



NORTH CAROLINA ENERGY REGULATORY PROCESS

*In Fulfillment of the North Carolina Clean Energy Plan B-1
Recommendation*

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SUMMARY REPORT AND COMPILATION OF OUTPUTS

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This report is written by RMI and RAP to consolidate and record solutions explored by NERP in 2020. It does not necessarily represent consensus viewpoints or unanimously held positions of all participating organizations.

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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.

ABOUT THE REGULATORY ASSISTANCE PROJECT

The Regulatory Assistance Project (RAP) is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future. RAP helps energy and air quality policymakers and stakeholders navigate the complexities of power sector policy, regulation, and markets.

ABOUT THE NORTH CAROLINA ENERGY REGULATORY PROCESS

Governor Cooper's Executive Order 80 mandated the development of a clean energy plan for the state of North Carolina. The Clean Energy Plan recommended the launch of a stakeholder process to design policies that align regulatory incentives with 21st century public policy goals, customer expectations, utility needs, and technology innovation. The stakeholder process was launched in February 2020 and has led to policy proposals on energy reform. This report is a summary of the 2020 process, written by the convenors.

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Foreword

This summary report reflects the collaborative work of a committed group of North Carolina energy stakeholders, who dedicated themselves and their organizations to the NC Energy Regulatory Process (NERP) throughout the year of 2020. Building upon the foundational efforts of the 2019 North Carolina Clean Energy Plan, NERP is among a set of critical next steps to advance the state's energy transition. The regulatory reforms explored in NERP during the last year are critical topics that will shape North Carolina's electricity system for decades to come.

NERP was conducted in a collaborative, consultative manner, featuring nine workshops, multiple topic-focused webinars, and regularly occurring study group meetings among subsets of participants. In consultation with the NC Department of Environmental Quality, Rocky Mountain Institute (RMI) and the Regulatory Assistance Project (RAP) convened and facilitated NERP, providing direction, organizing support, technical expertise, workshop agenda design, and professional facilitation. Through that approach, stakeholders held open, wide-ranging dialogues exploring reform options and strove to advance proposals best suited to North Carolina's context, values, and public policy goals.

Throughout the 2020 NERP process, participants worked in good faith to identify broadly supported, meaningful reforms that balance stakeholder interests and state policy goals. The numerous outputs produced by NERP—fact sheets, guidance documents, and draft legislative language—reflect the collaborative work of the stakeholders and areas of general alignment for the State's energy transition.

This summary report is written by RMI and RAP to consolidate and record solutions explored by NERP in 2020. This report does not necessarily represent consensus viewpoints or unanimously held positions of all participating organizations. Throughout the report, we sought to reflect points of agreement and disagreement among participants, including areas for future attention by regulatory bodies or other processes, while also indicating where general agreement supports certain reforms moving forward—whether in the form of implementation, legislative direction for new regulations, or further study. The specific details of how reforms get advanced will be subject to pending developments and further dialogue among a diverse set of North Carolina stakeholders.

It is RMI and RAP's pleasure and honor to work with North Carolina on these important issues. The State's leadership, including its nationally recognized community of energy system leaders, showcase how critical North Carolina is to our nation's energy transition. Thank you for your good work, your leadership, and this opportunity to collaborate.

Executive Summary

North Carolina's 2019 Clean Energy Plan (CEP) established a goal to reduce greenhouse gas emissions in the state's electric power sector 70% below 2005 levels by 2030, and to attain carbon neutrality by 2050. It encouraged updates to energy system planning processes and regulations that achieve these goals, while maintaining long-term affordability and price stability for North Carolina residents and businesses, and also spurring innovation that grows the economy of the state.

From February to December 2020, a group of North Carolina energy stakeholders collaborated through the North Carolina Energy Regulatory Process (NERP) to consider updates to utility regulations and electricity market structures. NERP served as a platform for exploration and advancement of CEP recommendations, specifically fulfilling the "B1" recommendation to "launch a North Carolina energy process with representatives from key stakeholder groups to design policies that align regulatory incentives and processes with 21st century public policy goals, customer expectations, utility needs, and technology innovation." Through NERP, additional recommendations of the CEP were considered, including in-depth attention to:

- Adoption of a performance-based regulatory framework (B-2)
- Enabling securitization for retirement of fossil assets (B-3)
- Studying options to increase competition in the electricity system (B-4)
- Implement competitive procurement of resources by investor-owned utilities (C-3)

Participants engaged in extensive dialogue on these topics to investigate how each has been implemented in other parts of the country and to consider their potential application to North Carolina. Picking up where the CEP left off, NERP provided a venue for education and shared research on these topics, leading to development of policy proposals that are tailored for North Carolina's unique context.

