



Utility-Scale Solar Overview

November 17, 2018

Confidential and Proprietary

Why Ranger's Utility-Scale Solar Projects?

- **Price Stability**– Ranger projects, as with all solar PV, will insulate customers from the price sensitivity that coal and natural gas generation has experienced.
- **On-peak Production** – Ranger projects will generate power with a high correlation to peak demand hours, seasonal and daily, and at pricing competitive with traditional forms of energy.
- **Lower Development Risk** – Ranger has experienced much less public opposition and environmental issues with solar projects than wind projects. Ranger has a strong team with the expertise to successfully complete the interconnection and permitting processes.
- **ITC Expiration & PPA Pricing** – Ranger projects are in a strong position to capitalize on federal tax benefit (ITC) prior to expiration. Projects are in the 2017 SPP queue cluster; those projects are expected to be among the last to receive interconnection agreements in time to qualify.
- **Strong Grid Integration** – Ranger projects are located at robust points within the SPP transmission system – away from congestion and close to load centers.

Ranger Power Overview

- **Ranger Power (“Ranger”)** one of the most successful clean energy teams in the country—founders have developed over 3,000 MW of operating projects across the US
- Ranger team brings vast expertise to its portfolio of well-sited projects with community support that delivers reliable, on-peak, and affordable power
- Ranger has a time-tested approach to development with a proven commitment to working closely with landowners and communities to bring new investment and clean energy to the region
- Ranger has a particular focus on long term partnerships with public power, coops, and municipals. Ranger has recently executed two 99 MW 30 year solar (198 MW) PPAs with Wabash Valley Cooperative for on-peak solar power located in Southern Illinois

Utility-Scale Costs Have Dropped Significantly

Solar PV project costs fell by 19% from 2016 to 2017, and by 86% over the last 8 years, driven by

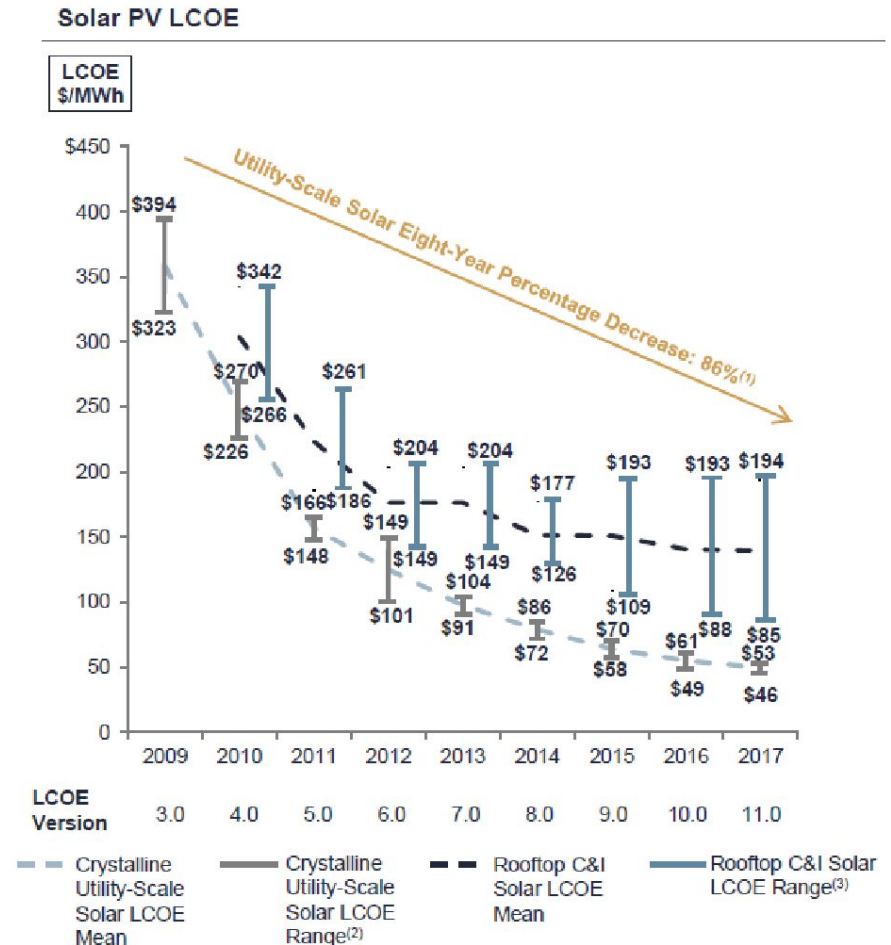
- Highly-competitive global solar panel manufacturing
- Higher-efficiency solar cells & improved plant design
- Reduced commodity needs (e.g. silicon, steel)
- Efficient construction techniques
- Increased competition among input suppliers

Solar PV plants have low operating costs relative to other generation technologies; lower capital costs have translated into significant declines in pricing.

