ELECTRIC GRID RESEARCH PROGRAM

Project Summary

Transmission Cost Allocation Methodologies

Context

California's more than 31,000 miles of electric transmission and 18,170MW of interconnections to neighboring states are critical for meeting electricity needs of California consumers reliably and efficiently. The need for transmission investments to strengthen California's grid and expand interconnection capacity has been extensively documented. While the need is generally accepted, the development of new major transmission projects has lagged behind.

While reliability related transmission investments are moving forward, projects which are viewed as serving an economic, market or policy objective, have no clear path forward owing in part to issues related to cost recovery and cost allocation. There is a need to research new approaches for assessing benefit streams, beneficiaries, and quantification of benefits for cost allocation and cost recovery for new transmission investments.

Goals and Objectives

Project goals were to:
- Develop new cost and benefit allocation tools that reflect the current electric market and its range of market participants and stakeholders.
- Learn from best-in-class examples of transmission approval processes to guide cost allocation and cost recovery based on the benefits of different transmission projects.

The objective of the research was to outline approaches to apply improved benefit quantification methods to:
- Evaluate projects cost effectiveness.
- Allocate projects cost among participants.
- Develop a framework for cost recovery.

Description

This study encompassed two main areas – research on cost allocation methodologies and the transmission approval process.

For cost allocation, the project:
- Reviewed and researched benefit streams and quantification methods
- Established a framework to evaluate future transmission projects and benefits
- Researched cost recovery and cost allocation methodologies
- Reviewed technology options and their impact on system utilization and cost allocation

For the transmission approval process, the researchers:
- Reviewed and summarized examples of alternative approaches that have been utilized
- Reviewed existing processes, rate determination and cost recovery

Key Results/Conclusions

- Since the transmission system has become a public good, the use of social rate of discount, instead of allowed weighted cost of capital, to calculate the present worth of benefits of a new transmission project is recommended. Additional research is needed on quantification of societal benefits of transmission in providing insurance value against extreme events that are low probability/high impact events
- In early stages of the project, the use of a screening tool can be very productive to perform quick what-if screening analysis, but are not a substitute for detail production costing simulation for detailed benefit analysis.
- In economic transmission projects, the principle of beneficiaries pay should be the basis for cost allocation.
- Attempts should be made to quantify primary and strategic benefits of transmission projects in a transparent way so that project participants and beneficiaries can agree on the level of benefits and who gets what share of these benefits and who pays what share of the costs.

Why It Matters

Understanding the scope and magnitude of the issues surrounding cost allocation methodologies, strategic benefits, and approval processes for transmission projects will better help educate stakeholders who are considering making investments, and regulators who must address transmission and rate-related policies.

This baseline information is needed to develop and conduct future research initiatives in transmission planning.

{More details}

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Participating Organizations

Principal Investigator:

Lawrence Berkeley National Laboratory

CERTS
Consortium for Electric Reliability Technology Solutions

Research Partners:

Electric Power Group

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Reports

Final Report: *Transmission Benefit Quantification, Cost Allocation, and Cost Recovery*
Appendix A: *Literature Search and Findings*
Appendix B: *Benefit Assessment*
Appendix C: *Cost Recovery Allocation*
Appendix D: *Technology Options and Implications and Their Impacts*
Appendix E: *Best in Class Alternative Approaches Utilized for Transmission Project Approvals*
Appendix F: *Existing Processes for Transmission Project Approvals and Case Histories*
Appendix G: *Fact Sheet*
Appendix H: *Comparison of Electric Transmission With Gas and Telecommunication Industries*

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