

# Transmission Enabled Wind

## a Western Spirit Case Study

March 2, 2022





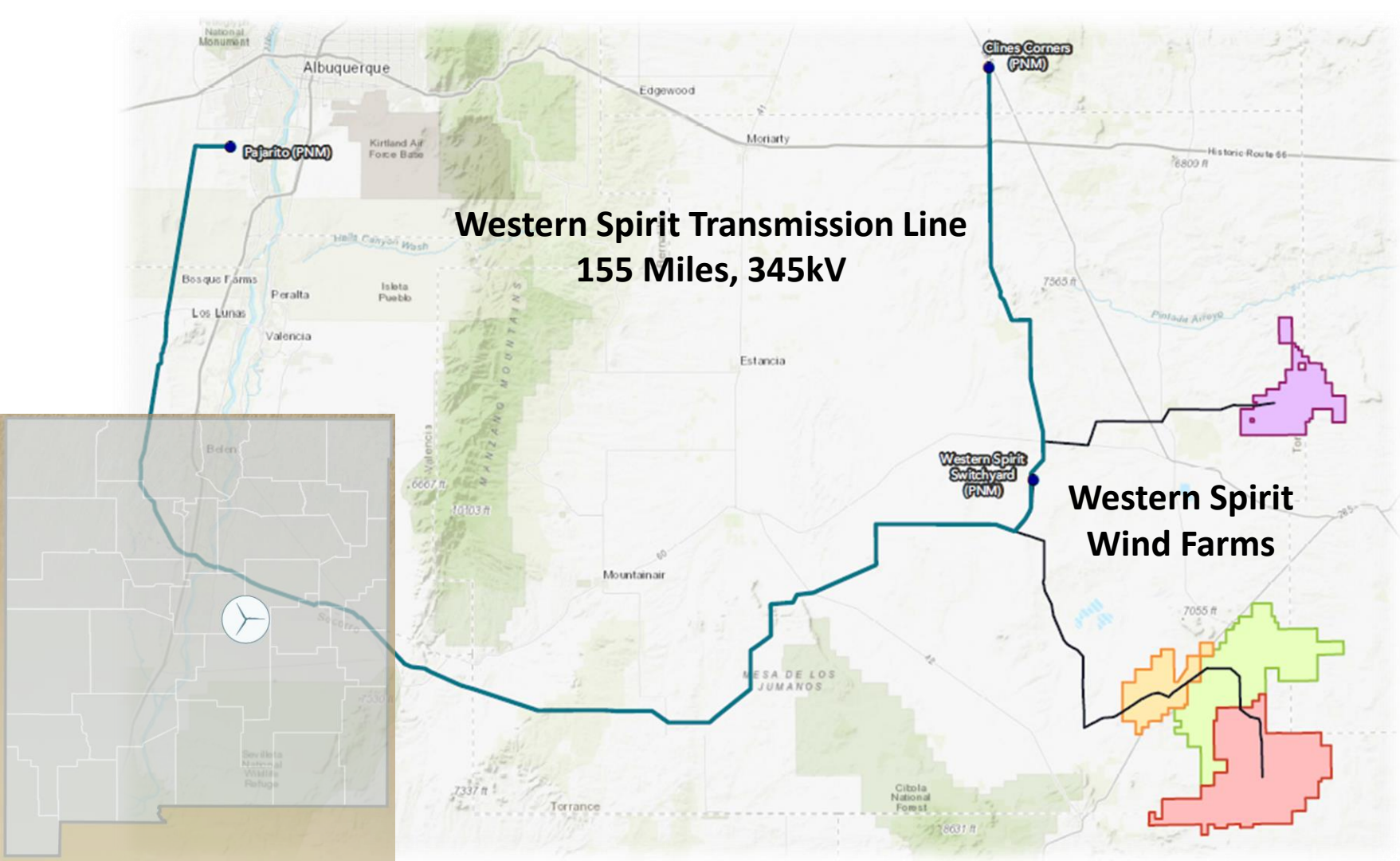
# Western Spirit

FEBRUARY 23, 2022



Pattern

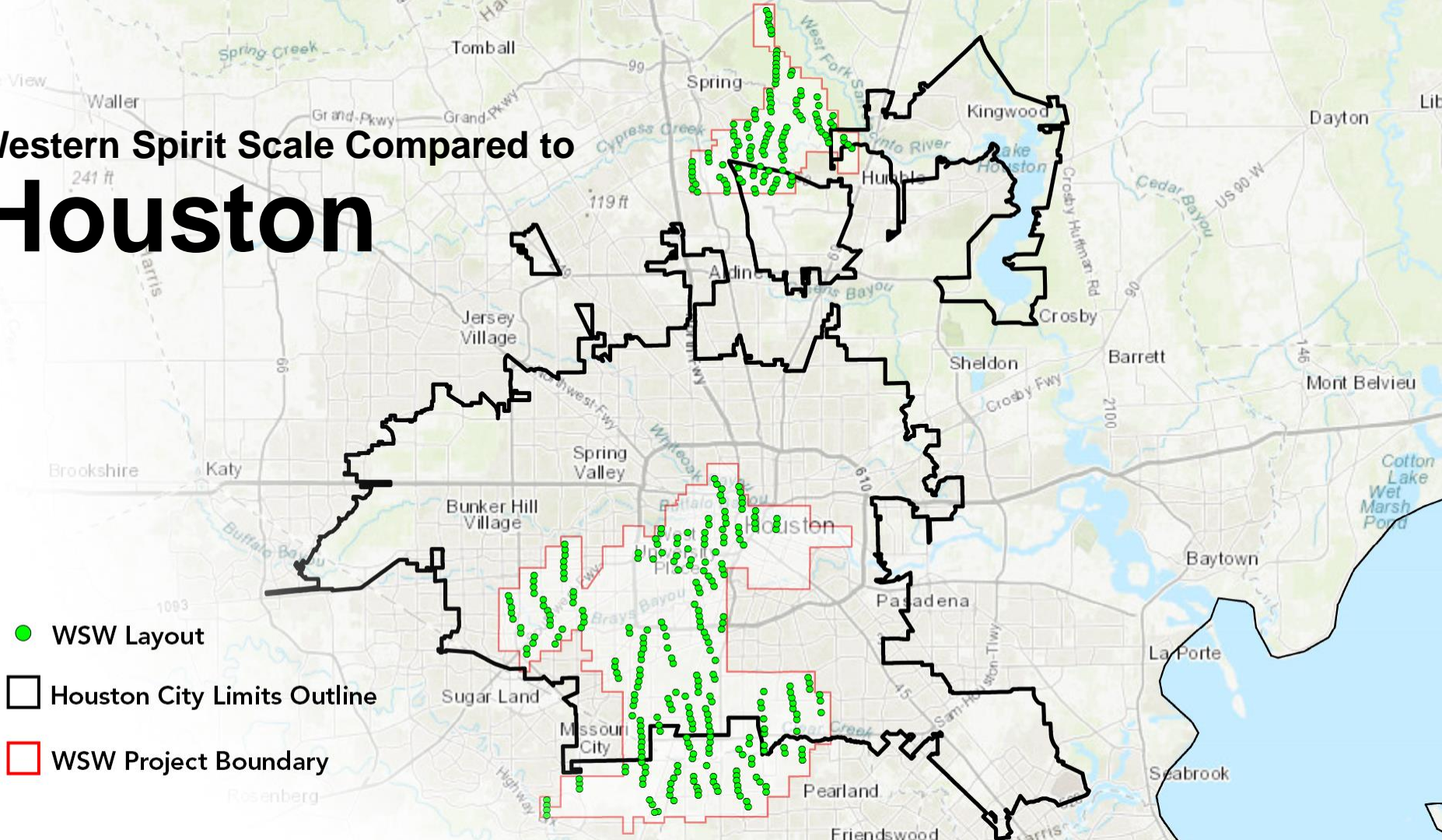




# Western Spirit Transmission Line 155 Miles, 345kV

## Western Spirit Wind Farms

# Western Spirit Scale Compared to Houston



- WSW Layout
- Houston City Limits Outline
- WSW Project Boundary

# Total onsite construction manhours worked **2.1 million**

1,000 people working 40 hrs  
a week for an entire year



Peak number of  
construction workers  
**~1,500**



Total above/below ground  
conductor installed

**2,115 miles**

Installing a continuous cable from SF to Houston



Transmission structures  
installed

**~1,100**

## Western Spirit Transmission Line – Project Participants

Developer	Pattern, RETA
EPC – T-Line and Switchyard	EC Source
EPC – Compensation Station	GE Grid Solutions
Operations (Build Transfer Agreement)	Public Service Company New Mexico