Rocky Mountain Institute (RMI) and the Regulatory Assistance Project (RAP) convened and facilitated NERP, in consultation with the NC Department of Environmental Quality (DEQ). As independent, outside organizations, RMI and RAP supported NERP through process design and coordination, regulatory expertise and technical assistance, and national perspective to help compare reforms to approaches taken in other states.

This report summarizes key recommendations of NERP as of December 2020, along with context on how the content development evolved. The report has been prepared by RMI and RAP with input from NERP participants to provide a distillation of discussions that occurred throughout the past eleven months, in order to provide a common reference from which reforms can be carried forward in 2021.

The report is accompanied by a set of "outputs" produced by NERP participants, through their work in four study groups: performance-based regulation, wholesale markets, asset retirement, and competitive procurement. Those outputs were developed to aid briefings to decision-makers on the detailed findings for each of the four focus areas of NERP. Due to the multi-stakeholder nature of NERP with organizations and individuals comprising differing viewpoints and priorities, policy positions and recommendations described in this report do not necessarily reflect full consensus or unanimous support for a reform. In authoring this summary report, RMI and RAP have made every effort to communicate areas of alignment and to identify issues for continued consideration in future work.

NERP Recommendations

In support of the Clean Energy Plan and B1, B2, B3, B4 and C3 recommendations, NERP participants have recommended regulatory changes in four key reform areas. Those are summarized here, with additional detail provided in the relevant sections of the report as well as in topic-specific briefing documents and other outputs produced by NERP study groups.

NERP participants recommend the following:

- The General Assembly and the North Carolina Utilities Commission (NCUC) pursue a comprehensive package of PBR reforms to include a multi-year rate plan (MYRP), revenue decoupling, and performance incentive mechanisms (PIMs).
- The General Assembly direct the NCUC to conduct a study on the benefits and costs of wholesale market reform and implications for the North Carolina electricity system.
- The General Assembly expand securitization to be an available tool for electric utilities to retire undepreciated assets, in addition to the current authorization related to storm recovery costs.
- The General Assembly expand existing procurement practices to utilize competitive procurement as a tool for electric utilities to meet energy and capacity needs defined in utility Integrated Resource Plans (IRPs) and where otherwise deemed appropriate by the NCUC.

Many participants expressed a desire to combine above recommendations into a “package” of legislation in the 2021 legislative session that also includes other provisions related to climate and clean energy. That is, there was agreement to combine NERP produced policy concepts into one piece of legislation, and that such legislation should also include other enabling policies not discussed in NERP. Agreement was not reached on what that additional enabling policy ought to be. Multiple participants believe an enabling policy specifically directed at increasing clean energy deployment beyond currently authorized levels or reducing carbon emissions is a necessary complement to the NERP reforms. A handful of participants expressed that legislation to study a wholesale market should be considered separately.

While the bullets above represent general agreement among NERP participants regarding components of a suggested reform package, no one reform enjoys the full support of every NERP participant and there are nuances to participants’ views. Those nuances are explored more fully in this report. In addition, study groups produced detailed outputs to help advance respective reforms, which are attached in the Appendix.

Advancement of the identified reforms will require continued dialogue and negotiation between North Carolina energy stakeholders. To that end, participants agreed at the completion of the 2020 NERP process to remain in dialogue with each other and carry forward these recommendations to brief North Carolina lawmakers, decision makers, and constituents, in an effort to support their passage in the 2021 legislative session.

Background

North Carolina Governor Roy Cooper's Executive Order 80 (EO 80) laid out an emission reduction goal for North Carolina of 40% by 2025 and DEQ to develop the CEP for the state.¹ The CEP was meant to encourage the use of clean energy resources and technologies and to foster the development of a modern and resilient electricity system. In response to EO 80, DEQ launched a multi-month public stakeholder process to collect input and conduct analysis of North Carolina's energy systems. This input and analysis was used to identify policies and strategies to guide policymakers and decision-makers on ways to implement a clean energy vision for the state. The resulting CEP, released in October 2019, contains short, medium, and long-term recommendations in five strategy areas. It lays out a vision that includes the following overarching goals:

1. Reduce electric power sector greenhouse gas emissions by 70% below 2005 levels by 2030 and attain carbon neutrality by 2050.
2. Foster long-term energy affordability and price stability for North Carolina's residents and businesses by modernizing regulatory and planning processes.
3. Accelerate clean energy innovation, development, and deployment to create economic opportunities for both rural and urban areas of the state.

