

# COLLABORATIVE TRANSMISSION TECHNOLOGY ROADMAP

PILOT PROJECT

Feb. 4, 2014

## ROLLOUT WEBCAST

2:00-3:30 p.m. Eastern

### Objectives

- 1) Introduce the Collaborative Transmission Technology Roadmap
- 2) Discuss the strengths, weaknesses, opportunities, and threats associated with this pilot project and the Roadmap deliverable
- 3) Determine next steps

## Action Items

- 1) **James Hillegas-Elting** will:
  - a. Include a disclaimer in the revised roadmap document (to be finalized February 14) explicitly stating that this was a collaborative first-step in identifying common research needs among a select group of transmission owners and operators, but the roadmap does not claim to represent a national consensus or a prescriptive national path forward.
  - b. Provide participants information regarding the information technology research organization.
  - c. Share BPA's public relations plan and offer opportunity for participants to become involved.
- 2) **Participants** will share any suggestions they might have about other organizations to reach out to with information about the roadmap.

## Next Steps

- 1) Discussion of the roadmapping project at the EPRI Power Delivery and Utilization Program Advisory Council meetings in Huntington Beach, California, February 10-12.
- 2) Revised version of the roadmap to be submitted to the BPA Technology Innovation Office on February 14 so that this document can be included as part of the agency's annual solicitation (late February; see <http://www.bpa.gov/Doing%20Business/TechnologyInnovation/Pages/default.aspx>); all webcast participants and pilot project contributors will receive the announcement.
- 3) Check-in with the collaborating organizations tentatively scheduled for mid-2014 to continue improvement and sustain dialogue.

## Discussion Highlights

### Strengths

Mark McGranaghan: There is a high level of detail in the technical information provided in the R&D program descriptions.

DeJim Lowe: This provides a useful initial framework to help coordinate research projects with other organizations.

Dave Cenedella: The document effectively captures the issues and challenges shared by others in the industry. It also allows us to see how much other research projects are ongoing at a variety of institutions.

### Weaknesses

DeJim Lowe: Some of the diagrams are very busy and crowded. Perhaps spreading diagram elements over a larger area would help illustrate the connections and interrelationships more effectively?

Jeff Hildreth: I agree. One solution we've discussed is to try to limit the number of linkages to the top two or three most critical.

Tugrul Daim: Another option would be for each organization to conduct an internal prioritization exercise to narrow the focus down to a core of content of most interest to the organization. Then, the diagrams could be refined based on this sub-set of content rather than on the entire document.

James Hillegas-Elting: Another approach to resolving this issue would be to develop a user-friendly web-based version that enabled people to search the content quickly and create tailored diagrams that highlight content relevant to the search parameters. I have been in discussion with colleagues internally and at EPRI (Omar Siddiqui) to develop a project plan to migrate the content of the *National Energy Efficiency Technology Roadmap Portfolio (EE Roadmap)* to the Internet. The idea currently is to apply a wiki-based approach to create a website with this functionality on the front end and a more easily updated database on the back end. I recently extended this conversation to Jeff Hildreth because the functionality and information technology (IT) architecture would be the same for both the *EE Roadmap* and this Collaborative Transmission Technology Roadmap.

Patricia Hoffman: It will be important to generate momentum with a critical mass of organizations to keep this effort moving forward. You'll want to consider how you can involve more industry and research organizations based on shared interests in prioritized R&D needs.

Dave Cenedella: There's so much information in this document that it's not clear what the key takeaways are or what can be communicated to executive management. The Executive Summary should be something easier to communicate; you might also want to consider how the benefit of this document can be quantified.

James Hillegas-Elting: These are great points. As one step in this direction, this roadmap project and deliverable will be among the topics discussed at next week's EPRI Power Delivery and Utilization Program Advisory Council meetings in Huntington Beach, California. With feedback from you all during this call and from others in the industry next week we'll have more of the information we need to address Dave and Patricia's points.

## **Opportunities**

Larry Bekkedahl: This roadmapping project allows us to identify who is doing what kinds of R&D, and this provides the benefit of avoiding duplicative efforts.

Mark McGranaghan: A challenge is finding the right home for what the industry considers the most pressing issues. It's not clear how we'll maintain this document, who might take charge of managing sections of it, and what the process will be for keeping it updated.

Larry Bekkedahl: Maybe one approach is to find a "champion" organization for each Technology Area or each of the priority Capability Gaps.

Carl Bridenbaugh: Our participation in this project allowed us to validate our involvement in EPRI research projects. We developed a roadmap internally a few years ago and have used this to help guide the research we do through EPRI; seeing the content from the Collaborative Transmission Technology Roadmap validates the research paths that we've taken by showing that we are interested in many of the same pressing issues as others in the industry are.

Tiffany Gibby: Tennessee Valley Authority recently completed a project to develop information technology roadmaps for each of our strategic business units. We then consolidated these individual roadmaps into an enterprise roadmap. I see an opportunity now to cross-check our roadmap with the Collaborative Transmission Technology Roadmap to find areas where we can work with others on areas of mutual concern.

## **Threats**

DeJim Lowe: I'm not sure what the ownership of the process going forward will be, both internally and externally. As Mark stated earlier, who will maintain this document? Also, regarding the prioritization process that Tugrul Daim reviewed earlier, there is a potential issue in the fact that individual organizations may prioritize R&D needs in a way that does not align with other organizations or the broader industry.

Dave Cenedella: If this document gets disseminated widely and regulators become aware of it, will this potentially create challenges for anyone? Does this document represent a proactive approach that industry has taken on some of the key issues that regulators may be concerned with? Perhaps this is an issue we should discuss further?

