

NPPD's Wind Development Progress Report



Nebraska Wind Conference

Dave Rich
November 9, 2010



Nebraska Public Power District

"Always there when you need us"

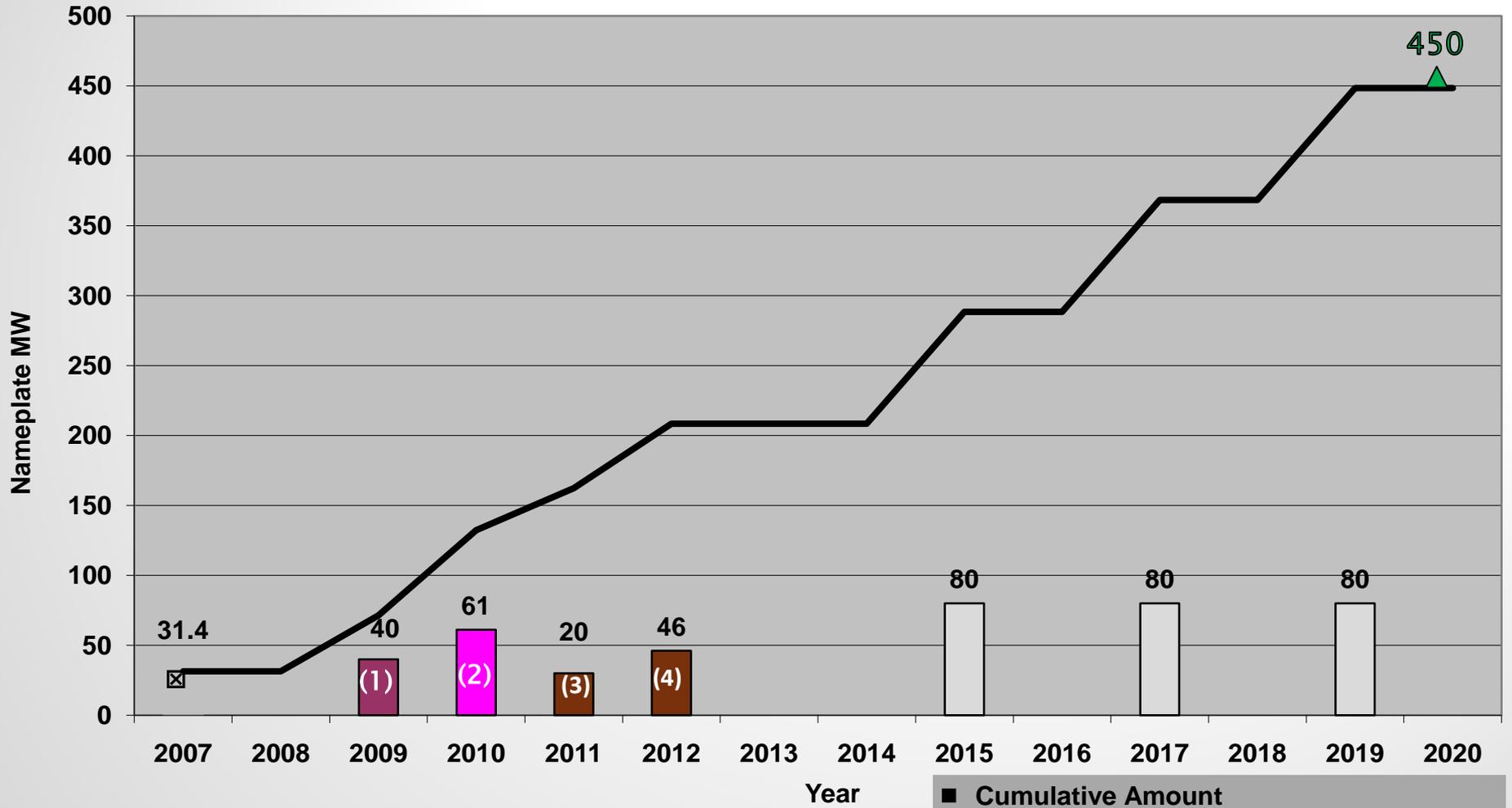
State Wind Resource Potential

Annual Potential for 48 States – 36,919,551 GWHs

1. Texas	6,527,850	11. New Mexico	1,644,970
2. Kansas	3,646,590	12. Colorado	1,288,490
3. Nebraska	3,540,370	13. Missouri	810,619
4. South Dakota	3,411,690	14. Illinois	763,529
5. Montana	3,228,620	15. Indiana	443,912
6. North Dakota	2,983,750	16. Wisconsin	300,136
7. Iowa	2,026,340	17. Michigan	169,221
8. Wyoming	1,944,340	18. Ohio	151,881
9. Oklahoma	1,788,910	19. California	105,646
10. Minnesota	1,679,480	20. Oregon	80,855

NEBRASKA PUBLIC POWER DISTRICT

Wind Generation Addition Plan to Meet 10% New Renewable Energy Goal by 2020



NPPD's Share of:

- ☒ Ainsworth Wind Energy Facility
- (1) Elkhorn Ridge (2) Laredo Ridge
- (3) Crofton Hills (4) Broken Bow, and 3 MW from Springview II

- Cumulative Amount
- Existing Project
- Under Construction
- Approved but not under construction
- Future Projects to be determined

