



5,200 MW and counting

# Transmission at RES Americas

Jerry Vaninetti, Sr. VP Transmission  
Wyoming Infrastructure Authority Board Meeting  
Cheyenne, WY - May 10, 2011



# RES Americas

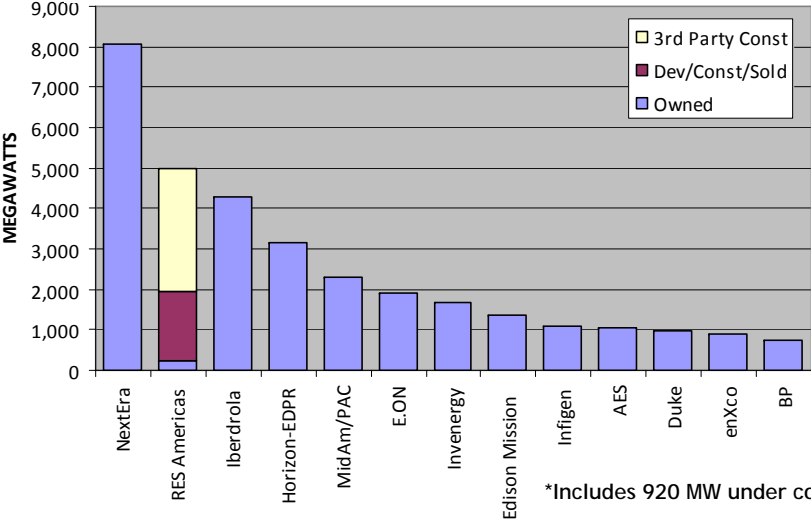


5,200 MW and counting

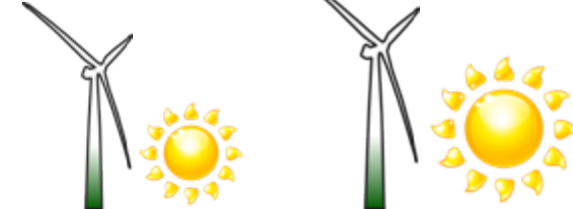
- Privately-held
- Business Model: Develop & Construct
- Wind & Solar
- Most projects sold to utilities & investors
- Staff of ~300
- 5,200 MW to date
- Pipeline of 10,000 MW



Wind MW owned (from AWEA 2010) showing MW installed by RES\*



\*Includes 920 MW under construction



## History of RES Americas



1982

- Renewable Energy Systems Limited (RES Ltd) is founded and is affiliated with Sir Robert McAlpine Group.



1992

- RES Ltd constructs its first project.



1999

- RES Americas constructs its first US project.



2001

- RES Americas co-developed and constructed the 278 MW King Mountain Wind Ranch, the largest wind project in the world at the time it was constructed.



2007

- RES Americas' US construction surpasses 2,000 MW.
- Commercial operations of RES Americas' first owned project Whirlwind in the US.



2010

- RES Americas continues to develop wind and solar; begins work on energy storage.



2011

- RES Americas constructs its first solar project; one of the largest in the country.

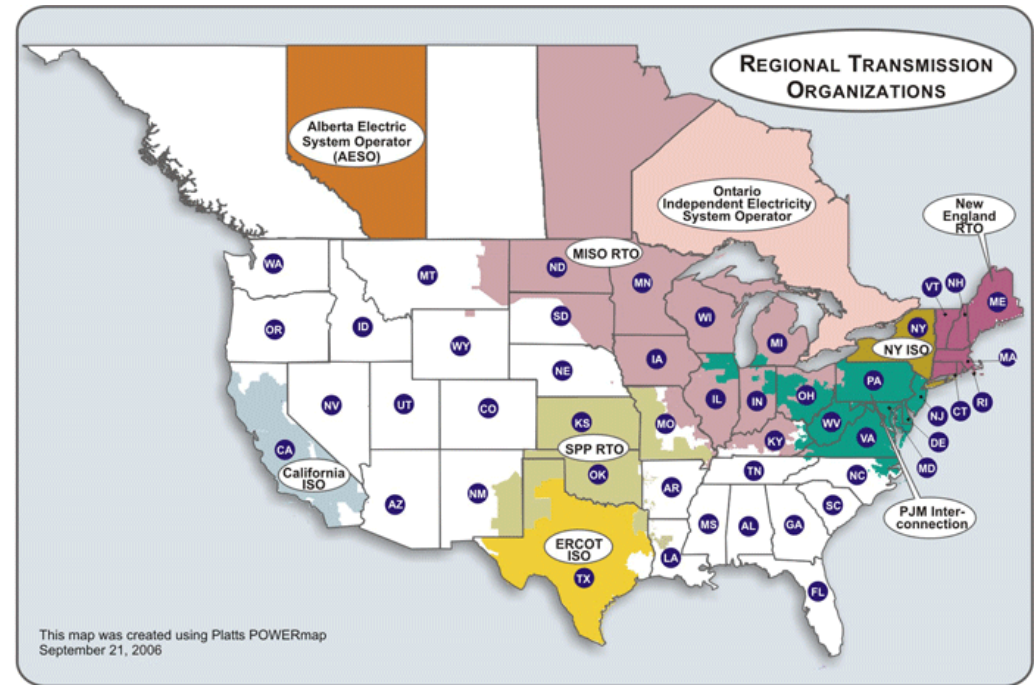
- RES Americas has a long history in renewable power having constructed and/or developed over 5,200 MW (10% of US Installed Capacity) of renewable energy projects in North America.
- Leveraging its experience in renewables, RES Americas will construct its first solar project in 2011.
- RES Americas has identified further opportunities in transmission and energy storage.