Larry Bekkedahl: My experience with regulators is that they prefer to have a document that they can refer to when they're having discussions with industry players, so I think this roadmap would be of benefit in this regard.

Joe Waligorski: It's important to note that this document doesn't represent all of the industry, nor even all of the technology areas of concern to the industry, just a slice.

Al Choi: Perhaps there is a need for a clearer disclaimer in the document that explicitly addresses these points?

James Hillegas-Elting: We've approached this project from the beginning as a collaborative first-step in identifying common research needs among a select group of transmission owners and operators, and we've purposely not claimed that this effort represents a national consensus or a national, prescribed path forward. These points are included in the text of the current version of the roadmap, but threaded throughout rather than stated clearly and concisely in a disclaimer. This is an important thing to include so I will ensure that such a disclaimer is included in the revised version that I'll be finalizing by the end of next week.

## **Other Topics**

Larry Bekkedahl: Regarding outreach, we plan to discuss this at an upcoming North American Transmission Forum meeting and with some other regional organizations. We'd appreciate hearing (during this call or after) any suggestions of other groups to reach-out to.

Mark McGranaghan: One suggestion is the concurrent North American Transmission Forum and North American Energy Standards Board (NAESB) meeting this fall, or the NAESB meeting in March.

Tiffany Gibby: You might also consider the Utility Information Technology Benchmark (UNITE) consortium. They've been particularly active in benchmarking information technology groups for the utility industry. Also, an online portal of some kind to facilitate collaboration and sharing would also be useful.

Michelle Odajima: The current roadmap is good but particularly in the IT realm the content that we developed as part of this project will be dated within six months.

Mark McGranaghan: At EPRI we have a new research initiative focused on IT and data management. One potential “owner” of this section of the roadmap could be EPRI, since we have the structure and we’re building the collaboration to address this topic.

James Hillegas-Elting: We had a similar issue arise when discussion agency research ideas for the energy efficiency sector. Some of our subject matter experts sought to address pressing issues around “big data”—data management, IT, communications systems, etc.—but rather than pursue this only within one of the agency’s business lines our Chief Technology Innovation Officer Terry Oliver suggested that we work on this collaboratively within and beyond the agency. One option is the EPRI initiative that Mark referred to. Another is a research consortium that Terry Oliver suggested a few weeks ago but that has slipped my mind; I will take an action item provide this reference for you all. [Note: This organization is the Smarter Energy Research Institute, <http://www.research.ibm.com/client-programs/seri/>].

Jeff Hildreth: Having heard James’ brief overview of the wiki website idea, do the people on this call think this is a worthwhile idea?

Mark McGranaghan: It would be worth having more discussion on this both because it’s a good suggestion for a way to make the roadmap content more accessible and also because of EPRI’s data management initiative.

Joel Scruggs: We’ll be developing some announcements and news items about this roadmapping project over the coming months. For those on this call who are interested, this would be a good opportunity to coordinate our outreach and to contribute as well.

James Hillegas-Elting: After this webcast I’ll provide some additional information about BPA’s public relations plan as it relates to the roadmap project.

Jeff Hildreth: Thanks again to everyone who contributed their time and expertise to this project. We see this as an important step in building the proactive collaboration necessary to continue to deliver electricity safely, reliably, and cost-effectively. We always welcome your questions and comments and invite you to contact James, Navin, or I at any time.

## Participants

### **Bonneville Power Administration**

- 1) Larry Bekkedahl, Senior Vice President of Transmission
- 2) James Bowen, Program Analyst–Technology Innovation
- 3) Judith Estep, Project Management Officer–Technology Innovation
- 4) Jeff Hildreth, Electrical Engineer–Transmission
- 5) James V. Hillegas-Elting, Project Manager
- 6) Joel Scruggs, Public Affairs Specialist

### **Electric Power Research Institute**

- 1) Navin Bhatt, Technical Executive
- 2) Daniel Brooks, Senior Program Manager
- 3) Robert Entriken, Senior Project Manager
- 4) Ivo Hug, Marketing Manager
- 5) Mark McGranaghan, Vice President of Power Delivery and Utilization
- 6) Andrew Phillips, Director, Transmission

### **Portland State University Engineering and Technology Management Dept.**

- 1) Dr. Tugrul Daim, Professor

### **Consolidated Edison Co. of New York**

- 7) Ray O’Sullivan, Program Manager in Research and Development
- 8) Michael Simone, Department Manager–Electrical Engineering

### **FirstEnergy Corporation**

- 2) Carl Bridenbaugh, Vice President of Transmission
- 3) Eileen M. Buzzelli, Director, FirstEnergy Technologies
- 4) Joe Waligorski, Delivery Operations Technical Advisor

### **PJM Interconnection**

- 5) Sarah Burlew, Manager, Applied Solutions

**Tennessee Valley Authority**

- 6) Tiffany Gibby, Project Control Specialist
- 7) DeJim Lowe, Senior Project Manager
- 8) Bruce Rogers, Director, Technology Innovation

**U.S. Department of Energy**

- 9) Patricia Hoffman, Assistant Secretary for the Office of Electricity Delivery and Energy Reliability

**Xcel Energy Services, Inc.**

- 10) Ted Carr, Principal Engineer
- 11) Dave Cenedella, Information Technology Manager
- 12) Al Choi, Manager, Xcel Energy Next Generation
- 13) Jason Espeseth, Transmission Planning Engineer
- 14) Teresa Mogensen, Vice President of Transmission
- 15) Michelle Odajima, Senior System Sustainability Analyst
- 16) Mark Tiemeier