New Mexico Public Regulation Commission Grid Modernization Webinar Series Conclusions and Recommendations

July 21, 2022

GRIDWORKS

Purpose

- Support development of Notice of Proposed Rulemaking (NOPR) on Grid Modernization
- Share information, gather participant input and identify issues to address in NOPR development

Approach

- Subject matter expert speaker presents on topic
- Facilitated discussion to gather participant perspectives
- Summary of workshops documenting participant input for PRC use in rulemaking

Recognizing What We've Done Together

- **9** webinars between March 3 and July 21, 2022
- **8** webinar summaries recognizing expert and participant input
- **10** expert presenters
- **340** total participants
- **39** participants per webinar (average)
- **54** organizations represented
- **13.5** hours shared together, **9** hours in discussion

Review

Date and Topics

March 3 - Integrated Distribution Planning Overview (Lisa Schwartz, LBNL)

March 17 - AMI and Communications (James Ogle, PNNL)

April 7 - Load and DERForecasting (Ashreeta Prasanna, NREL)

April 21 - Hosting Capacity (Sky Stanfield, IREC)

May 5 - Non-wire Solutions (Lauren Shwisberg, RMI)

May 19 - Transportation Electrification in Distribution System Planning (Trina Horner, Kevala)

June 2 - Evaluation methods for grid investments and DER (John Shenot, RAP)

June 30 - Procedures for submitting and reviewing Grid Modernization Applications (Art O'Donnell, DOE Fellow)

July 21 - Recap and summarize conclusions and recommendations (Gridworks)

Today's Objectives

- Provide overview of Gridworks' conclusions and recommendations related to rule development for grid modernization

- Gather feedback on Gridworks' conclusions and recommendations

    - *How well do they reflect what we've heard in the Grid Modernization webinar series*?
    - How can they be improved?

- Articulate next steps for a final report, *Modernizing New Mexico's Grid*

Today's Agenda

10:00 - 10:10 am - Welcome and Review

10:10 - 10:15 am - Purpose and outcomes for webinar (Amanda Ormond, Senior Fellow, Gridworks)

10:15 - 10:20 am - Webinar Series Comments (PRC Chair Cynthia Hall)

10:20 - 10:40 am - Grid Modernization Series Finding and Recommendations (Jeff Ackermann, Senior Fellow, Gridworks)

10:40 - 10:50 am - Clarifying Questions and Answers

10:50 - 11:20 am - Facilitated Discussion

11:20 - 11:30 am – Wrap Up

- Participant Survey
- Next Steps

Caveat

The observations, conclusions and recommendations presented here have been organized by Gridworks to reflect what we have heard through the webinar series.

They are not intended to be, and will not be represented as, a consensus position of the participants.

The conclusions and recommendations are presented here today so that they may be strengthened through your feedback.

Gridworks reserves its editorial independence.

Key Conclusions and Recommendations

- The foundation is in place for the PRC to move forward with Grid Modernization
  - Rules >>> Plans >>> Investments (repeat)

- The PRC should exercise its authority
  - Set a focus on a modernized grid
  - Approach incrementally

- The PRC needs to synchronize its efforts
  - Pause filings (plans/applications) until rules are final
  - Anticipate future linkages between planning proceedings

HB 233 (2020): *Energy Grid Modernization Roadmap Act*

- Sec. 1: GRID MODERNIZATION ROADMAP AND GRANT PROGRAM
- Sec. 2: GRID MODERNIZATION GRANT FUND, and
- Sec. 3: APPLICATION FOR GRID MODERNIZATION PROJECTS

Drivers: Policy Development

Grid Modernization Advisory Group (GMAG):
"The Roadmap serves as a guide to electric service providers, regulators, policymakers, and consumers …"

- Roadmap Consensus Recommendations (5 in total):
  - Recommendation 1: UTILITIES SHOULD INVEST IN ADVANCED METERING INFRASTRUCTURE (AMI)

- GMAG White Papers: https://www.emnrd.nm.gov/ecmd/grid-modernization/

- GMAG White Paper #6: *Require Distributed Resource Planning*
  - "Require …DSPs to be submitted to the … PRC at three-year intervals. …reviewed …in a formal proceeding and certified or amended as needed. DSPs may become a formal requirement of the utility Integrated Resource Planning (IRP) process, but … recommends that DSPs initially be presented as separate filings."

Drivers: PRC Has Needed Authority

HB 233, Section 3:

"A public utility may file an application with the commission to approve grid modernization projects that are needed by the utility, or upon request of the commission."

