How State Regulators are Attributing Costs and Benefits for Distributed Generation: Comparative Analysis

Research Team

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Objective of the project

To examine distributed generation valuation methodologies arising from state regulatory bodies
to determine best approaches for valuing distributed generation for the southeast.
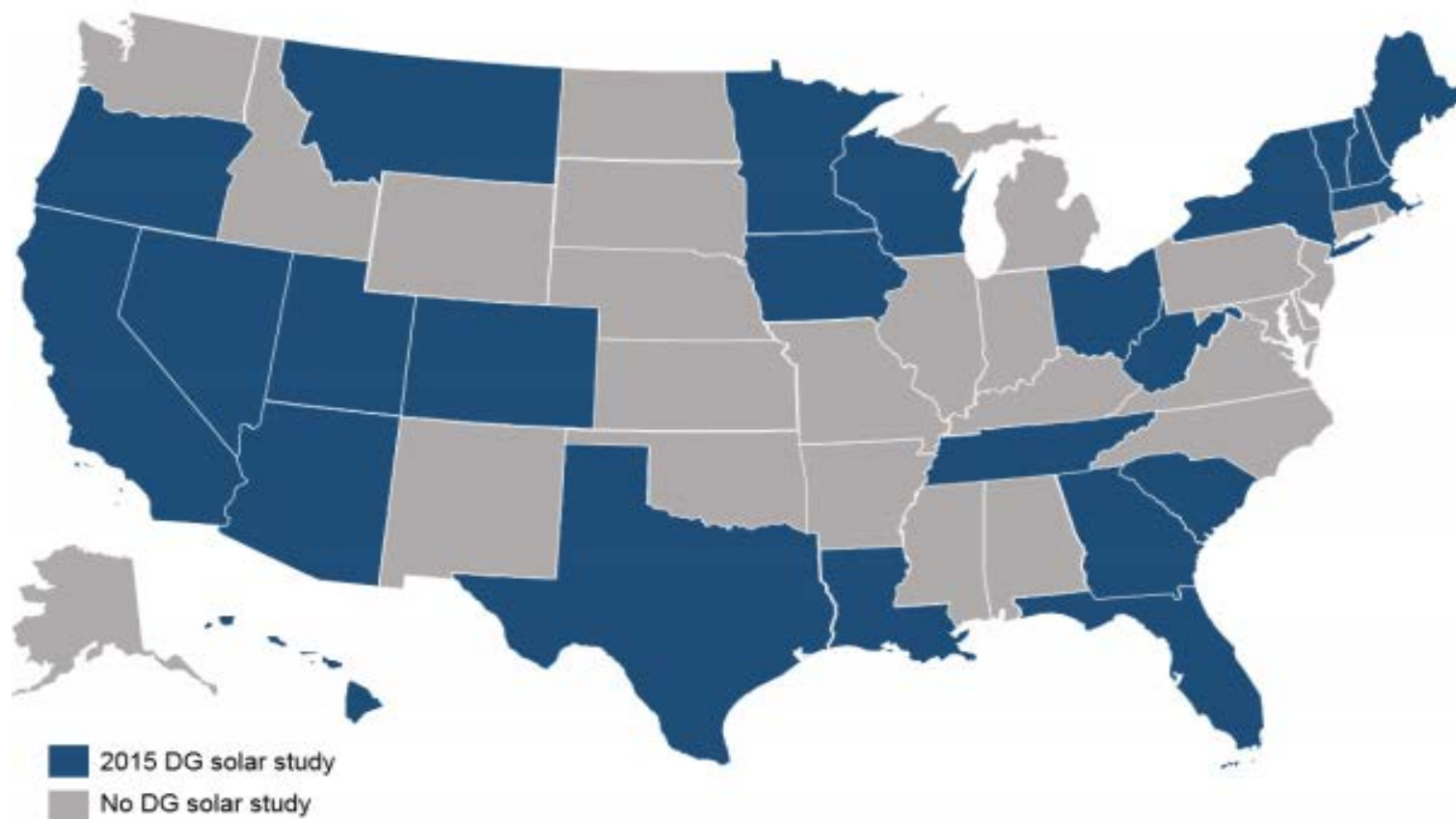
Need for the project

- Distributed generation is becoming common

  NC ranked 2nd in PV

- Limited DG Valuation filings in the SouthEast
  - The PUC has not established a proceeding in NC

    but can be expected as the changes due to DERs are starting to affect the NC electric grid.
  - **Georgia**- As a part of Georgia Power's 2016 IRP proceeding the PUC is considering BCA for solar generation and DERs.