# RES' Transmission Team



5,200 MW and counting

- All Regions Covered
  - Ravi Bantu
  - Michael Hutson
  - Nehal Diveker
  - Cory Blair
- Identify and perfect transmission solutions for RES' projects
  - Generation interconnections
  - Transmission Service
- Tracking proposed transmission projects

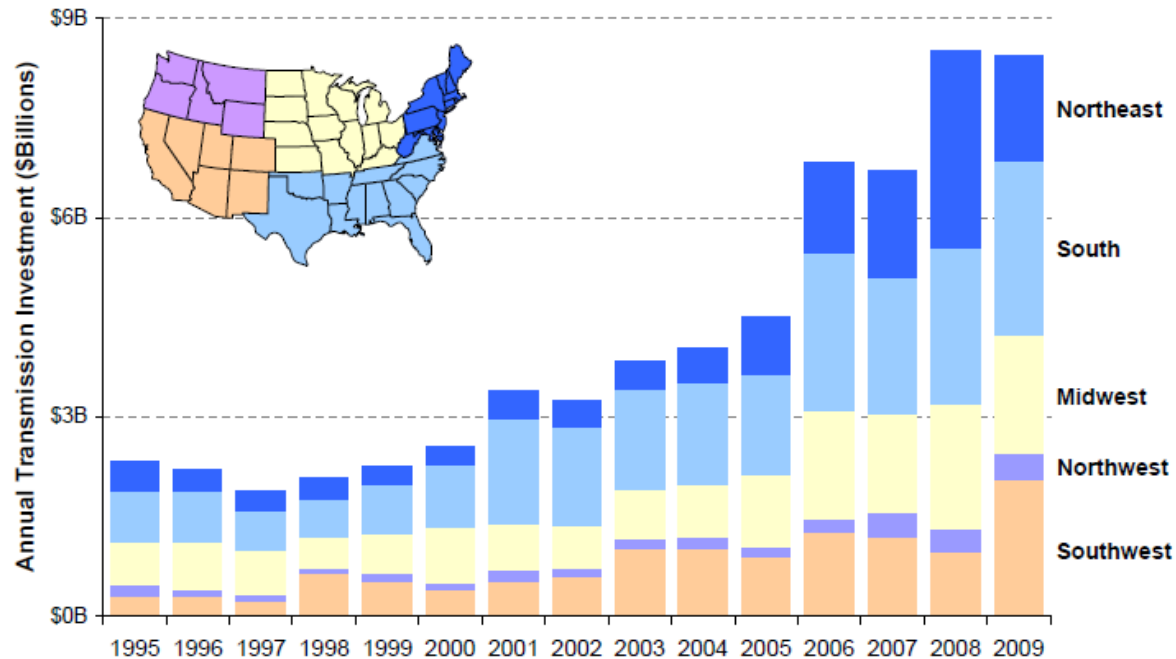


# Transmission Investment

(Brattle Group, 2010)

- Decades of under-investment
- Recent resurgence in investment
- Needs
  - Serve Load
  - Reliability
  - Wholesale markets
  - Renewables