## Western Spirit Wind – Project Participants

Developer	Pattern
Interconnection	EC Source
Turbines	GE Renewables
EPC	Blattner Energy
Pad-Mount Transformers	WEG
Main Power Transformers	HICO
Turbine Operations Agreement	GE
BOP Operations Agreements	Pattern Operators



## Western Spirit Transmission Line and Wind Farm - Investors

HSBC	Left Lead, Sole Coordinator Lead Arranger, Construction Administrative Agent and LC Issuing Bank
CoBank	Term Loan Administrative Agent and Bookrunner, Mandated Lead Arranger, Joint Bookrunner
CIBC	Mandated Lead Arranger, Joint Bookrunner, LC Issuer
MUFG	Mandated Lead Arranger, Joint Bookrunner, LC Issuer
SocGen	Mandated Lead Arranger, Joint Bookrunner, LC Issuer
Santander	Mandated Lead Arranger, Joint Bookrunner
HSBC	Tax Equity Investor
Bank of America	Tax Equity Investor
GE	Tax Equity Investor



**\$1.32bn  
Construction Loan**

**\$437m  
Letter of Credit**



# Single Turbine Manufacturer

# 377 GE Units

Three hub-heights, two models

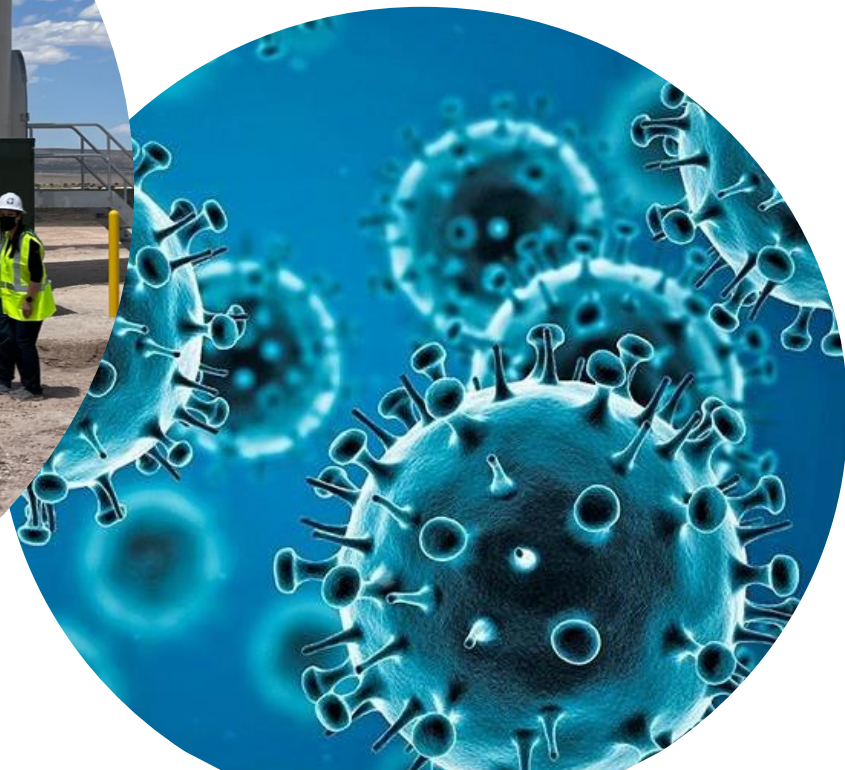


Project	Turbine Model	MW Rating	HH	Qty.	MW Subtotal
Red Cloud	2.82-127	2.82	114	124	349.68
Duran Mesa	2.3-116	2.3	80	4	105.08
	2.82-127	2.82	89	34	
Tecolote	2.3-116	2.3	80	9	271.68
	2.82-127	2.82	89	89	
Clines Corner	2.3-116	2.3	80	11	324.22
	2.82-127	2.82	80	58	
	2.82-127	2.82	89	48	