Note: LCOE is a proxy for PPA prices

Source: Lazard Levelized Cost of Energy 2017
<https://www.lazard.com/perspective/levelized-cost-of-energy-2017/>

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Ranger Projects Well Positioned to Maximize ITC

Solar Investment Tax Credit (“ITC”) will step down beginning in 2020

- 30% of capital cost eligible through 2019, falling to 10% in 2022 (26% in 2020, 22% in 2021)
- Solar projects derive considerable value from the federal tax credit, resulting in lower PPA rates

IRS Continuous Construction ruling in 2018 means construction start, rather than COD, will determine ITC qualification

- For example, project with construction start in 2020, completed in 2022, would qualify for 26% rather than 10%
- Ranger is also able to utilize short-term non-utility offtakers to facilitate later CODs

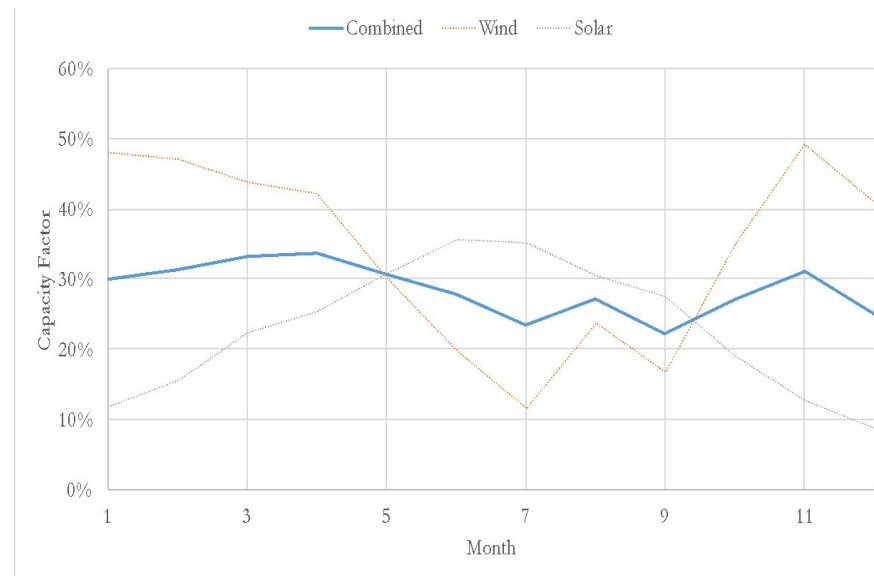
Ranger Power Nebraska project (230 MW) will be among last in State to qualify for full ITC

- SPP Queue Position DSIS-GEN-2017-055; DISIS study expected to start October 2018
- Interconnection agreements expected in fall 2019

New Solar and Existing Wind Can be Complementary

- The lack of coincidence between the solar and wind resources means solar can help balance a wind-heavy portfolio with generation during daylight hours during the summer.

- **Coincident generation and load** – Solar generation is highest during the middle of the day, and during the summer, which correlates with periods of high demand. Higher-efficiency solar cells & improved plant design.
- **Complementary to existing wind** – Wind generation typically peaks during the night, early morning and early evening hours, and during the winter.
- **Strong Capacity Credit in SPP** – Wind has hovered around a 12-15% Capacity Credit. Solar has 50% credit.



- Additionally, solar in the portfolio can help to achieve a higher net capacity factor (NCF) and provide a more efficient use of generation facilities.