Annual Transmission Investment of Investor-Owned Utilities by FERC Subregion



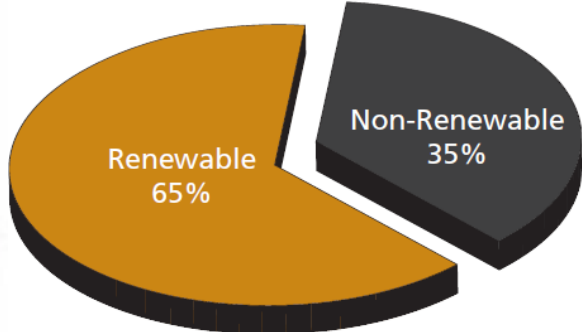
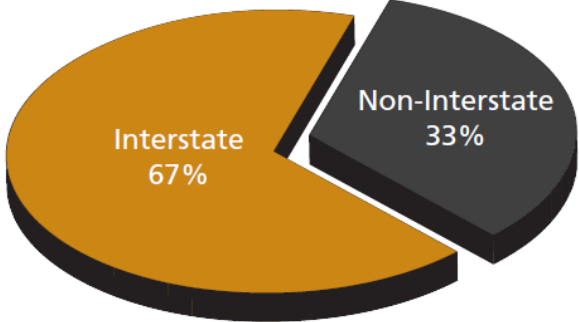
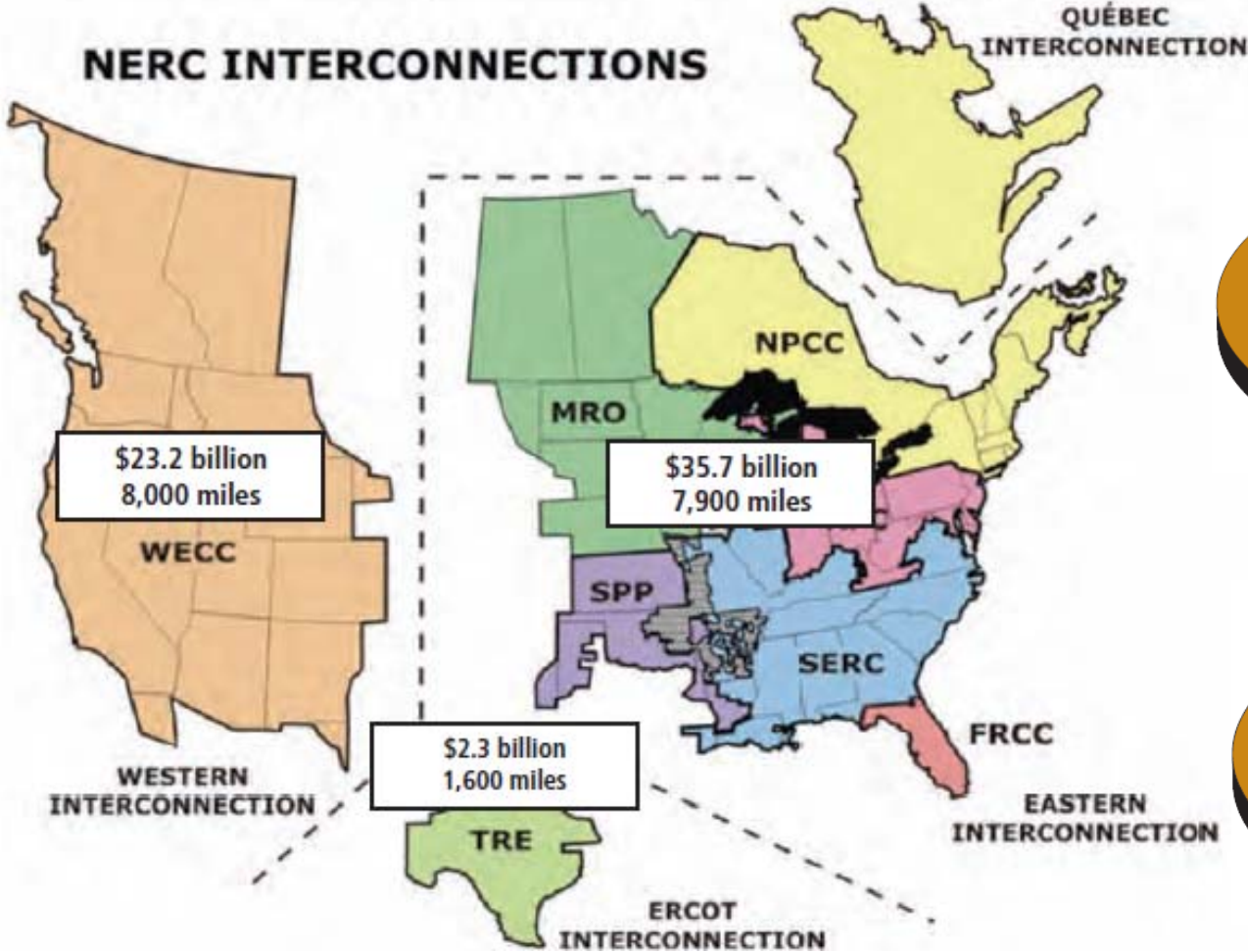
Source: The Brattle Group based on FERC Form 1 data compiled by Global Energy Decisions, Inc., The Velocity Suite.

