

Technical Advisory Committee - Grid Modernization

Renewable Energy Transmission Issues & Update

General Agenda

- Overview of the 2011-2012 Renewable Transmission Initiative
- Current Transmission Planning Realities
- Update on the Success of Large-scale Projects and "Zones"
- Transmission Strategy in a Perfect World

NV Energy's Renewable Transmission Initiative

The 2009 Nevada legislature passed Assembly Bill 387, making transmission development to support renewable generation public policy

"The Commission shall require the utility to include in its plan a plan for construction or expansion of transmission facilities to serve renewable energy zones and to facilitate the utility in meeting the portfolio standard established by NRS 704.7821"

- Nevada's Renewable Energy Transmission Access Advisory Committee identified specific renewable energy zones
 - Renewable energy developers
 - Environmental organizations
 - PUCN
 - State & federal agencies
 - Rural Cooperatives
 - NV Energy



In 2011, NV Energy launched the "Renewable Transmission Initiative" to support customer-driven transmission projects and reduce regulatory risks.



Abbreviated Customer-Driven Process:

- 1. Customers/developers submitted statements of interest (no fee)
- 2. All notified of cost and scope of transmission studies to be conducted, based on submitted statements.
- Customers could elect whether to participate by submitting an executed study agreement and their appropriate share of study costs
- 4. Customers would then commit to shared development and permitting costs, coupled with appropriate transmission rights.



Initiative ended in 2012

The following statement was used for trade media following the initiative:

> Based on customers' responses, the NV Energy Renewable Transmission Initiative ("RTI") has been concluded.

> Customer commitments to fund the Phase 2 permitting and Right of Way acquisition were insufficient to proceed as an aggregated customerdriven transmission development process.

> Remaining customers have been informed they may submit individual project requests for Point-to-Point Transmission Service under the NV Energy Open Access Transmission Tariff ("OATT") if they desire to continue their project(s).



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Current Transmission Planning Realities

- Planning Strategy Challenges
 - Lag
 - Renewable Portfolios (Policy Uncertainty)
 - Renewable Technology and Intermittency
 - Market Uncertainty
 - Interconnections and projects geographically concentrate



Current Transmission Planning Realities

State	Year	RPS Target	A Portland Cuentria Perdictor Cagon Costa Costa Costa Cagon Cuentria Perdictor Cagon Cuentria Perdictor Costa Costa Cuentria Perdictor Costa Cuentria Perdictor Costa Cuentria Cuentria Perdictor Costa Cuentria Cuentria Perdictor Costa Cuentria Cuentria Perdictor Costa Cuentria Cuent
California	2020 2030	33% 50%	Redding Winnenucca Legan Legan Legan Legan Legan Sorta Rosa Sarta Rosa
Arizona	2025	15%	Monterey* O Freeno. B CALIFORNIA Baterified Las Vegas CALIFORNIA Baterified Las Vegas Calaba Las Vegas Calaba Colorado Colorado Colorado Colorado Montose Colorado Colora
Oregon	2040	50%	Antibad Ant
New Mexico	2020	20%	PACIFIC OCEAN®

Update on Success of Large-Scale Renewable Energy Development in Nevada

Recent Request for Proposals

- Nation's Lowest cost PPAs for solar
- Usually Private Land
- Attributes
 - 100 300 megawatt sized projects not uncommon
 - Flat, minimal contouring, excellent solar attributes
 - Close to permanent roads
 - Construction Water
 - Minimal Environmental impact and mitigations
 - Substation proximity resulting in short interconnections
- "Zones" are successful

Update on Success of Large-Scale Renewable Energy Development in Nevada

			-			
		NPC	SPPC			
		MW	MW			
Possible NV Energy Resources in the pipeline						
			310			
		150				
			140			
			50			
	Subtotal	150	500			
Known Projects/Resources by 2020						
2	Dry Lake Solar Energy Zone (SEZ):	100				
	Remaining MWs					
5	Eldorado Valley: Remaining MWs	700				
6	Моара	200				
Varies	PV Solar at Geothermal Plant Sites		75			
Varies	Developer A aggregated Projects	120	460			
Varies	Developer B aggregated Projects	300	80			
	Subtotal	1,420	615			
Projects/Resources beyond 2020						
7	Miller's SEZ		1,000			
8	Gold Point SEZ		290			
9	Armagosa Valley SEZ	510				
10	Dry Lake Valley North SEZ	1,520				
11	Fort Sage		150			
	Subtotal	2,030	1,440			
	TOTAL	3,600	2,555			



Transmission Planning in a Perfect World

- A Multifaceted Strategy:
 - Accounts for Portfolio Standards
 - Regional Considerations
 - Utilizes Renewable Energy Zones
 - Encourages Geographic Diversity in Renewables
 - Removes Lag
 - Removes uncertainty for Transmission Provider and Renewable Energy Developers
 - Controls or Reduces Transmission costs for customers