The stakeholder process conducted as part of the CEP development sought input on the key issues that need to be addressed in order to make the CEP vision a reality. The process of developing the CEP's analysis and recommendations involved extensive stakeholder engagement including six large workshops attended by a cross-section of diverse North Carolina energy stakeholders, nine public meetings, and hundreds of pages of written comments and online engagement by the public. Stakeholders were asked to identify ways in which the current policy and regulatory framework in the state is working to accomplish their goals, and ways in which it needs to be modified in order to accomplish those goals.

The CEP stakeholders prioritized three recommendations that would move the state forward toward achieving the goals above:

1. Develop carbon reduction policy designs for accelerated retirement of uneconomic coal assets and other market-based and clean energy policy options.
2. Develop and implement policies and tools such as performance-based mechanisms, multiyear rate planning, and revenue decoupling, that better align utility incentives with public interest, grid needs, and state policy.
3. Modernize the grid to support clean energy resource adoption, resilience, and other public interest outcomes.

Among the CEP's many insights, it found that new policy priorities and current and emerging trends in the electricity industry are forcing a reconsideration of traditional regulation and utilities' responsibilities. Stakeholders generally agreed that the existing electricity regulatory system has been successful at accomplishing historical policy goals, but that it is not set up to support 21st century policy goals such as enhanced customer access to energy choices, rapid expansion of clean energy deployment, and environmental outcomes. The CEP stated that these responsibilities are "expanding to include new expectations for environmental performance, carbon reduction, customer choice, resilience, equity, and adapting to (or enabling) sector-wide innovation, among others, while retaining long-standing responsibilities such as reliability and affordability."

¹ <https://files.nc.gov/ncdeq/climate-change/EO80--NC-s-Commitment-to-Address-Climate-Change---Transition-to-a-Clean-Energy-Economy.pdf>

The CEP identified multiple trends in the electricity industry that necessitate updating North Carolina's energy regulatory framework. In light of this, the CEP identified a need for a deeper, sustained engagement from stakeholders outside of traditional legislative and regulatory forums to "design policies that align regulatory incentives and processes with 21st Century public policy goals, customer expectations, utility needs, and technology innovation." The CEP identified topics such as regulatory incentives, integration of distributed generation, transparent and efficient regulatory processes, and holistic resource planning as being ripe for consideration. In addition, other sections of the CEP identified the introduction of more competition into the North Carolina energy market, possible wholesale electricity market reform, and coal power plant retirement as needing further analysis and discussion. The CEP identified the need for such a process to build on, not duplicate, the work that dedicated North Carolina stakeholders accomplished in the CEP process.

NERP Overview

The CEP B-1 recommendation, "launch a North Carolina energy process with representatives from key stakeholder groups to design policies that align regulatory incentives and processes with 21st century public policy goals, customer expectations, utility needs, and technology innovation," led to the creation of the North Carolina Energy Regulatory Process (NERP) in 2020. NERP was formed to advance components of the CEP that could accomplish the B-1 recommendation. Several other CEP recommendations were explored in NERP due to strong interest from participants, including recommendations around wholesale market reform, securitization for fossil asset retirements, and competitive procurement (CEP recommendations B-2, B-3, B-4, and C-3).

Purpose

NERP worked to produce recommendations for policy and regulatory changes that can be delivered by the participants to the North Carolina General Assembly, North Carolina Governor, NCUC, and other entities as appropriate. These take the form of issue briefs, policy proposals, and draft proposed legislation developed by participants during the process.

Objectives

The work of stakeholders was set to focus on priority items of the CEP which were identified as actionable in 6-12 months, through an ongoing, policy-oriented convening process. In particular, NERP applied the following process objectives to advance CEP goals on electricity market design and utility regulatory reform:

1. Build expertise and trust among North Carolina energy stakeholders through shared principles, foundation setting, education, and identification of priority action areas
2. Examine alternatives to the traditional utility regulatory model and incentives, carbon reduction policies, and as needed, energy market reforms identified by stakeholder group
3. Produce specific policy proposals that participants can work to implement

The objectives of the NERP process were meant to build upon the work already completed in the CEP process and to address the substantive issues identified by the CEP B-1 recommendation, as well as other related CEP recommendations.