Wind PPA - Current State

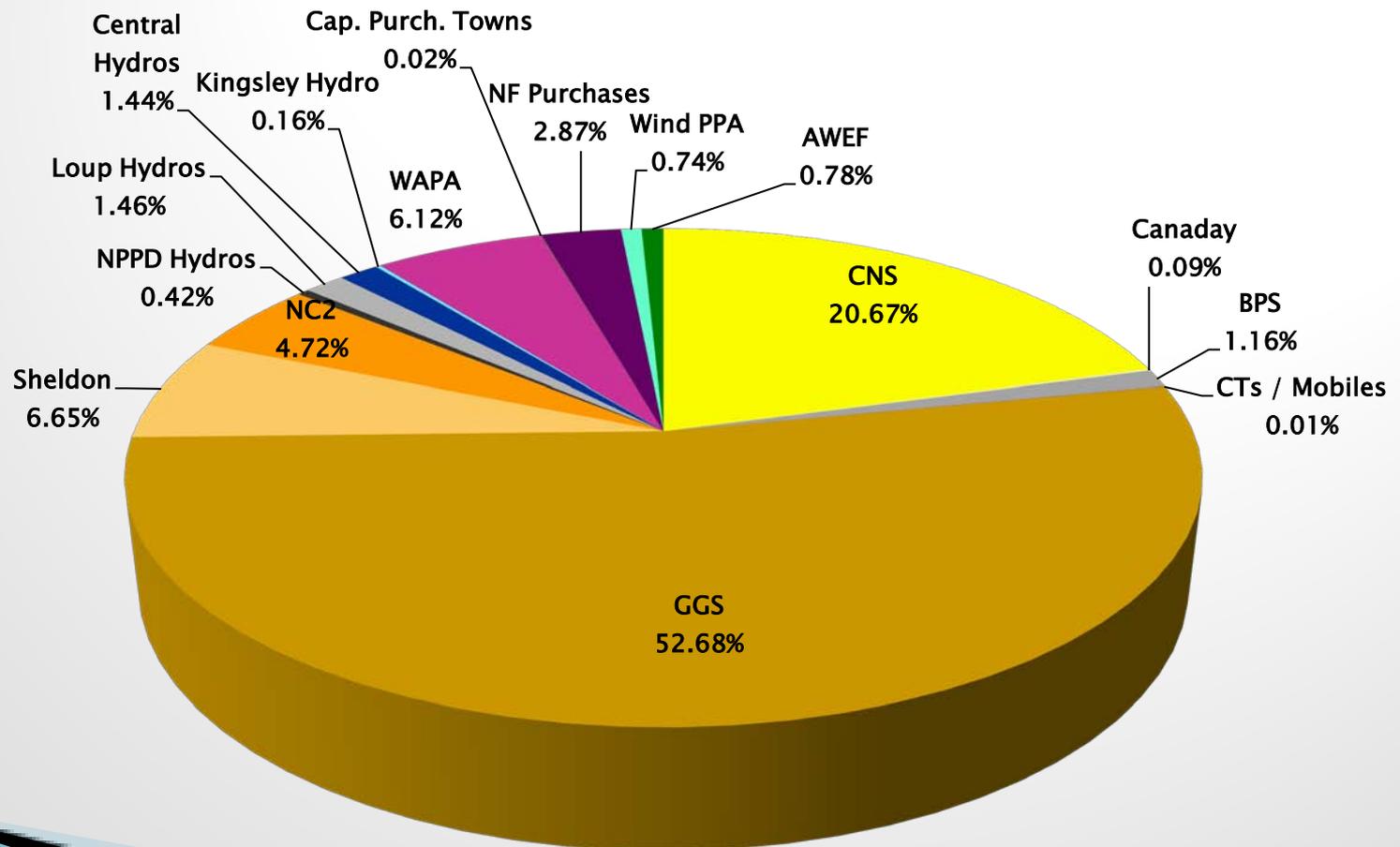
Overview

- ▶ Board established a goal of 10% new renewable energy by 2020
- ▶ NPPD developed, owns and operates the Ainsworth Wind Energy Facility
- ▶ Current Federal initiatives make Wind Power Purchase Agreements with private owners a lower cost option than public power ownership

Wind Power Purchase Agreements - Current State

Role in NPPD's System

Sources of Energy 2009 Actual



Note: Nonfirm sales are allocated between GGS, Sheldon, NC2

Ainsworth Wind Energy Facility - Current State