# 10 Year Utility Transmission Plans

(EEI & Navigant, 2011)

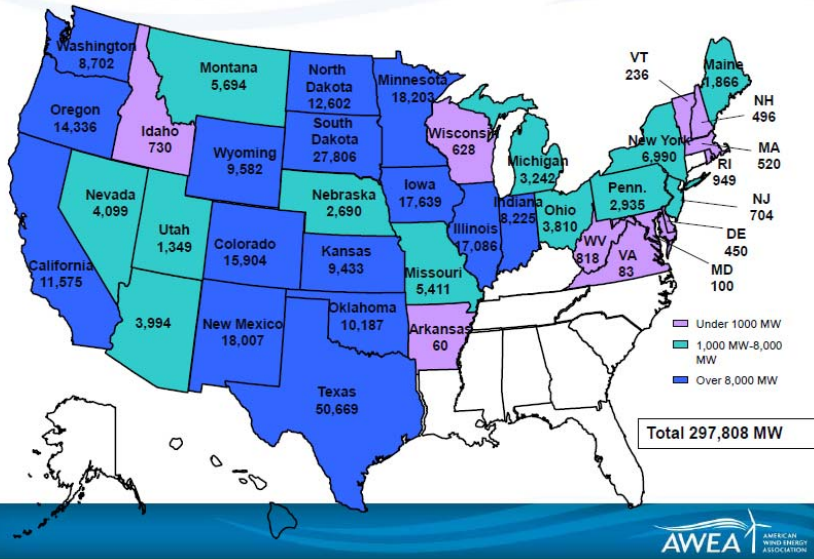


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# The Case for More Transmission

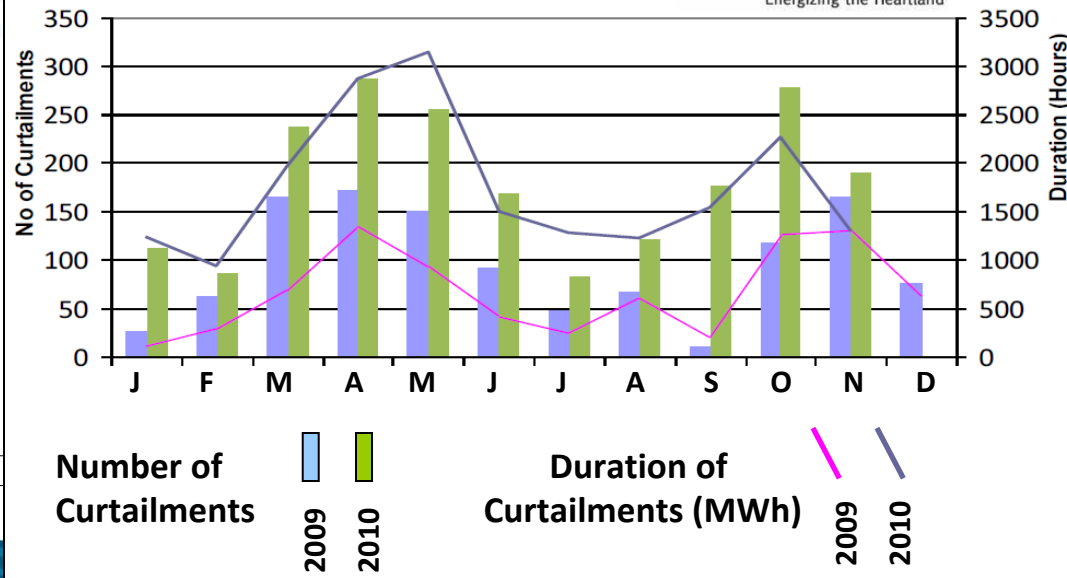
Wind Power in Queues (MW)



