Total/Average</b>		<b>7</b>	<b>47,562,296</b>	<b>1,346,638</b>	<b>\$ 2.22</b>	<b>14,266,576</b>	<b>\$ 29,400,000</b>	<b>1,168,506</b>	<b>\$ 2,668,120</b>	<b>25,883</b>
Barrow	North Slope	3	21,067,800	1,620,600	\$ 1.46	11,558,000	\$ 12,200,000	889,077	\$ 1,298,052	9,311
Kaktovik	North Slope	7	3,228,900	294,318	\$ 2.25	2,849,000	\$ 2,600,000	219,154	\$ 493,096	2,397
Point Hope	North Slope	7	4,321,081	267,998	\$ 2.76	6,364,000	\$ 5,000,000	489,538	\$ 1,351,126	5,127
Point Lay	North Slope	7	2,311,765	173,358	\$ 6.09	2,374,000	\$ 2,200,000	182,615	\$ 1,112,128	1,998
Wainwright	North Slope	5	4,088,286	173,358	\$ 6.09	4,552,000	\$ 5,000,000	350,154	\$ 2,132,437	3,667
<b>Total/Average</b>		<b>6</b>	<b>35,017,832</b>	<b>2,529,632</b>	<b>\$ 3.73</b>	<b>27,697,000</b>	<b>\$ 27,000,000</b>	<b>2,130,538</b>	<b>\$ 6,386,839</b>	<b>22,500</b>
Deering	Northwest Arctic	6	709,559	62,878	\$ 3.11	484,000	\$ 800,000	37,231	\$ 115,788	390
Kiana	Northwest Arctic	6	1,529,950	103,820	\$ 2.72	1,012,000	\$ 1,400,000	77,846	\$ 211,742	851
Kivalina	Northwest Arctic	5	1,307,779	93,795	\$ 2.48	584,000	\$ 1,000,000	44,923	\$ 111,409	491
Kotzebue	Northwest Arctic	6	21,647,390	1,455,277	\$ 2.56	14,403,000	\$ 12,200,000	1,107,923	\$ 2,836,283	11,603
Noatak	Northwest Arctic	4	149,730	112,458	\$ 4.48	787,000	\$ 1,400,000	60,538	\$ 271,212	662
Noorvik	Northwest Arctic	5	1,991,566	149,669	\$ 2.46	1,167,000	\$ 1,800,000	89,769	\$ 220,832	982
Selawik	Northwest Arctic	4	2,945,834	209,058	\$ 2.48	1,050,000	\$ 1,800,000	80,769	\$ 200,308	883
Shungnak	Northwest Arctic	5	1,522,433	109,965	\$ 3.37	875,000	\$ 1,400,000	67,308	\$ 226,827	737
<b>Total/Average</b>		<b>5</b>	<b>31,804,241</b>	<b>2,296,920</b>	<b>\$ 2.96</b>	<b>20,362,000</b>	<b>\$ 21,800,000</b>	<b>1,566,308</b>	<b>\$ 4,194,401</b>	<b>16,599</b>

