

MADRI INTEGRATED DISTRIBUTION PLANNING (IDP) GUIDANCE WHITE PAPER

OUTLINE TOPICS

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- I. EXECUTIVE SUMMARY (2-3 pages)
- II. INTRODUCTION: PURPOSE AND SCOPE OF THIS GUIDANCE (2-3 pages)
 - A. Current state/future state drivers
 - B. Provide guidance to Commissions for the establishment of IDP in MADRI States
 - C. Be specific as to restructured states
 - D. Set forth a process for establishing IDP
 - E. Promote consistency among MADRI regulatory commissions and utility footprints
 - F. Goal of the IDP
 - 1. Discussion of the Public Good/Interest for doing IDP
 - 2. Reduce T&D costs Improve grid efficiency
 - 3. Increase resiliency and security
 - 4. Facilitate transactive energy
 - 5. Safe, reliable, and secure grid
 - 6. Support short- and long-term least cost integrated distribution planning
 - 7. Promote the operational integration of DERs
 - 8. Optimize locational value of DER
- III. IDP PROCESS OPTIONS (5-6 pages)
 - A. Commission authority
 - B. Rulemaking and/or Order: pros and cons
 - C. Stakeholder participation
 - D. Binding or non-binding effect of a Commission Order on a utility IDP
 - E. Scope of IDP: DERs to consider
 - F. Scope of IDP: Utility vs. Statewide Planning
 - 1. Considerations for interface with PJM
 - 2. Consideration of creating a Distribution System Operator
 - 3. Integration of efforts across Commission dockets and processes, other state agency processes, utilities and RTO
 - 4. Pros and cons of utility-by-utility or statewide IDP
 - 5. Synergies with other planning processes, grid modernization
 - G. Establishing the planning horizon (i.e., number of years included in plan)
 - H. Creation of an Action Plan within the IDP
 - I. Timeline for the IDP, frequency of filings
 - J. Addressing Alternative Ratemaking to focus on IDP issues
- IV. IDP CONTENT: WHAT INFORMATION DOES THE COMMISSION NEED?

- A. Review of how the distribution system is currently planned, and how challenges are currently handled (contrast similarities and differences across states in a table) (2-3 pages)
- B. Net Load forecasts, including different scenarios and a description of forecast methodology (3 pages)
- C. Engineering assessment of distribution capacity on various parts of the system (10 pages)
 - 1. Identification of existing DERs and Microgrids
 - 2. Forecasting of new DERs and Microgrids
 - 3. Hosting capacity analysis –
 - 4. Identification of weaknesses on the distribution grid
 - 5. Identification of constraints on the grid
 - 6. Criteria for prioritization of grid upgrades
 - 7. Identification of where DERs can be most useful on the system
 - a. DER adoption forecasts (including estimates of DER capacity, number of customers with DER, etc.) and different scenarios and a description of forecast methodology
 - b. Attributes of DERs and how to value
 - Scalability potential to enable more DER connections
 - 8. Least cost options for the transition from one-way to two-way power flows – (1-2 pages)
 - 9. Recommendations/plan for increased system resiliency (1-2 pages)
- D. Timeline for grid upgrades and the potential for avoiding the upgrades with non-wires alternatives (1-2 pages)
- E. Identification of Technical Considerations to be discussed in an IDP (10 pages)
 - 1. Applicable Standards (e.g., IEEE 1547 but also others)
 - 2. Ability to integrate new services and products
 - 3. Interoperability
 - 4. System resiliency
 - 5. Activities to improve system efficiency
 - 6. Efforts to manage assets cost-effectively
 - 7. Security measures to protect against cyber attacks
 - 8. System performance and grid optimization to integrate DERs (DERMS)
 - 9. Environmental Management/Environmental Compliance Issues
 - 10. Critical infrastructure and resilience
- F. Identification of communications equipment needed for transactive energy (3-4 pages)
 - 1. Transparency protocols
 - 2. Data requirements
 - 3. Access to data and privacy
- G. Identification of technological needs (1 page)
- H. Review of interconnection procedures (1 page)

- I. Discussion of state of coordination with resource and transmission planning (PJM) – 2 pages
- J. Policy drivers, looking ahead at what is shaping the growth of DERs in the short and long term in the utility’s service territory (1 page)
- K. Challenges that alternative ratemaking could address and recommendations (2 pages)
- V. CHALLENGES FOR DEVELOPING AND IMPLEMENTING AN IDP
 - A. Commissions (2-4 pages)
 - 1. Approved rate designs
 - 2. State rules that might prohibit/inhibit DER deployment
 - 3. Data transparency/ownership
 - B. Utilities (5 pages)
 - 1. Utility lost revenue concerns
 - 2. Utility capital bias
 - 3. Potential for stranded assets
 - 4. Ownership issues: can utilities own DERs, namely storage?
 - 5. Physical constraints on the grid, i.e. the actual hosting capacity
 - C. Customers (2-3 pages)
 - 1. Familiarity with DER performance/benefits, comfort with customer control
 - 2. Customer education and acceptance
 - 3. Low-income access
 - 4. Inertia
 - D. DERs (3-4 pages)
 - 1. Customer compensation for DERs – recognizing full value to the grid
 - 2. Lack of aggregation option
 - 3. Coordination between utility and DER provider
 - 4. Timeline for IEEE rollout of smart inverter functions
 - E. PJM/Utility Interactions (1-2 pages)
- VI. CONTENT OF A COMMISSION ORDER (3-4 pages)
 - A. Approve, disapprove, modify, or require further revisions
 - B. Timeline
 - C. What actions could an IDP trigger?
 - D. Cost approval process for actions from an IDP
 - E. Summary of issues and positions
 - F. Findings of Fact and Conclusions of Law
- VII. CONCLUSIONS AND RECOMMENDATIONS (2-3 pages)
- VIII. APPENDIX (4-5 pages)
 - A. Glossary of Terms
 - B. Reference Documents by Chapter

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Highlighted sections – Volunteer author needed