Overview

- ▶ Located 6 miles South of Ainsworth, NE
- ▶ 36 Units
- ▶ Vestas V82 1.65MW Wind Turbines
- ▶ Rated Capacity: 59.4 Megawatts
- ▶ Owned and operated by NPPD
- ▶ 6 Employees on site



Ainsworth Wind Energy Facility - Current State (cont)

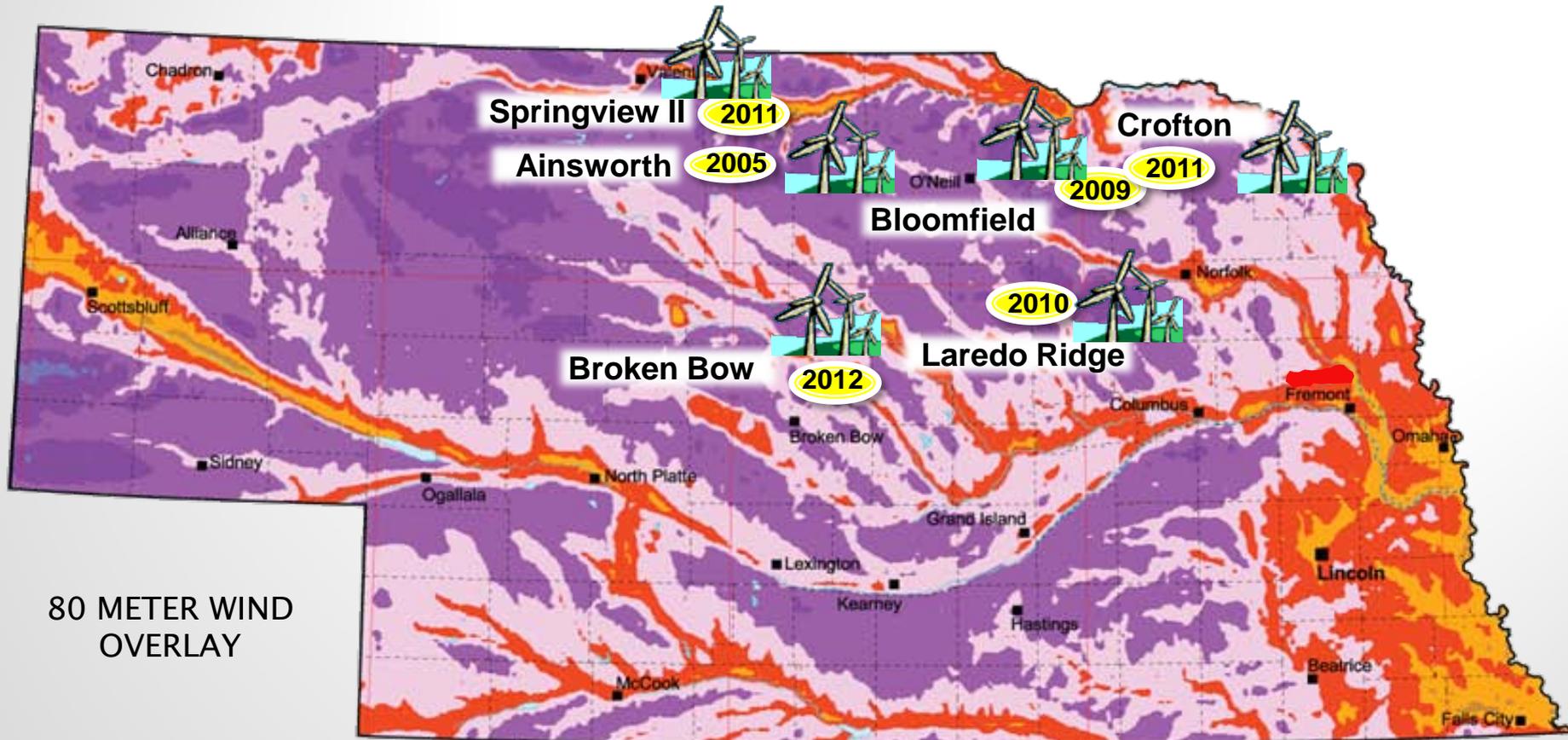
- ▶ Celebrated 5 years in service
- ▶ Participants
 - OPPD – 10MW 16.84%
 - Jacksonville Electric (Florida) 10MW 16.84%
 - MEAN 7MW 11.78%
 - Grand Island 1MW 1.68%
- ▶ Resolving blade cracking issues
- ▶ Continue to have some issues with gear boxes and generator failures