- Wind interconnection queues are hopelessly backlogged

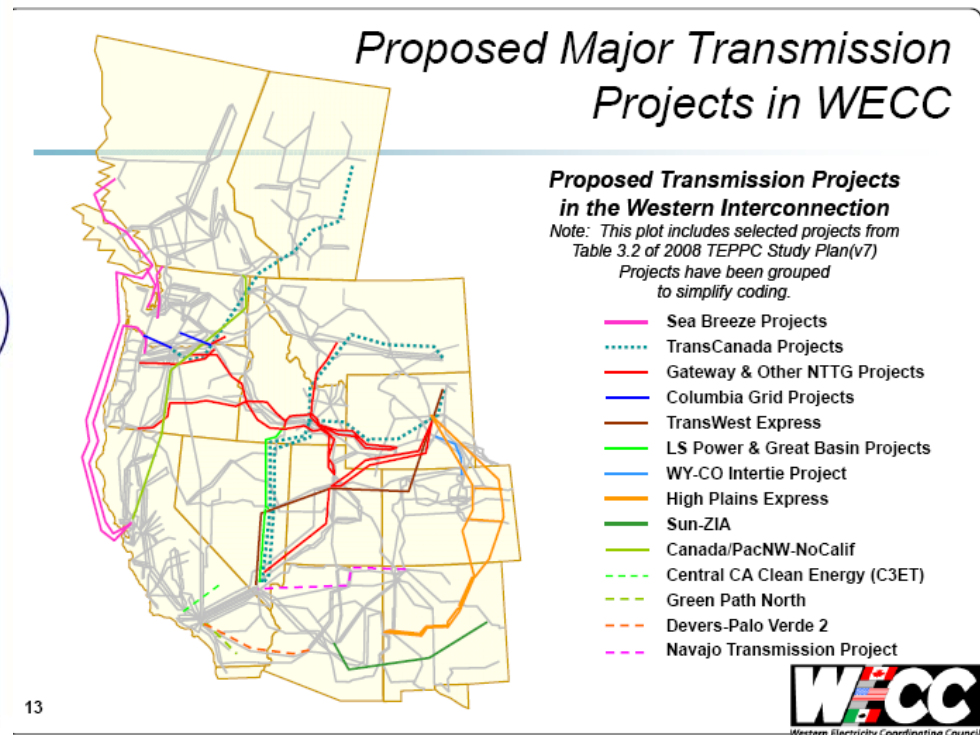
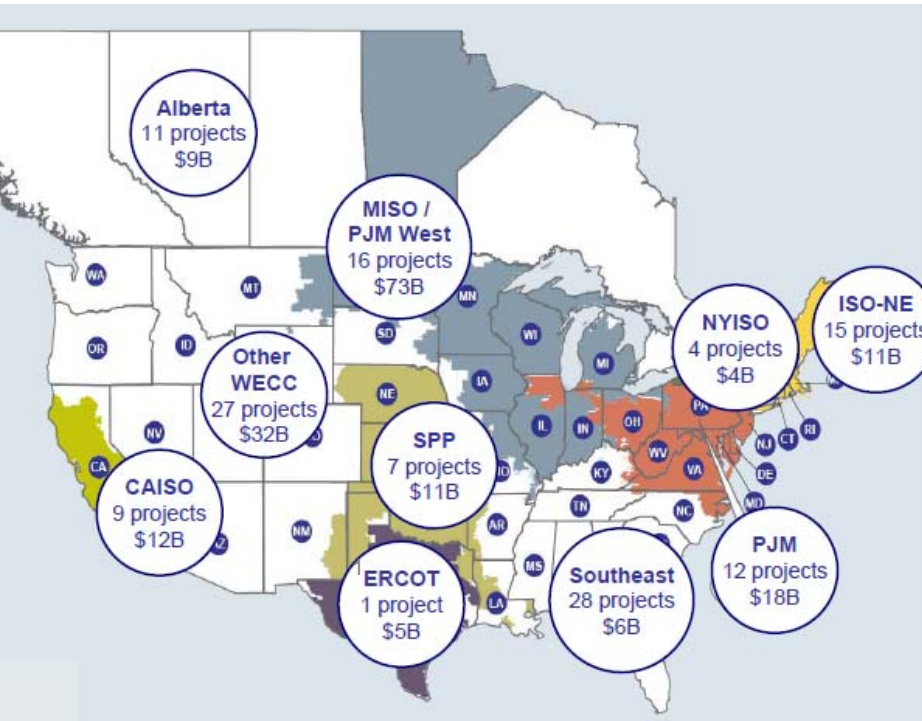
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2009 – 2010 MISO Curtailments MidwestISO Energizing the Heartland



- Transmission Congestion = Curtailments
  - Problems in ERCOT, MISO & Pacific NW

# Proposed Transmission Projects



Source: Map from FERC. Project data collected by *The Brattle Group* from multiple sources and aggregated to the regional level.

