



REPORT OVERVIEW

NON-WIRES SOLUTION PLAYBOOK

In an era of accelerating climate change, new investments in the electric grid can either be a part of the solution or part of the problem.

The electric grid of today is inefficient in how it distributes energy, and moreover it is profoundly financially inefficient in allocating capital. Because of its financial inefficiency, the utility sector has vast untapped potential to make investments that reduce emissions and save all consumers money.

As existing electric transmission and distribution infrastructure ages, the United States is expected to invest \$600 billion in upgrades by 2030. If conducted through the business-as-usual “rate-base” approach, these investments will be both financially and energy-inefficient, as well as lock in additional greenhouse gas emissions. However, new distributed energy resources (DERs) and energy management software solutions provide a cost-effective alternative to defer or obviate the need for expensive traditional infrastructure investments. Known as non-wires solutions (NWS), portfolios of DER technologies can provide ratepayers with significant cost savings while achieving emissions reductions. The NWS approach is a powerful tool to evolve away from the inefficiency of the rate-base while animating competitive DER markets and engaging customers in new ways.

In recent years, NWS has developed a proven track-record of success across U.S. Climate Alliance states and beyond. In New York, NWS are being considered as a part of each utility’s capital planning process, which will lead to billions of dollars in savings for ratepayers. In Washington State, an NWS

project at the transmission-level has also yielded immense benefits. These examples show how the NWS approach is already creating value and achieving results. However, some barriers to broader implementation of NWS include: lack of clarity around the NWS value proposition, difficulty in identifying NWS opportunities, and insufficient resources to support new procurement processes. These barriers have prevented the embedding of the NWS approach in everyday utility planning processes across the country.

To help scale the benefits of NWS, Rocky Mountain Institute (RMI) is working with stakeholders in U.S. Climate Alliance states to develop actionable recommendations that utilities, regulators, and developers can use to overcome these challenges and increase NWS implementation. RMI has conducted interviews with more than 60 experts across the country, representing over 20 utilities, as well as developers, regulators, trade associations and industry players working to develop non-wires solutions. In fall 2018, RMI will release a report summarizing these findings, including a ‘playbook’ for scaling successful NWS projects and resources that provide practical guidance for the utility procurement process.

KEY TAKEAWAYS

RMI has identified three primary components for setting up a successful NWS program:

1. Create a supportive regulatory environment

In traditional cost-of-service regulation, utilities are incentivized to invest in traditional, capital-intensive infrastructure solutions. To improve the financial efficiency and energy efficiency of the grid, as well as drive innovation into the system, Public Utility Commissions should seek to avoid simply adding the costs of NWS and grid modernization to the rate-base. To accelerate the development of NWS in their states, regulators can consider the following supportive actions:

- Establishing utility financial incentives for implementing—or mandates for considering— non-wires solutions
- Updating distribution planning processes to make opportunities for NWS implementation more accurate and transparent
- Developing robust screening criteria for NWS projects
- Creating frameworks for evaluating investment opportunities that provide utilities with the tools needed to accurately compare non-wires and traditional infrastructure projects

2. Ensure utility structures and practices enable non-wires solutions development

Utility procurement practices, organizational structures, and expertise are currently designed to efficiently procure traditional infrastructure solutions. Adjustments need to be made for utilities to capture the benefits of NWS opportunities. To accelerate the development of NWS projects in their service territories, utilities can consider the following actions:

- Re-designing internal utility organizational structures to support effective communication between planning, procurement, and DER experts to develop creative, practical non-wires solutions
- Considering probabilistic planning to best leverage the full range of values that a portfolio of DER solutions may provide; deterministic planning for peak load scenarios may no longer be sufficient
- Engaging systematically with technology providers to fully understand their product capabilities, and ensure competitive procurement processes are designed to deliver bids that meet underlying grid needs most effectively
- Seeking frequent stakeholder feedback on the very complex optimization challenge of assembling or soliciting an NWS portfolio

3. Identify the best-fit procurement strategy

When focusing on competitive procurement of NWS, utilities should consider several adjustments to their existing infrastructure procurement processes:

- Technology agnostic, needs-based problem statements which provide potential bidders with ample utility data to understand the scope of the problem and determine the viability of different technical solutions
- Performance-based solution descriptions that describe the desired outcomes of a technical intervention, rather than the solution itself
- Transparent evaluation criteria, which can help developers understand how competitive their bid might be with respect to both traditional solutions as well as other NWS bidders

NEXT STEPS

RMI will publish a playbook with more detailed recommendations on these key findings, including specific resource documents to support procurement of non-wires solutions:

- Screening criteria: an evaluation of best practices for the development of screens for considering NWS projects, and recommendations for implementation
- Annotated Request For Proposals (RFP) template: recommendations for drafting RFPs for competitive procurement of non-wires solutions, including needs definition, data requirements, and timeline considerations
- Evaluation framework: a template for considering the costs of an NWS project and the values it may provide to a utility's system and its ratepayers
- Term sheet considerations: example of key terms and contracting options for NWS projects



About Rocky Mountain Institute

Rocky Mountain Institute (RMI)—an independent nonprofit founded in 1982—transforms global energy use to create a clean, prosperous, and secure low-carbon future. It engages businesses, communities, institutions, and entrepreneurs to accelerate the adoption of market-based solutions that cost-effectively shift from fossil fuels to efficiency and renewables. RMI has offices in Basalt and Boulder, Colorado; New York City; Washington, D.C.; and Beijing.

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The Playbook will be available in October on RMI's website <https://rmi.org/our-work/electricity/>