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# BP Wind and Solar



- BP Wind and Solar's mandate is to develop, build, own and operate utility scale wind and solar projects.
- 2000 MW of wind operating/under construction; Building 600 - 700 MW in 2012
- Developed and built 37 MW solar project in New York, pursuing more.



# As a developer, what has worked.....



- **BP has positive experience with transmission development**
  - **Colorado:**
    - 95 mile gen-tie line that facilitated 550 MW of wind
  - **Kansas**
    - 45 mile gen-tie line connecting 900 MW + wind farm (450 under construction)
  - **Indiana:**
    - 30 mile gen-tie line that facilitated 750 MW wind farm
- **Common threads:**
  - **Competitive tenders by utility seeking renewables**
  - **No state PUC/FERC approval required**
  - **County approval *is* required**
  - **No condemnation rights: voluntary, private negotiations with landowners**
  - **Ultimately, the decision to allow transmission lines is left to the landowners and local officials who will live with the lines.**
  - **T-line cost paid for by the developer and passed through to purchaser**

*Competitive process results in: (i) best resource being developed (ii) with the lowest cost to deliver (iii) at a point where the grid can accept the energy.*

# What is more challenging.....



- **Mega- projects; 3000 MW each.**
  - **S. Dakota to Chicago: 700 miles/3 states with PUC approval**
  - **Wyoming to California: 1000 miles/3 states with PUC approval**
  - **For each:**
    - **Economies of scale dictates 3000 MW DC line**
    - **3 year permitting cycle/3 year construction/\$100m at risk**
    - **Customers reluctant to sign deals with 6 year forward start.**
    - **Who takes PTC renewal risk?**
    - **Do you risk \$100m or more without PPA? Do you assume merchant?**
    - **Getting there is only part of the solution: Interconnection cost and timing**
    - **Even with PPA's, new technologies and pricing is causing lower prices. Leads to post execution approval risk.**
    - **Pricing and efficiency for wind and solar PV have changed radically in 2 yrs**
    - **Closer and/or in-state resources are now cheaper and easier.**

# The implications.....



- **Developing large scale, long distance transmission lines is similar to developing a multi-national LNG project.**
- **But....if there is no national interest at stake at both purchase and sale end, it is difficult to complete (permits, GSA guarantees, financing).**
- **To a degree, the wind and solar industry is helping states meet its RPS targets with closer resources at reasonable cost.**
- **For in-state needs, Kansas/Colorado/Indiana models are working**
- **For large scale, “system upgrades” across a broad portion of the transmission system, the Texas CREZ model appears to be working.**
  - **We are building 150 MW wind farm in West Texas in anticipation of CREZ.**
  - **Can this kind of model work in California?**