- Utilities dominant
- Competition by Independents
- Merchant & Regulated Models
- FERC rulemaking
- CREZ precedent in Texas

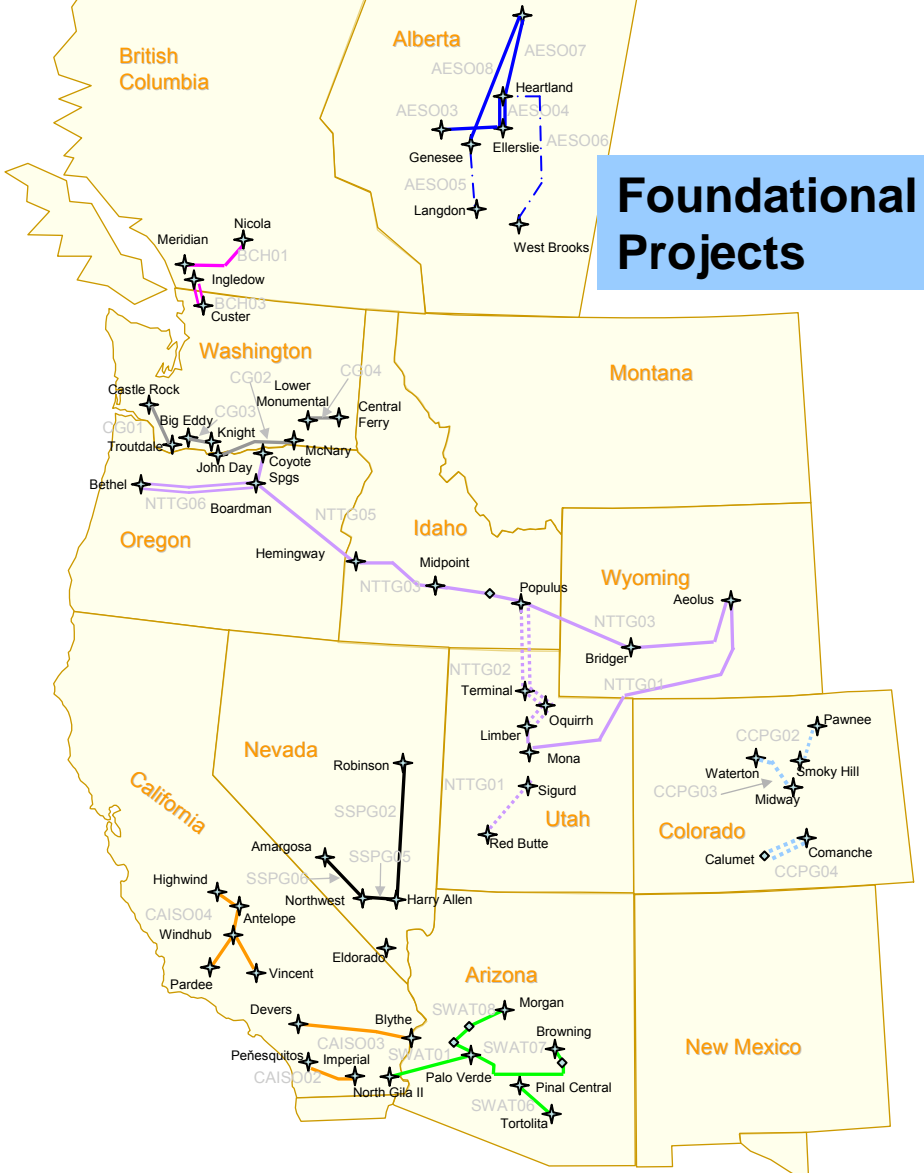