# Unique Challenges & Opportunities

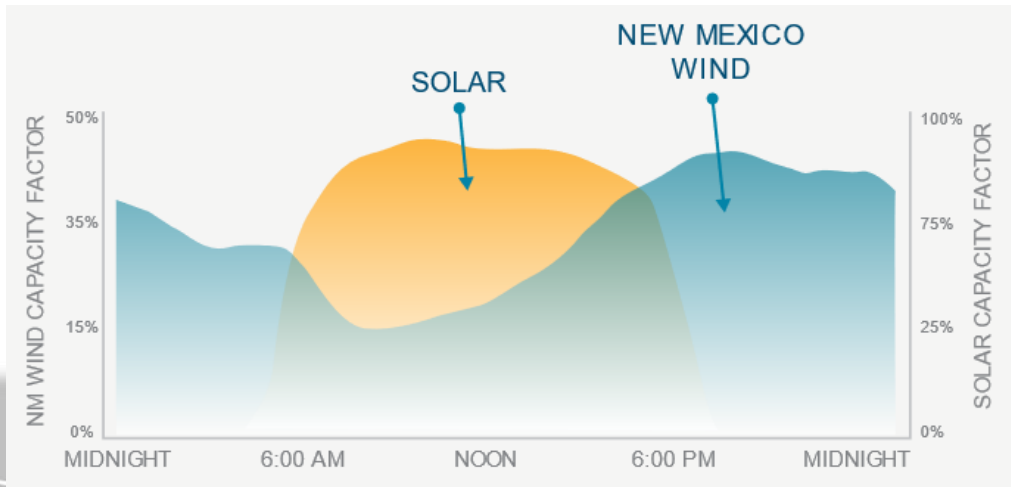
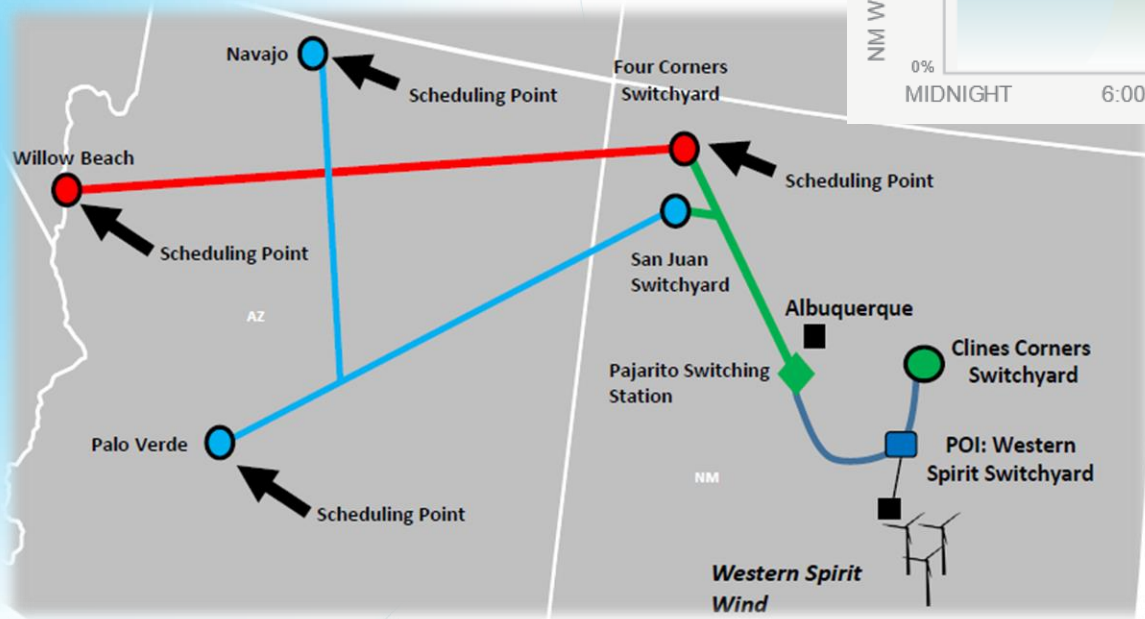


# COVID 19





# Transmission Sharing & Scheduling



# Relationships



# Creative Spirit & Energy





# Chapter 3 - SunZia