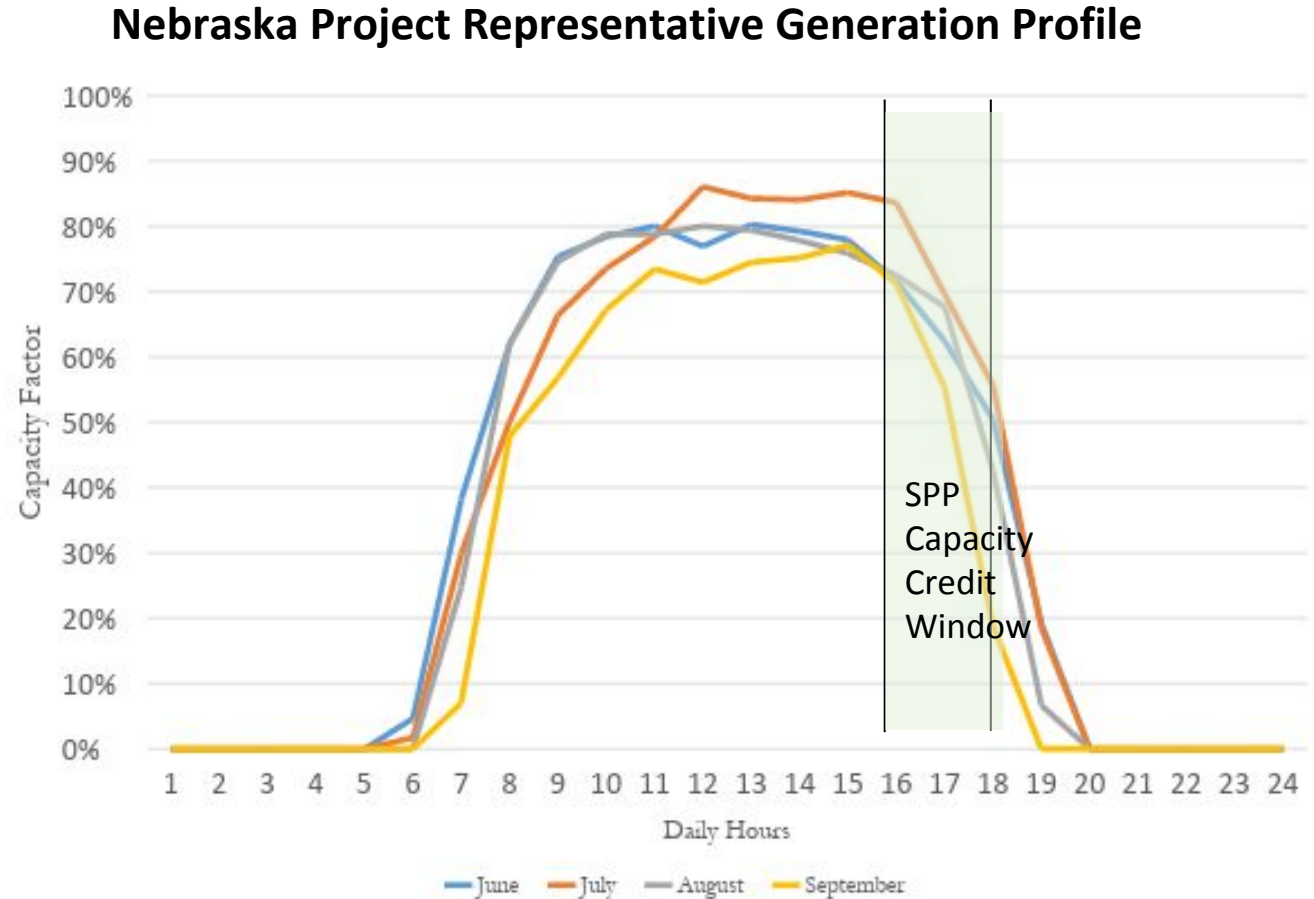
Solar Has Fewer Permitting Challenges

Issues of Concern	Impact Level	
	Wind	Solar
Visual	High, not easily mitigated	Low, easily mitigated with vegetative buffers
Shadow Flicker	High, not easily mitigated	N/A
Sound	High, larger wind turbines have become louder and harder to comply with local/state sound codes	Low, solar panels emit no sound
Migratory Birds	High	Low
Bats	High	Low
Gold and Bald Eagles	High	Low

- Increasingly local opposition has successfully stymied wind projects and implemented moratoriums or denied permits.
- Ranger's approach to community first solar development has meant that every project permitted has had the support of the local community.