Applications may include:

- Investments or incentives to facilitate grid modernization
- Rate designs or Programs that incorporate grid modernization technologies, equipment, or infrastructure
- Customer education & outreach to increase awareness of grid modernization benefits

Recommended Approach

As recommended by expert presenters, the PRC approach to grid modernization needs to factor in:

- Holistic planning and long-term thinking
- Best practices/lessons learned from other jurisdictions
- NM unique circumstances and current situation
  - NM's status re: DSP/IDP, AMI, forecasting, HCA, transportation electrification
  - Socio-economic demographics of utility customers
  - Differences of utility systems and customer bases…
    - …and allowing a reasonable amount of utility-specific flexibility

Recommended Approach

- Ensure utilities meet public policy goals
- Ensure a reliable system at the lowest reasonable cost to customers
- Consistency of regulatory practices, especially cost recovery
    - Balancing “rebuttable presumption of prudence” and ongoing regulatory oversight of utility rates and expenditures

Recommended Rule Language

Articulate Regulatory Intent, such as:

"The Commission finds that the implementation of AMI comports with the Grid Modernization Statute, will benefit PNM's New Mexico retail customers and the public, and will provide a net public benefit."

(PRC Proceeding 22-00058-UT; Order dated 3/24/22; directives to PNM)

Recommended Rule Language

Include Statements of Principle and Objectives, such as:

- Prepare the distribution grid to best deliver: resilience; reliability; increased customer options; flexibility; integration of operational tactics; etc.
- Determine reasonableness of investments within a larger cost-effectiveness context (current and future benefits & avoided costs)
- Sequence the transition to a modern grid by leveraging proven technologies and best practices

Recommended Rule Language

Identify Regulatory Review Factors, such as the criteria from HB 233, Sec. 3:

- Improve utility system efficiency, reliability, resilience and security & meet energy demands through flexible, diversified and distributed portfolio
- Support connection with regional energy markets for export of renewables
- Increase access to and use of clean and renewable energy, especially low-income customers and underserved communities
- Contribute to reduction of air pollution and GHG
- Increase utility product offerings and allow for private investment, skilled jobs and consumer protection
- Transparent public reporting requirements
- Otherwise consistent with state's grid modernization planning processes and priorities.

Recommended Rule Language

- Require Utilities to produce a *Grid Modernization Plan* addressing HB233, including:
  - Advanced Metering Infrastructure (AMI)
  - Intelligent grid devices for real time or near real time analysis
  - Automated control systems for T&D circuits & substations
  - High-speed communication networks/automated control
  - Improved distribution system planning & hardening
  - Security: physical and cyber
  - Demand response technologies
  - Energy storage and microgrids
  - EV charging infrastructure/community/industry electrification
  - Customer information platforms
- Connect components with regulatory review factors (HB 233)

Recommended Rule Language

Within utility *Grid Modernization Plans*, identify the component parts of comprehensive grid modernization:

- Advanced Metering Infrastructure
- Hosting Capacity Analysis
- Location Specific Load and DER Forecasting
- Oversight/transparency, including how a utility decides between wire and non-wire solutions
- Electric Vehicle charging infrastructure and associated load management

Recommended Rule Language

Update Cost-Effectiveness Tools: adapt and apply Hawaiian Electric Company Approach

Expenditure Purpose	Methodology
A. Standards & Safety Compliance Grid expenditures to ensure reliable operations, comply with service quality, and transform the physical infrastructure from analog to digital	Lowest Reasonable Cost (aka Least Cost/Best Fit)
B. Policy Compliance Expenditures needed to comply with state policy goals like RPS, interconnections and access to DER	Lowest Reasonable Cost
C. Net Benefits Not A. or B. but investments would provide net benefits for customers	Total Resource Cost Test
D. Self-Supporting Projects Expenditures incurred for a specific customer (e.g. interconnection upgrades) with costs directly assigned to that customer.	Does not require benefit/cost justification** [New thinking on cost-causation policies may elevate these to B. or C.]

Recommended PRC Process Improvements

Synchronize and integrate PRC regulatory proceedings with Grid Modernization – near-term and longer

- Coordinate planning and rate design proceedings:
  - Examples: Demand Response through tariffs that leverage AMI; EV infrastructure and time-varying rates, etc.
- Coordinate inputs and outputs between major planning proceedings:
  - Examples: Integrating resource, distribution and transmission planning