# WECC Transmission Projects (SCG)

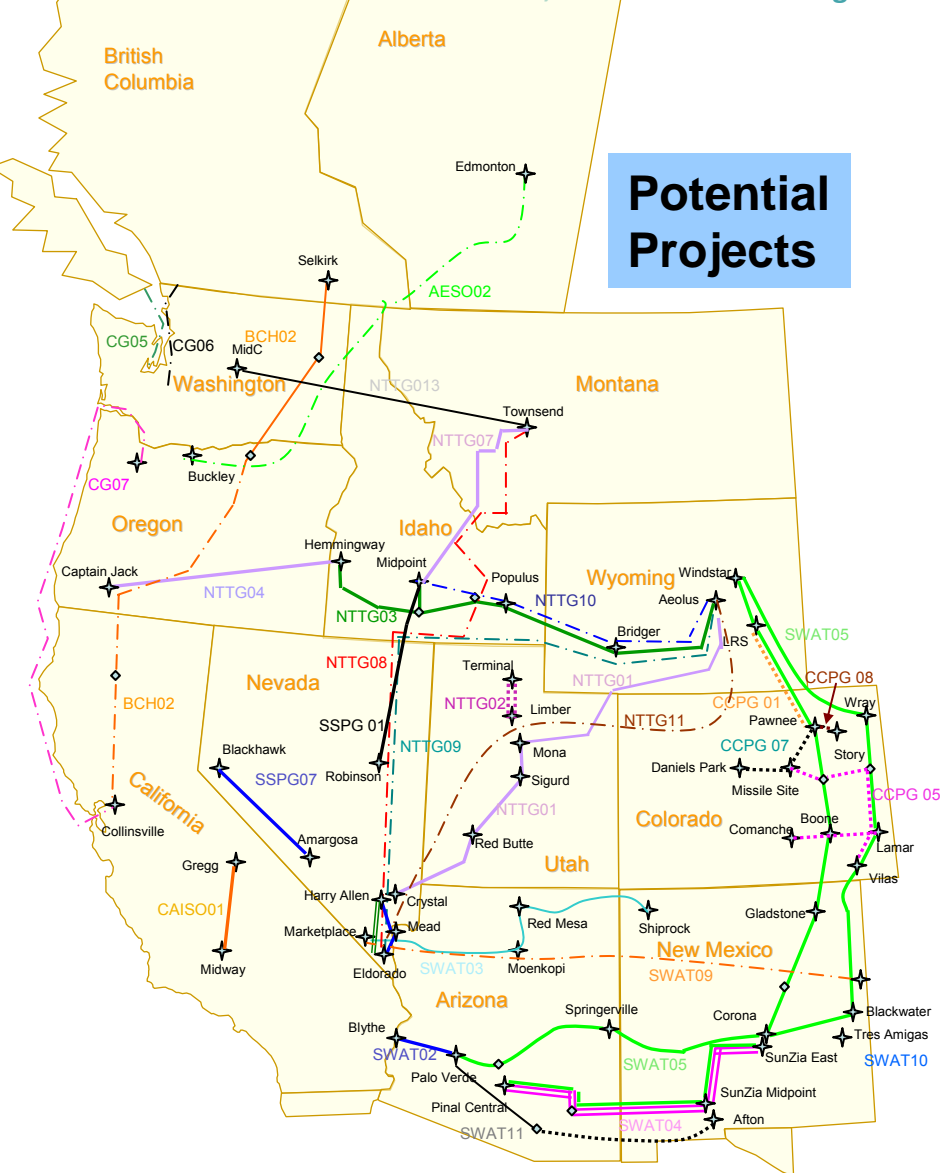
(≥345 kV by 2020)



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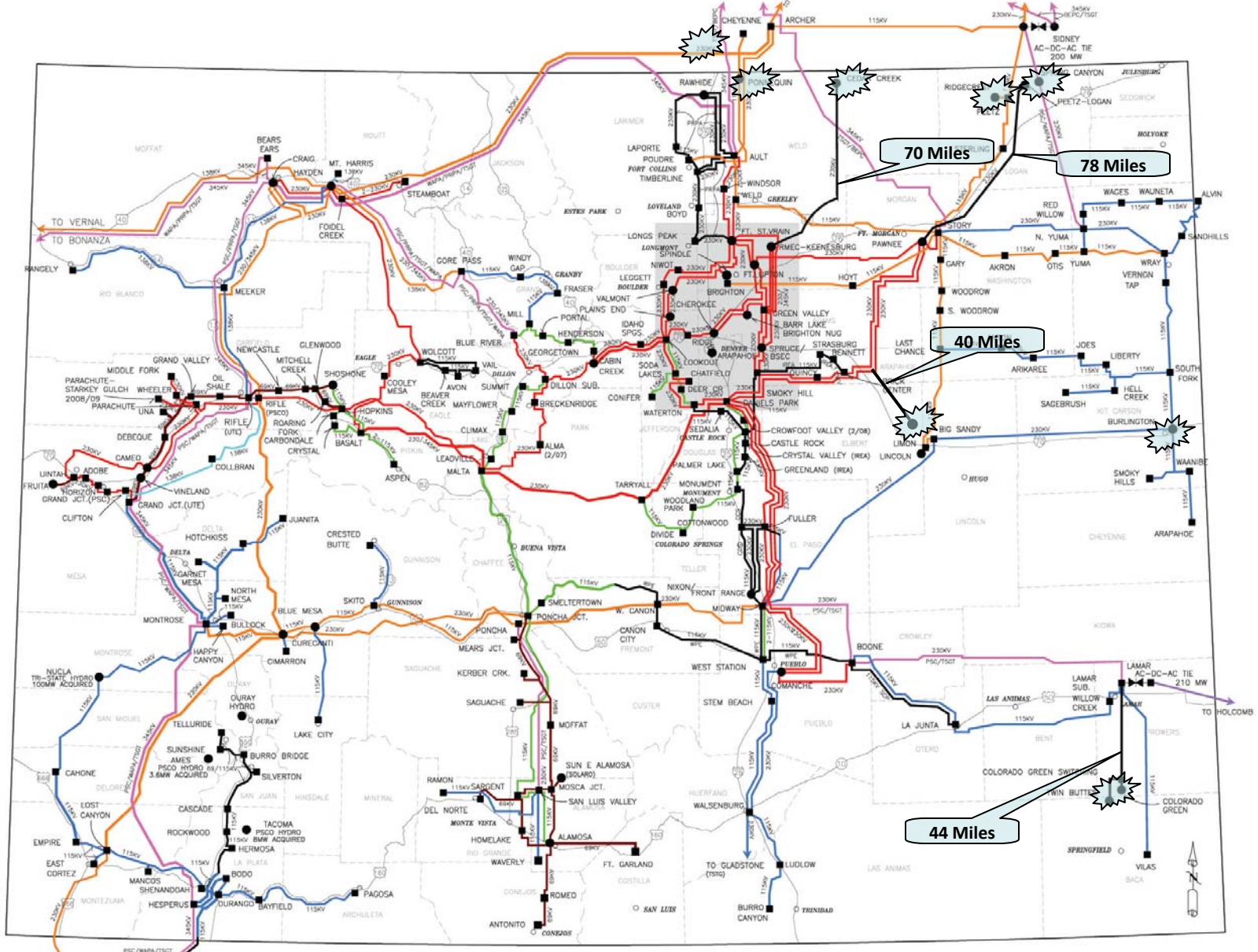
**Foundational Projects**