The policy proposals and other work products that NERP participants created can be found in the Appendix and at the DEQ's Clean Energy Plan website.² They are also being distributed directly to decision-makers throughout the State.

² <https://deq.nc.gov/CEP-NERP>

Process Overview

NERP included nine workshops during 2020, supplemented by four webinars, and extensive study group research and discussion. Workshops were intended to be in-person, but due to limitations on travel and in-person meetings imposed by the COVID-19 pandemic, all workshops were held virtually with the exception of the February kickoff workshop.

NERP proceeded according to three phases: foundation setting, topical deep dives, and policy development. Foundation setting took place during the first workshop to align stakeholders around the purpose and objectives of the process. At this workshop, participants identified priority outcomes for attention in future NERP work, reviewed CEP recommended topics, and gave input on which topics should be the focus of future work. In the second phase of NERP, spanning workshops 2 through 5, topical deep dives provided dedicated time for participants to learn about priority topics of CEP and stakeholder interest:

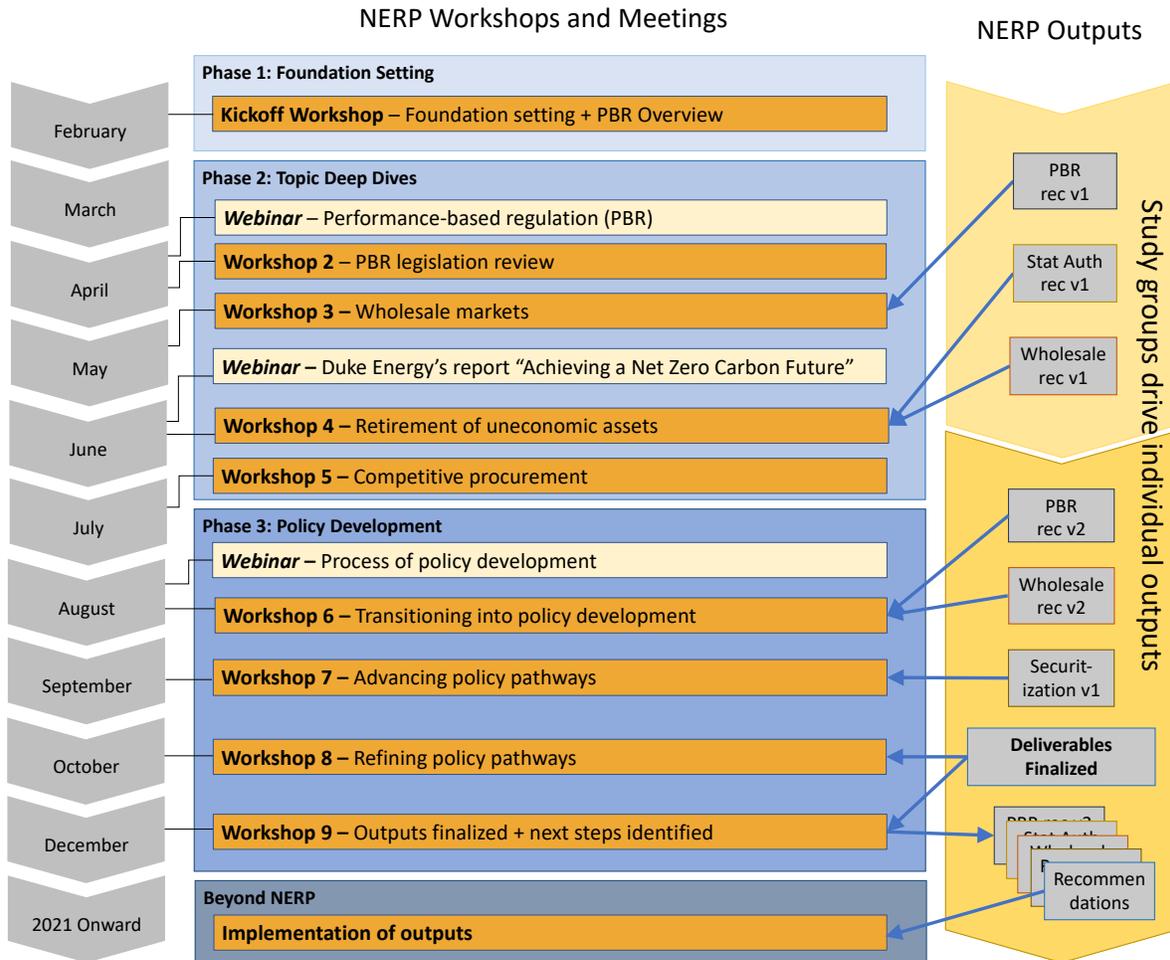
- Performance-based regulation (PBR),
- Accelerated retirement of generation assets including through securitization,
- Wholesale market design and competition, and
- Competitive procurement for resource acquisition.