Solar Has Significant Resource Adequacy Value in SPP

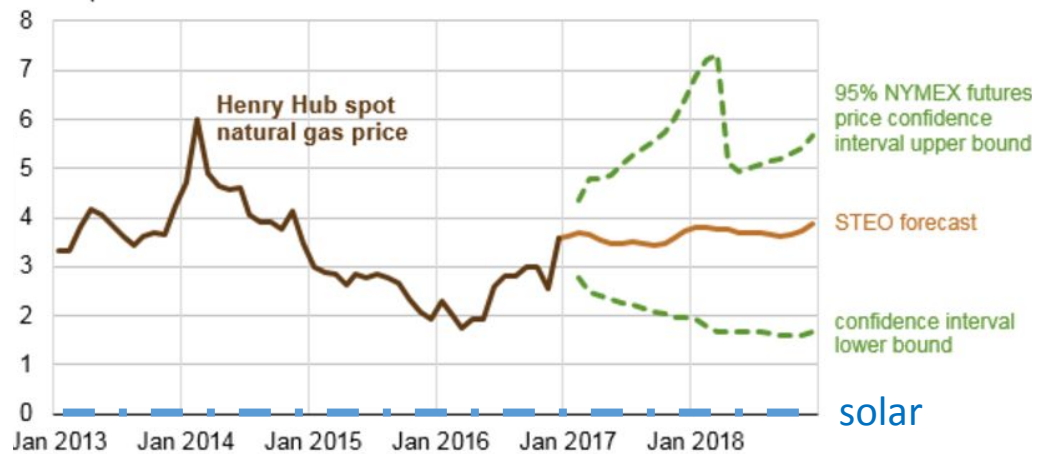
- The on-peak profile of solar projects provides considerable capacity value
- Production forecasts suggest that solar in Nebraska can achieve capacity values of 70% or higher



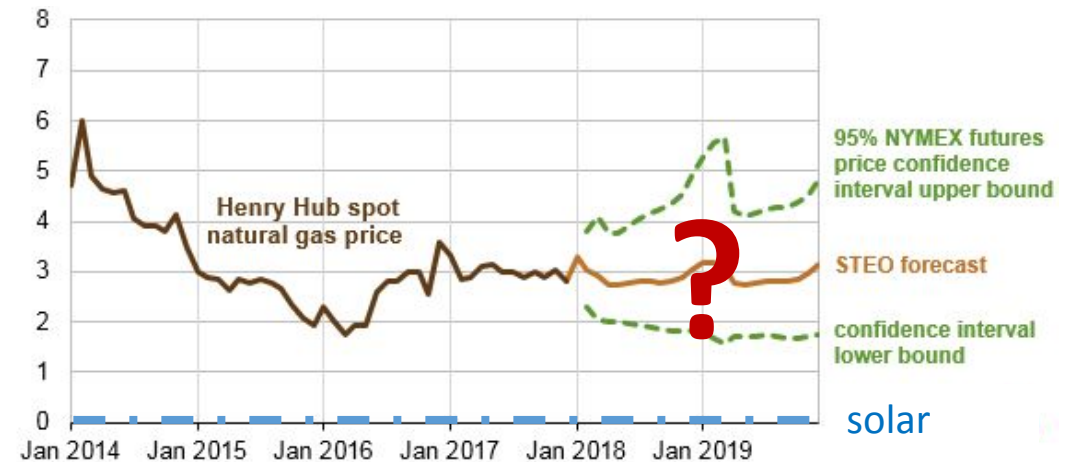
Solar Does Not Experience the Fuel Price Volatility of Natural Gas

- Despite the discovery and extraction of vast natural reserves, US natural gas prices have exhibited significant volatility over the years.
- Solar PV uses the sun as its source of free fuel.

