

Greensburg, Kansas Emissions Spreadsheet, July 9, 2010										
Wind Turbine Potential Output, kw-hr				Greensburg yearly usage, kw-hr						
109,500,000				20,148,000						
speed, mph	# hours/yr	percent of year	output, kw per 1mw turbine	for entire farm, kw times 1.25*10	in kw-hr prod*hours	exported, in kw-hr	diesel load	gal/hr	usage, gals gal/hr*hours	
1	25	0.3	0	0	0	0	2300	160	4000	
2	70	0.8	0	0	0	0	2300	160	11200	
3	170	1.9	0	0	0	0	2300	160	27200	
4	300	3.4	0	0	0	0	2300	160	48000	
5	440	5.0	0	0	0	0	2300	160	70400	
6	630	7.2	0	0	0	0	2300	160	100800	
7	780	8.9	13	163	126750	0	2138	150	117000	
8	740	8.4	20	250	185000	0	2050	140	103600	
9	800	9.1	30	375	300000	0	1925	130	104000	
10	810	9.2	53	663	536625	0	1638	110	89100	
11	800	9.1	80	1000	800000	0	1300	90	72000	
12	810	9.2	110	1375	1113750	0	925	70	56700	
13	690	7.9	140	1750	1207500	0	550	50	34500	
14	580	6.6	180	2250	1305000	0	0	0	0	
15	390	4.5	220	2750	1072500	175500	0	0	0	
16	250	2.9	260	3250	812500	237500	0	0	0	
17	150	1.7	320	4000	600000	255000	0	0	0	
18	130	1.5	380	4750	617500	318500	0	0	0	
19	70	0.8	470	5875	411250	250250	0	0	0	
20	60	0.7	550	6875	412500	274500	0	0	0	
21	20	0.2	640	8000	160000	114000	0	0	0	
22	5	0.1	720	9000	450000	335000	0	0	0	
TOTALS	8720	99.5			9,705,875	1,658,750			838,500	
projected efficiency, % =				8.9		emissions, in lbs =		18,614,700		compared to just getting 20,000,000kw-hr with ccgt 16,118,400
				hours		per cent				
When wind is blowing 6 mph or less, diesel must carry entire load, happens:				1635		18.7				
Inbetween 7 and 13, wind carries partial load, happens:				5430		62.0				
when wind is blowing 14 or more mph, meets Gburg's 2.3mw ave usage				1655		18.9				
diesel fuel burned, gal/hr										
550kw	50									
1100kw	80									
1700kw	120									
2300kw	160									
22.2 lbs/gal burned										