Summary of Takeaways from 2010 and February 2009

Resource Planner Forum meetings

(Takeaways are key points made in the discussion, not necessarily points of consensus)

Resource and transmission planning nexus
2009
• Disconnect in the timeframes for resource planning decisions and the timeframes for transmission development • Because of uncertainty and large range of resource options, utilities will delay decisions until they have to decide • Need to put transmission planning and resource planning back together
2010
• Overall, resource planners intend to rely on local renewable resources to meet RPS requirements • Transmission and generation timelines don't match up • 10 and 20 year transmission plans of little use in near-term (5 year) resource acquisition decisions • Foundational list of transmission is important in resource planning decisions • Under FERC's NOPR, transmission plans drive cost allocation. How can resource planners better inform transmission plans? • Determining type and location of new generation from IRPs is difficult for utilities with broad competitive generation solicitations • Who is going to evaluate grid reliability impacts of coal plant shutdowns? o How is this info fed back into resource planning decisions? o Should the default assumption be that the site is repowered with gas or a radial line is constructed to the site?
GHG paradigm shift?
2009
• Uncertainty in government policies on **carbon and RPS/RECs** • Pressure to keep electricity **affordable**
2010
• Is the shift certain? o Will significant nationwide GHG limits become a reality and when? o As we become less rich, will public policies shift from environmental protection to lower costs? o Even if today's regulators are convinced of a shifting paradigm, will future regulators agree? • Focus has shifted from new coal acquisition to management of the existing coal fleet o Transmission planners won't get clear message from resource planners on coal retirement schedule o EPA rulings and actions on pollutants other than carbon will have a significant effect on the fuure of coal generation; the pancaked nature of EPA emission requirements and state/federal carbon limits complicates economics o Not counting on coal with CCS before 2030 • Carbon price assumptions

- $20 is a reasonable starting point (sweet spot) for analysis, but look at impact of high and low carbon prices
- Be aware of impact of price escalation assumptions

- One suggestion was to model a hard cap on carbon rather than carbon prices
- "Complementary" policies (e.g., RPS) can be expensive

Breakthrough technology wish list
(to be expanded based on post-meeting email responses)

2010

- Fully dispatchable renewable technologies would help as would cost-effective baseload renewable technologies.
- Dispatchable loads – smart grid efforts can change the game, must be able to match load to resource production profiles just as much as matching production to use.

Integration of renewables

2009

- Transmission is too late to help with near-term RPS compliance
- Dump renewable energy
- Tension between interstate cooperation on renewable and local economic development

2010

- Integration of renewables keeps many resource planners up at night
  - Need reform of scheduling and related business practices (e.g., ADI, intra-hour scheduling, dynamic scheduling)
  - Need liquid capacity market
  - At present, there is not a liquid market for regulating reserves
  - Better mesh with gas scheduling
  - Little info on PV integration
  - Transmission overbuild helps some on integration
  - Better info on coal plant cycling is coming
- Operational concerns now a greater part of resource planning
- Missing an understanding on the "big" picture on integrating variable generation – plan for the unexpected
- Higher operating reserves are coming with more variable generation (planning reserves may disappear)
- Is there a need for PUCs to change regulatory structure to accommodate uncertainties in operational issues resulting from variable generation

Consumer response to EE / DR initiatives

2010

- How will consumers respond to utility efficiency and demand response programs?
  - New uncertainty in planning
- Loads are now part of supplies/reserves
  - But DR programs are limited in number of hours they can be called on

Other challenges

2009

- Cost recovery to enable utility investment
- New load uncertainty with recession

2010

- Government mandates (e.g., RPS, carbon, DSM) not coordinated, incremental and subject to change
- State policies on RECs and out-of-state generation raise operating and planning uncertainties
  - Tradable RECs may provide efficiencies in the near-term
  - In longer-term, REC market will rapidly hit variable generation integration wall in the generation locale; dump energy will become a major challenge
- Renewable tax incentives
  - Really important for decisions on CSP
  - Do influenced wind acquisition timing
  - Drop in PV costs more important than future tax policy
- A lot of capital is needed to make system changes
- Vicious circle of more renewables, more gas, more carbon, needing more renewables…
- Wait and see on nuclear renaissance

Western Renewable Energy Zone (WREZ) Phase 3

- If you leave it to individual utilities, the economics of developing WREZs and interstate transmission do not play out in the market.
- There's value to regional and sub-regional discussions on barriers to renewable resource and transmission development, even if the dialogue doesn't lead directly to interstate transmission projects in the near term.
- Inflexible state competitive bidding requirements may be a problem for WREZ development.
- Consider whether to identify mini-REZs of interest to LSEs – those too small to be included in the WREZ maps (and closer to loads) – and see whether there are opportunities to couple them with transmission for large REZs already identified.
- Integrated resource plans are of limited value in identifying where LSEs will get renewable resources. Actual acquisitions, following competitive bidding processes and regulatory and market changes, may vary significantly from the plans.
- Stakeholders beyond LSEs and regulators must be involved in the WREZ 3 effort.