Transmission Planning for the Future & More

NCSL Task Force on Energy Supply
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I. Overview of DOE Office of Electricity
II. Interconnection-Wide Planning Efforts
III. DOE Transmission Congestion Study
IV. Federal Transmission Permitting Coordination
V. And More
Office of Electricity Delivery and Energy Reliability

• Three Divisions
  – Permitting, Siting and Analysis
  – Infrastructure Security and Energy Restoration
  – Research and Development

THE MISSION of the Office of Electricity Delivery and Energy Reliability is to lead national efforts to modernize the electric grid; enhance security and reliability of the energy infrastructure; and facilitate recovery from disruptions to energy supply.
Permitting, Siting and Analysis Division

- Interconnection-Wide Transmission & Planning (& Related Resource Planning)
- National Transmission Congestion Study
- Cross-Border Transmission Line Permits and Electricity Exports Authorizations
- Required Coordination of Federal Transmission Permits & Authorizations
- State and Regional Policy Assistance
Three Electricity Interconnections Serve the U.S.
Interconnection-Wide Transmission Planning

• DOE called for open, transparent interconnection-level planning as early as 2006 (in its first National Electric Transmission Congestion Study)
• DOE has supported such work in the West for over 10 years
• The westerners and ERCOT had experience and relevant institutions to build on in responding to the initiative DOE launched in 2009. By comparison, the East faced a much greater challenge in responding to DOE.
• Broader than just “transmission planning”
Interconnection-Wide Transmission Planning

• Grants awarded under Recovery Act to planning entities in Eastern and Western Interconnections, and ERCOT

• Relevant organizations already existed in the West and ERCOT. No such organizations existed in the East, and had to be created.

• Major purpose was to aid the establishment of institutional capabilities to analyze long-term utility system expansion options at a large geographic scale.* Using alternative scenarios. Plus related “resource planning”-type work outside of transmission

• *The Real Benefit: new relationships & dialogues that did not exist before
Total Funding: $80M (Recovery Act)

- Eastern Interconnection Planning Collaborative - EIPC (industry experts) $16 M
- Eastern Interconnection States Planning Council – EISPC (state officials) $14 M
- Western Electricity Coordinating Council – WECC (industry experts) $14.5 M
- Western Governors Association - WGA (state officials) $12 M
- ERCOT A (industry experts) $2.5 M
- ERCOT B (state officials) $1.0 M
- National Labs (supporting all above) $20 M
Eastern Interconnection – Accomplishments to Date

- Formation of the two eastern organizations – industry & states (not assured would happen)
- EIPC’s Phase I report delivered 12/16/11 – details eight 20-year macroeconomic futures (72 sensitivities)
- EIPC’s Phase II analysis launched – will develop 3 “bookend” 20-year transmission expansion scenarios (ie. BAU, medium, high buildouts)
- EISPC state participants have provided key leadership in EIPC work
- EISPC has initiated an eastern Clean Energy Zone study
Eastern Interconnection – Addt’l Supporting Work

• Future outlook of coal & other traditional resources over the next 25-30 years
• Review of nuclear resources
• Economic ramifications of resource adequacy requirements & an updated assessment of the “one-day-in-ten-year Loss of Load Probability” criterion that underlies current generation reserve margin requirements;
• An overview of state laws, regulations and rules and orders relevant to identification of energy zones in the Eastern Interconnection;
• Extensive review of co-optimizing methodology and techniques for the planning of both generation, in particular resources that are remote from load, and transmission
• Desire to look at electricity – natural gas interdependencies
Western Interconnection – Accomplishments to Date

• WECC delivered 10-year Regional Transmission Expansion Plan on 9/30/11 – plan focuses on new lines and upgrades needed to meet state RPS requirements
• 20-year plan now being developed
• Development of new planning techniques and tools, including inclusion of environmental data and concerns in planning process
• Multiple insights on adequacy of transmission investments over next 10 yrs; lots more
Western Interconnection – Accomplishments to Date

• Input to WECC planning to ensure planning reflects state policies
  – Ex: Reduced WECC 2020 demand projections by 2,000 MW

• Sponsored several utility resource planners forum – “what are they planning to buy and build”

• Moving the west to better integrate growing variable generation (i.e wind and solar)

• State Wildlife Decision Support Tools
  - -- Ex: Southern Great Plains Crucial Habitat Assessment Tool
“WECC’s first 10-year plan indicated that no new major transmission is needed by 2020 to meet demand and state policy objectives (e.g., Renewable Portfolio Standards) beyond the “foundational” projects already under development are [sic] energized by 2020, as expected.”

-- WA UTC Comm. Phil Jones, Oct. 12, 2011 Congressional Testimony
Coordination of Federal Transmission Permitting

- **Federal law requires**: Section 216(h) of the Federal Power Act, created by EPACT 2005, designated DOE as the lead agency to coordinate transmission lines requiring multiple Federal permits
- MOUs signed by 9 Federal Agencies to execute section 216(h)
- State RPS’s in West driving transmission buildout
Interagency Rapid Response Team for Transmission

The Obama Administration is focused on building the infrastructure needed to support a clean energy economy because the countries that lead in clean energy will be the countries that lead the 21st century global economy. Electric transmission projects are one specific area where the Administration is acting to catalyze the transition to a clean energy economy. Building greater transmission infrastructure will facilitate, among other things, increased reliability, the greater integration of renewable sources of electricity into the grid, will accommodate a growing number of electric vehicles on America’s roads; and will reduce the need for new power plants.

**Background:**

- **Announced June 2011**
- **Builds off** Energy Policy Act of 2005 requirements for better Federal coordination on transmission permitting
- **Co-lead by CEQ and Depts of Energy & Interior**
RRTT Site Visits
Tease Out Process Reforms

• RRTT has to date conducted a series of site visits for five of the seven RRTT pilot projects
• Site visit participants included Federal, state, and local agencies; Tribal representatives; project proponents and contractors
• During the site visits, participants identified project-specific challenges and potential solutions that could improve the agencies’ processes
The And More

• The game changer that shale gas is for the electric industry and the U.S.
  -- Low prices, domestic jobs boom, foreign policy implications
• DOE’s announcement of first-ever methane hydrate extraction
• DOE’s Announcement of small modular nuclear support
• Watching reliability as EPA rules are rolled out (30-40 GW out of 310 GW coal retirement announcements so far)
• What is the post-2020 future?