Wind PPAs - Current State

Purchase Power Agreement Assessment

- ▶ 20 year term
- ▶ 5 year option to extend (yrs 21 through 26)
- ▶ NPPD has option (excluding Springview) to buy after 10 & 20 years
- ▶ Due to confidentiality, cannot disclose specific prices, however PPA prices range from mid \$30's to mid \$40's/MWh
- ▶ Price includes energy plus environmental attributes or RECs
- ▶ Each contract has a specific escalation rate ranging from 2% to 3.5%/year

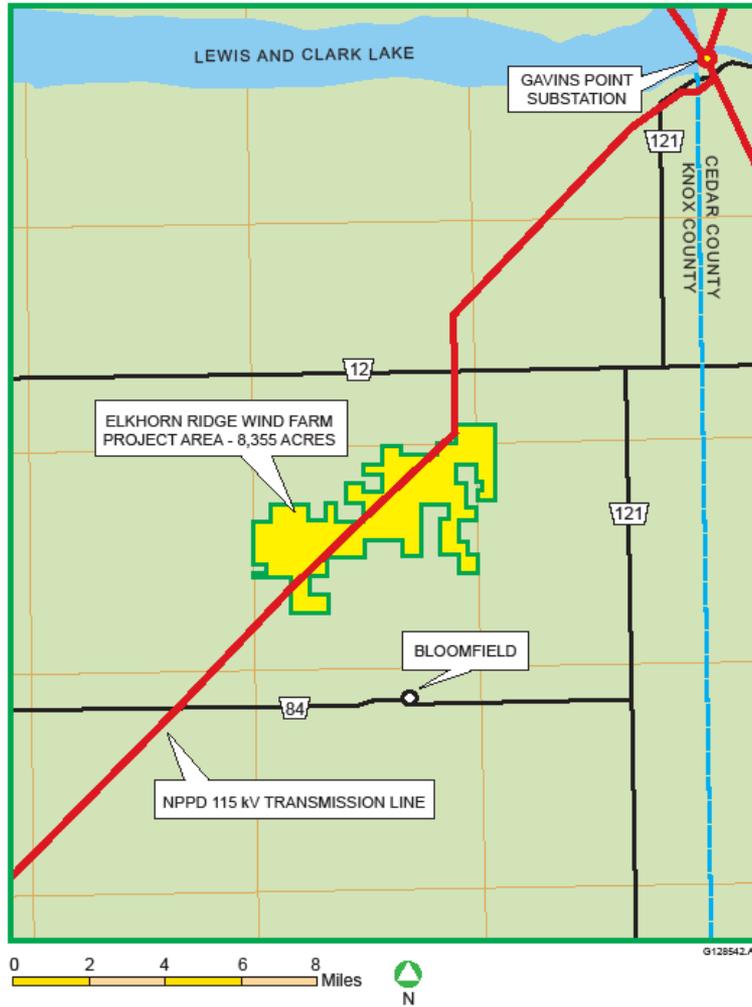
Wind PPA - Current State



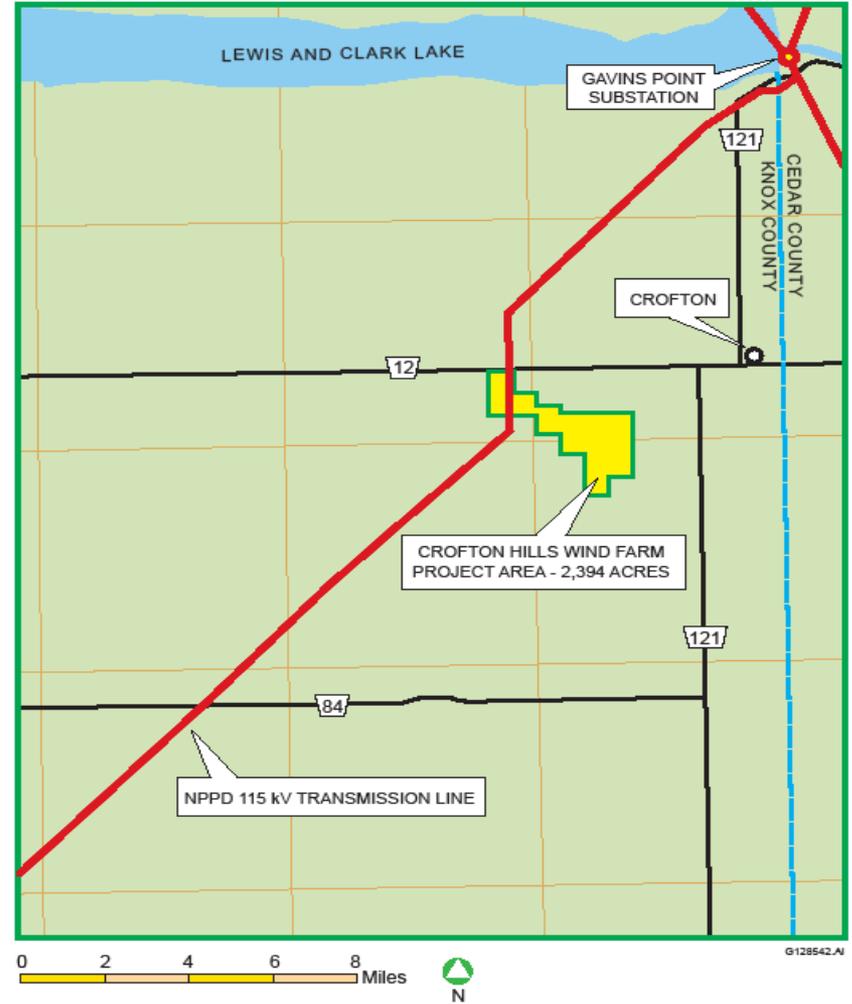
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Elkhorn Ridge & Crofton Hills