2017 EIA Forecast

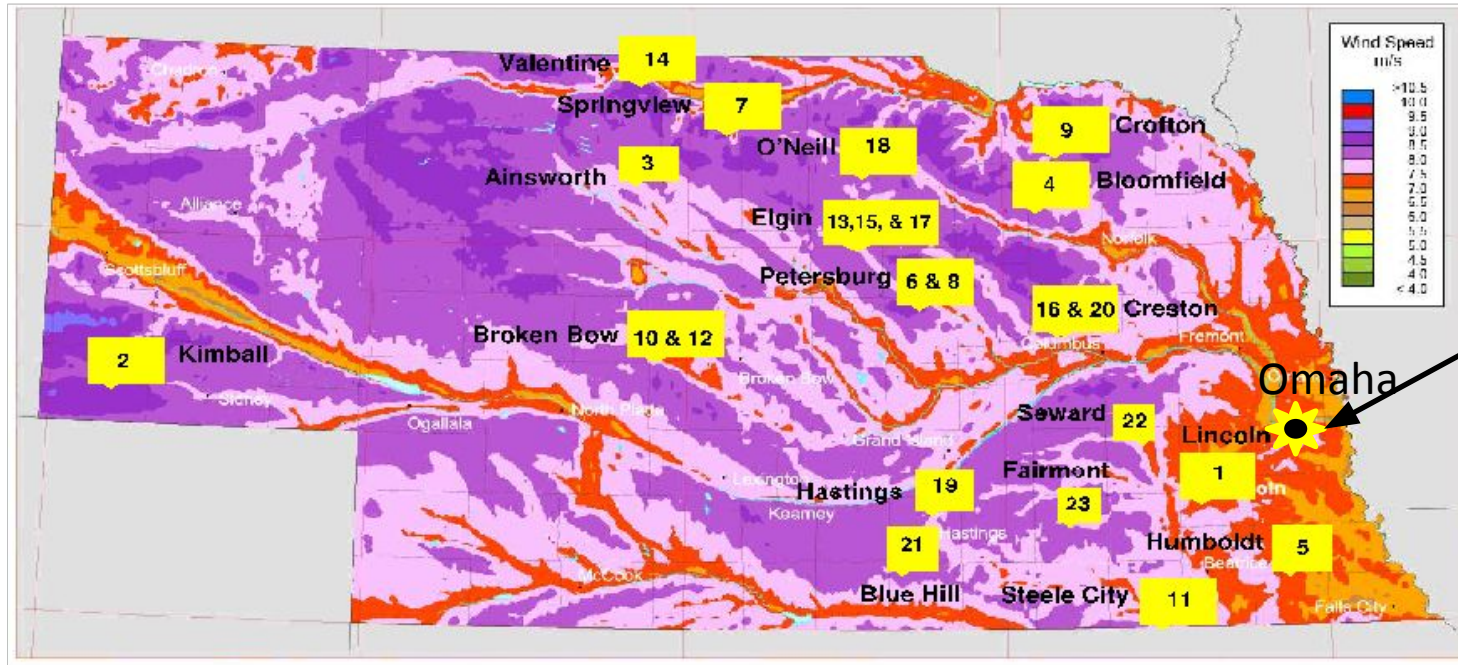


2018 EIA Forecast



Source: US EIA
<https://www.eia.gov/naturalgas/>

Ranger Projects Are Close to Load, Away from Congestion



- Ranger's solar projects are located near load – and away from areas congested by wind.
- Concentration of existing wind projects away from Southeast part of the State on weak part of transmission system and away from load.

WIND DEVELOPMENT IN NEBRASKA 80 Meter Wind Overlay

REVISION: August 2018



PROJECT	YEAR	MW	OWNER	PARTICIPANTS
1 Salt Valley	2008/09	1.32	IES	IES
2 Kimball	2018	30	Aspenall Energy, LLC	NIFAR
3 Ainsworth Wind Energy	2005	39.4	NPPD	NPPD, OPPD, MEAN, S, JFA* *Financial Participation REC
4 Platte River Wind, LLC	2009	80	NRG Energy	NPPD, OPPD, MEAN, IES, GI
5 Flat Water Wind Farm, LLC	2010	60	Gestamp Wind N.A.	OPPD
6 Laredo Ridge Wind Farm	2011	80	NRG Energy	NPPD, IES, MEAN, GI
7 Springview II/Bluestem, LLC	2011	3	Bluestem, LLC	NPPD, OPPD**, IES**, Grand Island**, ** will receive RECs
8 TPW Petersburg, LLC	2011	40.5	Gestamp Wind N.A.	OPPD
9 Crofton Bluffs Wind Farm	2012	12	NRG Energy	NPPD, OPPD, IES, MEAN
10 Broken Bow Wind, LLC	2012	80	NRG Energy	NPPD, OPPD, IES, GI
11 Steele Plate Wind	2014	74.8	NewEra	NPPD
12 Broken Bow II	2014	75	Semptra	NPPD, OPPD
13 Prairie Breeze	2014	200.6	Invenery	OPPD

PROJECT	YEAR	MW	OWNER	PARTICIPANTS
14 Valentine Wind LLC	2014	1.85	Bluestem Sandhills	City of Valentine, NF
15 Prairie Breeze I	2015	73.39	Invenery	IES
16 Crofton Ridge LLC	2015	6.8	Bluestem Energy Solutions	Loup Public Power District
17 Prairie Breeze III	2016	35.8	Invenery	City of Grand Island (sharing with Nebraska City and Neligh)
18 Grand Prairie	2016	400	Jericho Industries	OPPD
19 Central Comm. College-Hastings	2016	1.7	Central Community College-Hastings	Central Community College-Hastings
20 Crofton Ridge II	2017	6.4	Bluestem Energy Solutions	Loup Public Power District
21 Cantonwood I	2017	80.06	NewEra	Beatrice, Triunfo, South Sioux City, Northland Public Power District
22 City of Seward	2017	1.7	Bluestem Energy Solutions	City of Seward
23 Hillmore County Wind Farm	2018	6.0	Bluestem Energy Solutions	Perennial Public Power District
		~1451.62	Total MW	

Note: 1998 Springview Wind Energy 1.32 MW and 2001 Valley .66 MW retired.



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