Challenge: DV valuation approaches are quite diverse

Review of Solar PV Benefit Cost Studies, RMI, 2013
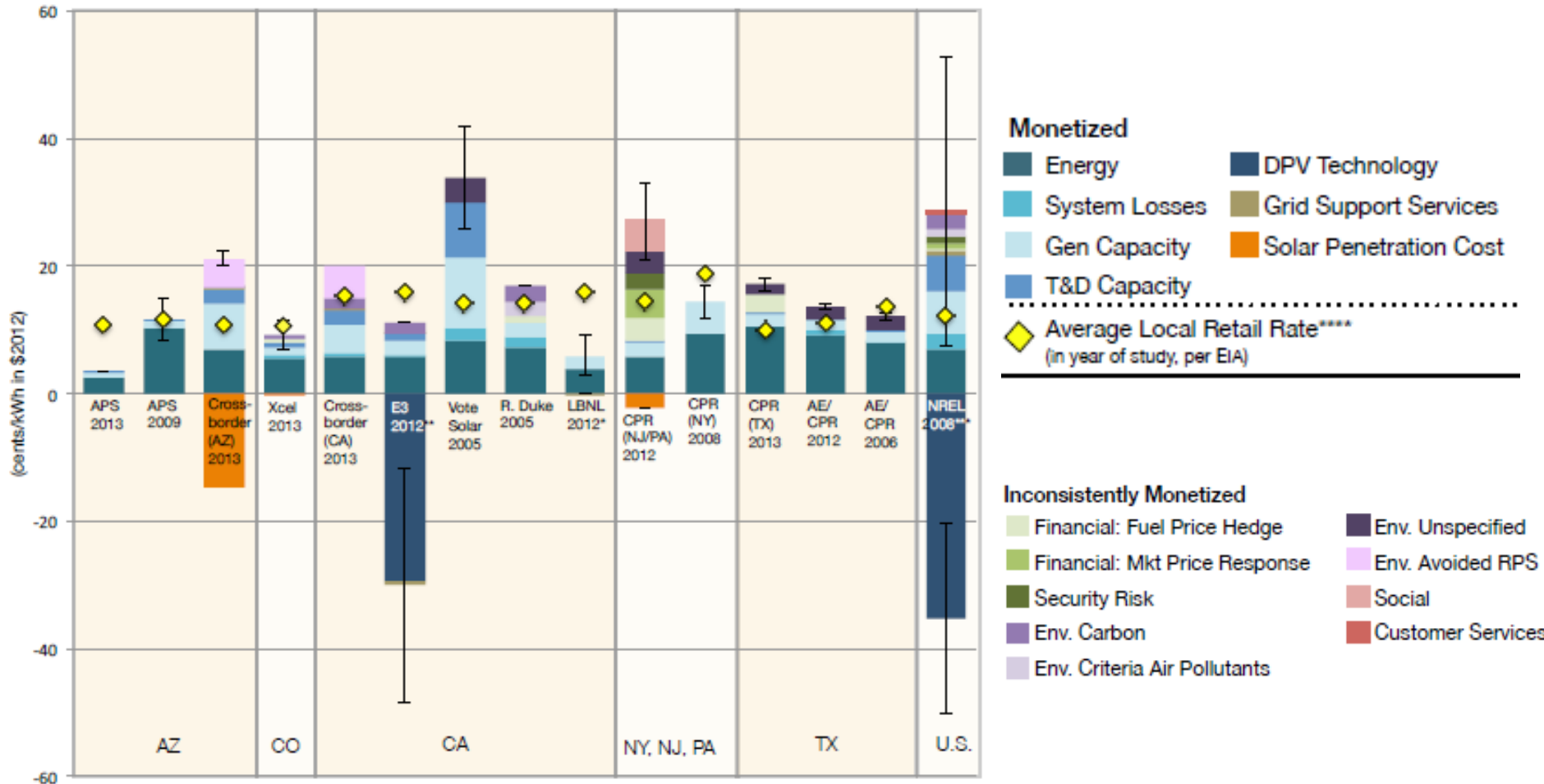
States Studying Rooftop Solar Valuation or Net Metering in 2015

2015 DG solar study
No DG solar study

50 States of Solar Annual Review, NCCETC, 2015

Our Research Methodology

Phase I - Comparative Analysis

Task 1, Year 1: Literature Review (4 months)
- Review all state regulatory dockets and compile DG valuation studies and DG cost recovery practices
- Generate criteria for reports to be included comparative analysis
- Build data set of DG valuation subcomponents

Task 2, Year 1: Comparative Analysis (8 months)
- Create a comparative database of key distributed generation valuation sub components, including a qualitative comparison of methodologies
- Determine where methodologies have results that best align with independently observed grid impact costs
- Conduct a comprehensive analysis of DG valuation implications for regulated utilities of the southeast, with special attention to DG cost recovery

Milestone 1: DG Valuation Methods Data Collection,
Milestone 2: Comparative Analysis Report,

Our Research Methodology

Phase II - Case Study of DG Value for a Southeastern Industry Partner

Dependent upon Phase I work and finding a utility partner in the southeast.

Task 1, Year 2: Identify and Collaborate With Utility Partner (4 months)
- Determine key needs of utility partner regarding DG valuation
- Collect, review, and prepare key data relevant to DG valuation for the partner

Task 2, Year 2: Analyze Key DG Valuation Parameters Based Upon Phase I Research (6 months)
- Apply multiple DG valuation methodologies gleaned from Phase I research to determine several possible paths for DG cost recovery
- *Task 3, Year 2: Develop Strategic Insight Regarding DG Valuation Strategies (2 months)*

Thank You!

Researcher Biographies:

- Dr. Badrul Chowdhury of UNCC's Electrical & Computer Engineering (ECE) Department has more than 25 years of research experience in the area of DER, and vulnerability and resiliency studies of the power infrastructures.

- Dr. Ronak Bhatt, an adjunct Professor of UNCC's EPIC advises companies on a range of strategic issues for value creation with a focus on growth: new business development, product commercialization, innovation, sales & marketing, financial evaluation, and partnerships/M&A.

- Dr. Mesut Baran of NC State University's Electrical & Computer Engineering Department & the FREEDM Center has recently researched smart power distribution systems and the integration of power electronics based devices to power systems.

- Mr. Achyut Shrestha of the NC Clean Energy Technology Center at NC State University tracks national renewable energy policy trends to maintain the US Department of Energy's Database of State Incentives for Renewable and Efficiency.