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?