The third phase of NERP focused on turning topics of interest into policy proposals. Four study groups formed, one for each of the topical deep dive focus areas. Study groups consisted of 5-15 members of NERP who self-selected to participate in the development of policy ideas within each topic area. Study groups each had two co-chairs that helped organize and lead the advancement of policy proposals. Study groups were responsible for proposal development, presenting to the full stakeholder group on their progress, and for soliciting feedback and incorporating that feedback into proposals. Study groups shared drafts of their proposals and other outputs in NERP workshops 6, 7, and 8 where they received substantive feedback and incorporated the views of other stakeholders not involved in the study group deliberations. Study groups produced proposals that were presented at the final workshop in December 2020.

Stakeholders were not required to endorse final recommendations. While work products and final recommendations received broad support and general agreement on the elements contained within them, there is not full consensus on all details. RAP and RMI sought to include areas of disagreement in this report, noted in the “Key Points of Discussion and Content Development” sections of each topic.

2020 North Carolina Energy Regulatory Process Workplan

Last updated on December 18, 2020



Convening Team

The Regulatory Assistance Project (RAP) and Rocky Mountain Institute (RMI) partnered to convene NERP. RMI and RAP served in two primary roles through the process. The first role was as convenor and facilitators of the process. The organizations collectively designed the year-long process and the individual workshops. In addition, RMI and RAP provided technical expertise and assistance to guide NERP activities and support output development. This was necessary to design effective workshops, design the content for the topical deep dives, and to invite additional content experts to serve as presenters. RMI and RAP also provided technical expertise to study groups when requested by participants.

NERP Participants

To support the most constructive stakeholder process, participation at meetings was limited to 30-40 individuals spanning North Carolina organizations representing a wide variety of interests. This multi-stakeholder approach allowed broad and diverse representation among participants while promoting progress on the specific topic areas within the scope of NERP. Based on review of organizations and individuals that participated in the CEP process, the North Carolina DEQ helped identify the organizations to invite to participate in NERP. A list of participant organizations can be found in the appendix.

In limited cases, organizations were allowed to send additional observers to attend meetings in order to support learning and product development. After NERP settled on its ambitious agenda and scope of topics, the convening team offered delegates to include additional participants from their organizations to support study group content development.

Expectations of Participants

- Due to restrictions on attendance, participants were asked to represent a broader set of stakeholders and/or constituents at meetings. This required additional outreach and engagement between meetings to solicit input.
- Participants (or a pre-determined designee) were expected to attend every session of the process.
- Participants were asked to work together between meetings to develop presentations for the broader group and materials that support the summary report.
- Participants were expected to work in good faith to achieve process objectives. This included bringing a collaborative spirit, and a willingness to challenge assumptions and consider new ideas to support North Carolina energy goals.
- Participants were not required to explicitly endorse final written products or policy ideas that emerge from NERP.

Guiding Outcomes

At the February kickoff workshop, participants identified outcomes that they would like to see for the process and for resulting energy reforms. The list of outcomes is shown below, grouped by the following outcome categories: improve customer value, improve utility regulation, improve environmental quality, and conduct a quality stakeholder process. When asked to prioritize three outcomes, affordability, carbon neutrality, and regulatory incentives aligned with cost control and policy goals rose to the top and became the agreed upon priorities of NERP. Outcomes are seen categorized below, with the top three priorities highlighted. These outcomes served as a guiding framework for NERP's work, against which energy reform options were considered.