ELKHORN RIDGE WIND FARM / LOCATION MAP



CROFTON HILLS WIND FARM / LOCATION MAP



Elkhorn Ridge Wind Farm



Laredo Ridge Wind - PPA- Current State

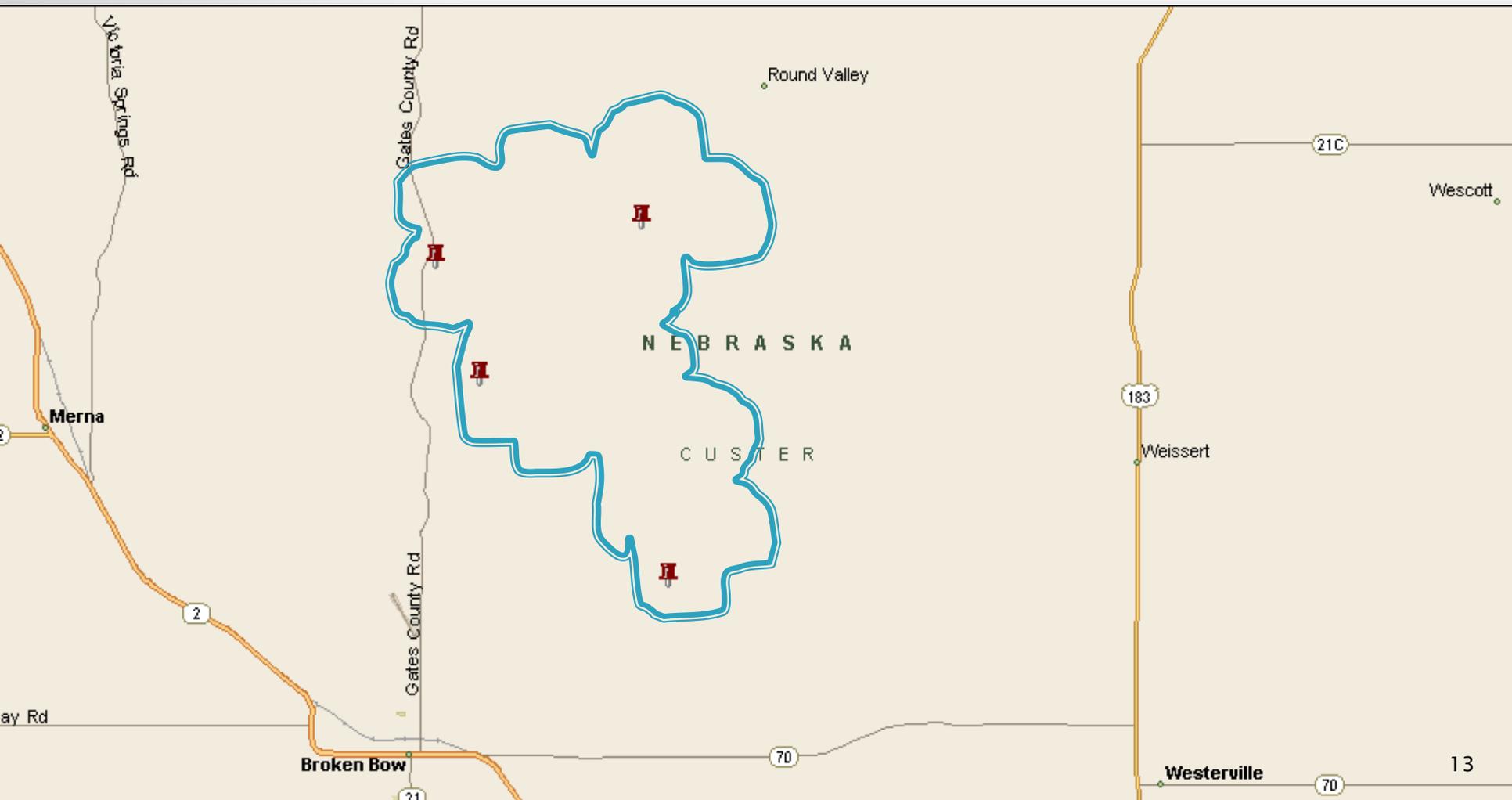
- ▶ Under Construction
- ▶ 2 of the turbines on the northern edge of the farm
- ▶ Located Northeast of Petersburg, viewable from town



Broken Bow Wind - PPA- Current State

Overview

Proposed Footprint



Original Springview units were sold and removed and plans are to use the site for the new Springview II