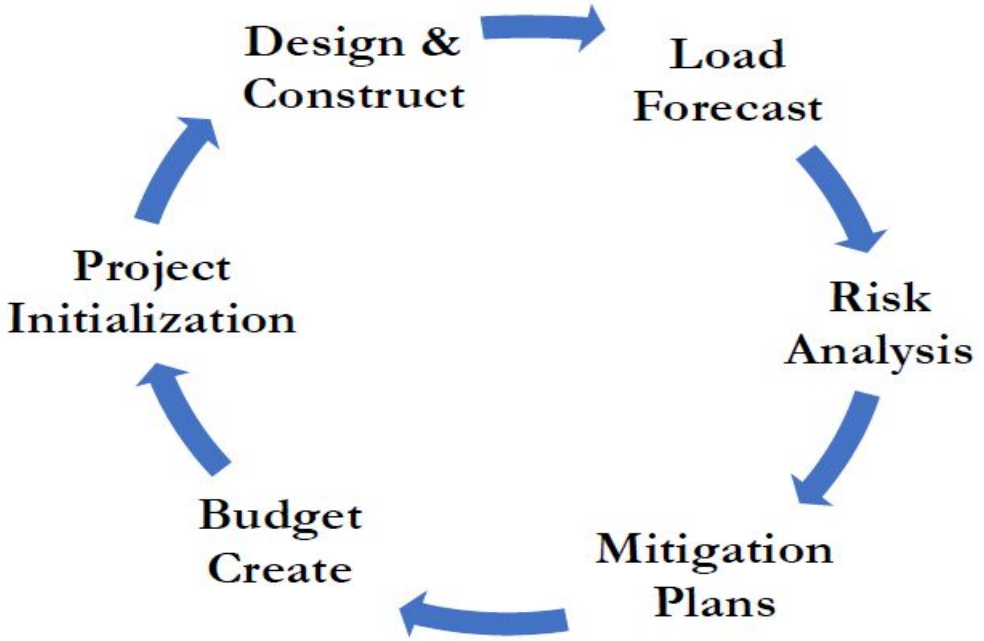
Recommended PRC Process Improvements

Manage increasing complexity of Distribution System Planning in phases, beginning with AMI and evolving to DER integration

- Leverage AMI to improve forecasting and Hosting Capacity Analysis
- Identify & bid out discrete distribution system needs
- Incorporate DER and Non-Wire Solutions into cost/benefit reviews of distribution system options

Substantive elements of DSP (1)

- Baseline information on current state of distribution system
  - Such as system statistics, reliability performance, equipment condition, historical spending by category
- Description of planning process
  - Load forecast – projected peak demand for feeders and substations
  - Risk analysis for overloads and mitigation plans
  - Budget for planned capacity projects
    - Asset health analysis and system reinforcements
    - Upgrades needed for capacity, reliability, power quality
    - New systems and technologies
    - Ranking criteria (e.g., safety, reliability, compliance, financial)
- Distribution operations — vegetation management and event management



Source: Xcel Energy, 2021

Substantive elements of DSP (2)

- DER forecast
  - Types, amounts and locations
- Hosting capacity analysis
  - Including maps
- Grid needs assessment and NWA analysis to identify:
  - Existing and anticipated capacity deficiencies and constraints
  - Traditional utility mitigation projects
  - A subset of these projects that may be suitable for non-wires alternatives (NWA) to defer or avoid infrastructure upgrades for load relief, voltage, interruptions or resilience
    - Portfolio of DERs or single large DER (e.g., battery) — typically through competitive solicitations
    - Locational net benefits analysis systematically analyzes costs and benefits of NWAs providing specific grid services to determine net benefits for a given area of the distribution system
    - Can implement NWA incrementally, offering a flexible approach to uncertain load growth and potentially avoiding large upfront costs for load that may not show up
    - NWAs leverage customer and third-party capital investments

Recommended PRC Process Improvements

Overall Approach to Filings (and sequencing of activities)

- **AMI filings**
  - Utilities (SPS & PNM) are currently under PRC directives re: Grid Mod filings or judicial review
    - SPS: directed to file in July
    - PNM: requested deferral to October
    - EPE: stipulation filed (April); briefs filed (June)

  - For current/future AMI and related filings:
    - Require assessment of status of distribution grid and associated utility operations
    - Identify incremental approach to increased utility engagement with distribution-level data, planning and associated filings for public review
    - Identify intended uses of AMI capabilities and timing of implementing each use

Recommended PRC Process Improvements

- **Future Planning Filings: Establish sequence and timetable**
  - Distribution system and related upgrades (as currently directed by PRC)
  - Future IRP proceedings: articulate coordination & streamlining expectations
  - Articulate the vision for the evolution of planning (via rule language, Order or both)

Key Conclusions and Recommendations

- Move forward with Grid Modernization Rulemaking
  - Create draft language; initiate formal process

- Embrace PRC leadership role in Grid Modernization
  - Identify key milestones (AMI; HCA; forecasting; NWA/DERs; EVs)
  - Initiate key process improvements (cost-effectiveness; presumption of prudence)
  - Approach incrementally, with appropriate utility discretion re: details

- Prepare for the future regulatory complexity
  - Pause filings (plans/applications), as necessary, until rules are final
  - Anticipate future linkages between planning proceedings

Objectives

Gather feedback on Gridworks' conclusions and recommendations

- *How well do Gridworks' conclusions and recommendations reflect what we've heard in the Grid Modernization webinar series*?
- *How can they be improved?*

Wrap Up

- **Participant Survey**
  - Please take 5 minutes now to complete: **https://forms.gle/h2cVnJGNCtwTWYdV7**

- Final Report by End of August
- **Thank you!**

HOW CAN WE HELP?

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