

AWEA WINDPOWER 2012

Utility Strategies for Wind Power: Case Studies

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June 5, 2012



Southern Company Profile

- Investor-owned, vertically integrated utility (NYSE: SO)
- Serve jurisdictional territories in AL, GA, FL, and MS and wholesale customers extending throughout those regions, into Carolinas, and beyond in US
- Approximately 50,000 MW of owned or controlled resources
 - 26,000 employees
 - 4.4 million customers
- One of the largest producers of electricity in the U. S.
 - Original parent company formed in 1912

Southern Company Profile

- Low cost
 - Retail rates consistently below the national average
- High reliability and customer satisfaction
 - Consistently among the top U.S. electric service providers in customer satisfaction
- Strong plant operations
 - Peak Season EFOR in 2011: 1.28% (Industry avg. 7.0%)
 - Recognized leader in design, construction and operation
- Technology and innovation
 - Leader in developing more efficient, cleaner coal technology
 - Leader in R&D for improved power generation, delivery and use

Southern Company

Chisholm View - Oklahoma (PA)

Rowan County Energy Complex (CC)



| OPCO | Plant Type |
|------|---|
| APC | (N) Nuclear (4,715 MW) |
| GPC | (S) Steam (21,999 MW) |
| GULF | (CC) Combined Cycle (10,359 MW) |
| MPC | (CT) Combustion Turbine (5,512 MW) |
| SPC | (H) Hydro (2,594 MW) |
| | (PA) Power Purchase Agreements (5,028 MW) |

Total 50,200 MW

Stanton Generating Facility (CC)

Plant Oleander (CT)

Southern Company Renewable Business Model & Wind Strategy

- Southern's goal is to support clean, safe, reliable, and affordable electricity for our customers
- Support the development and use of cost-effective renewable energy resources
- Increase the role of renewables consistent with a strategy that ensures a continued supply of reliable and affordable energy
- Retail, jurisdictional OPCO's presently prefer to contract PPA's for wind energy
- Execute agreements at/below Southern's avoided costs

Wind Benefits

- Energy transacted at lower than avoided cost
- Renewable energy diversifies our energy portfolio
- Zero fuel cost (wind, solar) reduces price volatility
- Meshes with Southern Company's strong commitment to R&D, especially efforts in renewable energy
- Helps meet future energy demands in a reliable and affordable manner by utilizing "all arrows in the quiver"

Chisholm View Wind PPA

- Generating Facility Location – Oklahoma
- Designated and Demonstrated Capacity – 202 MW
- Term of the PPA – 20 years
- Commercial Operation Date – January 1, 2013
- Interconnection – using pseudo-tie from OGE/SPP to Southern/Entergy interface and designating the PPA as a network resource

Implementation Challenges

- Prior to SPP integrated market, subject to congestion charges when curtailments across Entergy mean excess energy must be placed in SPP
- After SPP integrated market, subject to congestion charges in all cases in SPP
- Uncertain of transmission scenario if Entergy joins MISO
- Will not carry additional capacity reserves at present
- Implementation not complete and subject to change

Southern Company Wind Power Obstacles

- Lack of economic competitiveness of wind as a resource located in Southeast
- Transmission uncertainties inherent in importing energy across several balancing areas
- Lack of experience with non-dispatchable resources, like wind power
 - Additional challenges with wind power often peaking at night
- Mitigating cost risk associated with balancing authorities moving to RTO/LMP structures

Conclusion

- The southeast wind resource is limited and has historically not been a cost effective alternative
- Deliverability challenges exist in accessing remote, wind rich resource regions
- Under the right risk sharing conditions, wind generation can be reliably delivered to the southeast at a price that saves our customers money in the long term