**Potential Projects**

# Genties for Wind – Colorado Example

ng



# RES Americas Genties



Project Name, Location	Wire Size	Voltage	Miles of OHL Installed	Nameplate Capacity (MW)	Project Owner
Marengo I, WA	795 kcmil Drake	230kV	4	140.4	PacifiCorp
Marengo II, WA	795 kcmil Drake	230kV	7.3	70.2	PacifiCorp
High Plains, WY	795 kcmil Drake	230kV	10.5	99.0	PacifiCorp
Dunlap, WY	795 kcmil Drake	230kV	12	111.0	PacifiCorp
Cedar Point, CO	2x954 kcmil	230kV	42	250.2	Enbridge
Greenwich, Canada	795 kcmil Drake 556 kcmil	230kV 34.5kV	6.2 24	98.9	Enbridge
Bull Creek, TX	1590 kcmil Lapwing	138kV	29.5	180.0	Eurus Energy
Woodward Mountain, TX	336.4 kcmil Linnet	138kV	18	159.7	FPL
King Mountain, TX	795,477,336,269 kcmil 477, 210 kcmil	138kV 34.5kV	19 8	278.2	FPL
Whirlwind, TX	666.6 kcmil	69kV	20.2	59.8	RES Americas
Buffalo Gap III, TX	2x963 kcmil	138kV	13	170.2	AES
Mountain Wind I, WY	795kcmil	138kV	12.3	60.9	Edison Mission Group
Wild Horse I, WA	1272 kcmil Bittern	230 kV	9	228.6	Horizon Wind Energy
Butler Ridge, WI	795 kcmil Drake	34.5kV	9	54.0	Babcock and Brown
Sweetwater II, TX	795 kcmil Drake	138kV	8.6	91.5	Babcock and Brown
Sweetwater V, TX	2x795 kcmil 477 kcmil Hawk	345kV 34.5kV	7 1	80.5	Babcock and Brown
Hopkins Ridge I, WA	1272 kcmil Bittern	115kV	7.3	149.4	PSE
Lone Star-Post Oak, TX	556.5kcmil Dove	138kV	6.9	200.0	Horizon Wind Energy
So. Trent Mesa, TX	556 kcmil Dove	138kV	6.5	101.2	Babcock and Brown
Hackberry, TX	2x795 kcmil	345kV	6.4	165.6	RES Americas
Talbot, Canada	795 kcmil Drake	230kV	6.2	98.9	Enbridge
Hatchet Ridge, CA	795 kcmil Drake	230kV	3.4	103.2	Pattern Energy
Sweetwater IV(B), TX	477 kcmil Hawk	34.5kV	3	105.8	Babcock and Brown
Armenia Mountain, PA	954 kcmil	115kV	2.1	100.5	AES