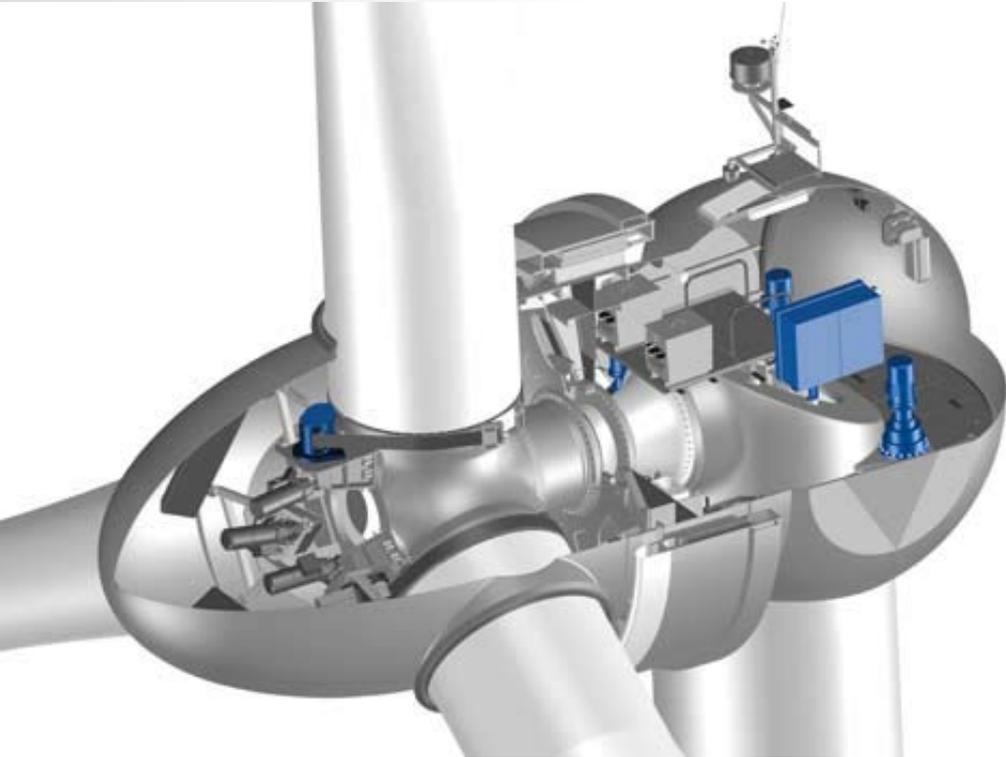
Original Springview



Springview II



Springview II



Wind PPA - Current State

	Elkhorn Ridge		Crofton Hills		Laredo Ridge		Broken Bow		Springview II**	
	80 MW		40 MW		80 MW		80 MW		3 MW	
	Share	%	Share*	%	Share*	%	Share*	%	Share	%
NPPD	40	50.0	20	50.0	61	76.3	43	53.8	3	100
OPPD	25	31.3	13	32.5	0	0.0	18	22.5		
MEAN	8	10.0	4	10.0	10	12.5	10	12.5		
LES	6	7.5	3	7.5	8	10.0	8	10.0		
Grand Island	1	1.3	0	0.0	1	1.3	1	1.3		

*Planned

**Plans for OPPD, MEAN, LES, Grand Island and KBR Rural PPD to share in the project

Wind PPA - Current State

	Elkhorn Ridge	Crofton Hills	Laredo Ridge	Broken Bow	Springview II
Turbine Mfg.	Vestas	Gamesa*	General Electric	General Electric*	Vensys
Size - MW	3	2	1.5	1.5	1.5
Number	27	20	54	54	2
In Service	March 2009	10/2011*	1/2011*	12/2012*	7/2011*
Comments	Gearboxes being replaced	Road Construction Planned late 2010	Under construction	Potential for expansion	Direct Drive First Katana Summit (Columbus, NE) Towers in Nebraska

*Planned

Norfolk Operations Center





- ▶ **NPPD**
 - SunCarrier 45.6kW automatic tracking system
 - Completed September 2010

Questions?