Community	Census Area	Wind Class	Total diesel generated FY07 [kWh]	Total Diesel used [gal]	Diesel Price [\$FY07]	Annual Wind Production [kWh]	Wind Capital Cost	Diesel displacement [gal]	Diesel savings [\$FY07]	GHG reduction [tco2]
Craig	Prince of Wales-Outer	7	115,082	21,776	\$ 2.37	9,016,000	\$ 7,400,000	693,538	\$ 1,643,686	7,263
Hollis	Prince of Wales-Outer	6	613,200	47,169	\$ 3.82	457,000	\$ 800,000	35,154	\$ 134,288	368
Hydaburg	Prince of Wales-Outer	6	1,760,760	135,443	\$ 3.82	956,000	\$ 1,400,000	73,538	\$ 280,917	804
Metlakatla	Prince of Wales-Outer	7	7,253,280	557,945	\$ 3.82	9,016,000	\$ 7,400,000	693,538	\$ 2,649,317	7,263
Sitka	Sitka	6	21,067,800	1,620,600	\$ 3.82	13,603,000	\$ 12,200,000	1,046,385	\$ 3,997,189	10,959
Hoonah	Skagway-Hoonah-Ang	6	5,499,762	380,170	\$ 2.57	7,111,000	\$ 7,400,000	547,000	\$ 1,405,790	5,728
Pelican	Skagway-Hoonah-Ang	7	613,200	47,169	\$ 3.82	673,000	\$ 800,000	51,769	\$ 197,758	542
Skagway	Skagway-Hoonah-Ang	7	870,280	59,461	\$ 2.51	9,016,000	\$ 7,400,000	693,538	\$ 1,740,782	7,263
Haines	Haines	6	426,690	31,508	\$ 2.70	7,111,000	\$ 7,400,000	547,000	\$ 1,476,900	5,728
Mud Bay	Haines	6	613,200	46,154	\$ 3.82	305,000	\$ 600,000	23,462	\$ 89,623	246
Juneau	Juneau	7	21,067,800	1,620,600	\$ 3.82	16,112,000	\$ 12,200,000	1,239,385	\$ 4,734,449	12,980
Ketchikan	Ketchikan Gateway	7	21,067,800	1,620,600	\$ 3.82	15,802,000	\$ 12,200,000	1,215,538	\$ 4,643,357	12,730
Saxman	Ketchikan Gateway	7	1,760,760	135,443	\$ 3.82	881,000	\$ 1,000,000	67,769	\$ 258,878	741
Kake	Wrangell-Petersburg	5	3,326,358	250,876	\$ 2.60	6,331,000	\$ 7,400,000	487,000	\$ 1,266,200	5,100
Petersburg	Wrangell-Petersburg	7	6,245,880	480,452	\$ 3.82	9,016,000	\$ 7,400,000	693,538	\$ 2,649,317	7,263
Wrangell	Wrangell-Petersburg	6	7,253,280	557,945	\$ 3.82	7,111,000	\$ 7,400,000	547,000	\$ 2,089,540	5,728
<b>Total/Average</b>		<b>7</b>	<b>133,174,474</b>	<b>10,130,697</b>	<b>\$ 3.36</b>	<b>153,235,000</b>	<b>\$ 131,400,000</b>	<b>11,787,308</b>	<b>\$ 38,643,539</b>	<b>123,508</b>
Cordova	Valdez-Cordova	7	12,073,564	858,775	\$ 2.45	24,168,000	\$ 18,200,000	1,859,077	\$ 4,554,738	19,469
Tatitlek	Valdez-Cordova	7	477,978	38,011	\$ 2.86	438,000	\$ 600,000	33,692	\$ 96,360	353
Valdez	Valdez-Cordova	7	21,067,800	1,620,600	\$ 3.82	16,112,000	\$ 12,200,000	1,239,385	\$ 4,734,449	12,980
<b>Total/Average</b>		<b>7</b>	<b>33,619,342</b>	<b>2,517,386</b>	<b>\$ 3.04</b>	<b>40,718,000</b>	<b>\$ 31,000,000</b>	<b>3,132,154</b>	<b>\$ 9,385,548</b>	<b>32,802</b>
Grayling	Yukon-Koyukuk	7	586,165	46,793	\$ 2.93	461,000	\$ 600,000	35,462	\$ 103,902	372
Holy Cross	Yukon-Koyukuk	5	635,142	48,224	\$ 3.30	396,000	\$ 800,000	30,462	\$ 100,523	319
Huslia	Yukon-Koyukuk	4	985,141	73,631	\$ 3.31	510,000	\$ 1,000,000	39,231	\$ 129,854	429
Minto	Yukon-Koyukuk	6	612,299	51,643	\$ 2.32	470,000	\$ 800,000	36,154	\$ 83,877	379
Shageluk	Yukon-Koyukuk	6	387,928	30,297	\$ 2.81	470,000	\$ 800,000	36,154	\$ 101,592	379
Tanana	Yukon-Koyukuk	7	1,422,715	104,243	\$ 3.07	1,358,000	\$ 1,400,000	104,462	\$ 320,697	1,143
<b>Total/Average</b>		<b>6</b>	<b>4,629,390</b>	<b>354,831</b>	<b>\$ 2.96</b>	<b>3,665,000</b>	<b>\$ 5,400,000</b>	<b>281,923</b>	<b>\$ 840,445</b>	<b>3,021</b>
<b>TOTAL</b>		<b>kWh</b>	<b>948,280,434</b>	<b>66,101,695</b>	<b>\$ 2.90</b>	<b>781,374,152</b>	<b>\$ 776,400,000</b>	<b>60,176,781</b>	<b>\$ 178,952,463</b>	<b>1,124,613</b>
		<b>MWh</b>	<b>459,883</b>		<b>MWh</b>	<b>374,840</b>				

2%

Energy Cost Escalation Rate

## Regional Economic Wind Development - Part II Screening Results DRAFT

Disclaimer: These results are not finalized and subject to change. Use at own risk.

2%		Inflation
5%		Discount Rate
1	5.6	
2		Misc
2	6	
3		Array
3	6.7	
4	7.25	
5		Airfoil
5	7.75	
6	8.4	
7	11.9	
10		Downtime
28		total
2.2 ct/kWh		variable
5% of installed cost		fixed
annual		O&M
sum		Total
wind class	m/s	

**Note:**

Diesel savings for electricity gen. only. No heating, no transportation fuels.  
 Wind-diesel penetration level 50-100% annual ave = medium to high  
 Capital cost = \$4000/kW+\$200,000 BOP integration  
 Diesel Efficiency: 13 kWh/gal

non-PCE diesel prices:

[http://www.dced.state.ak.us/dca/pub/Bulk\\_Fuel\\_Report\\_2007.pdf](http://www.dced.state.ak.us/dca/pub/Bulk_Fuel_Report_2007.pdf)

Average pricing residential heating fuel

No. of turbines- preference multiple turbines over single turbine, but as few as possible

NPV Calculation input:

Loss factors:

<http://www.eia.doe.gov/cneaf/solar.renewables/page/wind/wind.html>

Wx Reference Stations:

Bethel/Wade - Bethel

Dillingham/Bristol Bay, Lake Penn - King Salmon

Nome - Nome

North Slope - Barrow

Northwest Borough - Kotzebue

Aleutians - Cold Bay

Skagway, Wrangell/Petersburgh, Ketchikan, Haines, POW, Sitka - Annette Island

Yukon/Koyukuk - Bettles

Valdez/Cordova - Gulkana