Outcome Category	Outcome
Improve <u>customer value</u>	Affordability and bill stability
	Reliability
	Customer choice of energy sources and programs
	Customer equity
Improve <u>utility regulation</u>	Regulatory incentives aligned with cost control and policy goals
	Administrative efficiency
Improve <u>environmental quality</u>	Integration of DERs
	Carbon neutral by 2050
Conduct a quality <u>stakeholder process</u>	Inclusive
	Results oriented

Priority Areas

After the second phase of NERP that consisted of topical deep dives on PBR, wholesale markets, accelerated retirement of generation assets, and competitive procurement, the group decided not to narrow the list of reforms, believing that all four topics were important for the state of North Carolina to consider to fulfill state clean energy goals. Thus, study groups were formed for each topic. In workshops 8 and 9, NERP considered how the priority areas could interact or be combined as a package of reforms.

The following sections summarize the work of the four study groups and related NERP discussions.

Performance-based Regulation

PBR in Brief

- Performance-based regulation was a significant focus of NERP stakeholder work, following its identification in the CEP as a key tool to realign utility financial incentives with social and policy goals.
- A PBR study group conducted extensive research of PBR mechanisms and their applicability to North Carolina utilities, including multi-year rate plans, revenue decoupling, and performance incentive mechanisms. In combination with other updates to utility regulations, these PBR mechanisms can motivate utility achievement of key outcomes while balancing customer costs with utility financial considerations.
- The primary recommendation on PBR from NERP is for the legislature and the NC Utilities Commission to pursue a comprehensive package of PBR reforms to include a multi-year rate plan (MYRP), revenue decoupling, and performance incentive mechanisms (PIMs).

Background

Performance-based (or outcome-based) regulation is intended to motivate utilities to accomplish outcomes that customers or society deem desirable. In doing so, PBR can help shift utility focus away from certain outcomes that may be inadvertently incentivized by traditional ratemaking.

In the current system, utilities increase their revenues by increasing electricity sales in the short term (known as the throughput incentive) and increase their profits by favoring utility capital spending over other options as the method by which to solve identified grid needs (known as the capital expenditure, or capex, bias).

The *throughput incentive* arises from the fact that, in traditional ratemaking, prices are set primarily on a volumetric basis based on a historic level of costs and sales, normalized and adjusted for known and measurable changes. After prices are set in the rate case, if utilities sell more electricity than was estimated in the rate case they increase their revenues and therefore profits (assuming costs do not fluctuate significantly based on sales volume in the short term). This incentive leads utilities to be reluctant to pursue activities and programs that lead to a decrease in sales throughput, such as energy efficiency measures or enabling customer installation of distributed generation.

The *capex bias* originates from the fact that utilities are typically allowed to earn a regulated rate of return (profit percentage) on shareholder capital that they invest in physical assets, such as power plants, transmission wires, distribution grid assets, company trucks, computers, buildings, etc. This results in utility preference for capital expenditures as solutions for grid needs, whereas many cost-saving or emissions-reducing opportunities result from program innovations, such as customer efficiency programs, that fall into the category of operating expenditures (opex), on which no rate of return is earned.

PBR offers a set of tools that can create utility incentives that are more aligned with customer and societal goals. For example, PBR can make it more likely that clean energy, energy efficiency, and carbon reduction goals are achieved by rewarding utilities for making progress on these outcomes. There is no one uniformly adopted combination of PBR tools. Some states have implemented one or two reforms; others are examining comprehensive measures. Many states have been using revenue decoupling for quite some time and are more recently considering the addition of multi-year rate planning and performance mechanisms.

NERP primarily discussed three PBR mechanisms: revenue decoupling, multi-year rate plans, and performance mechanisms. A brief description and explanation of these three mechanisms is provided below.

Revenue Decoupling

Decoupling breaks the link between the amount of energy a utility delivers to customers and the revenue it collects, thus minimizing the throughput incentive described above. Allowed revenue is set in a rate case as usual. Rather than setting prices in the rate case and leaving them unchanged until the next rate case, under revenue decoupling prices are set in the rate case but adjusted up or down over the course of the rate effective period to ensure that collected revenues equal allowed revenues (no more and no less). Decoupling goes a step further than NC's existing "net lost revenue" mechanism, which targets only approved efficiency or demand-side management (DSM) programs, by removing the disincentive to reduce sales in all situations. This would include reduced sales from distributed energy resource (DER) deployment, reduced sales from efficiency and conservation efforts by customers that are not part of a utility program, and reduced sales from certain rate designs or other utility programs that may not qualify as an approved DSM/energy efficiency (EE) program.

Multi-Year Rate Plan (MYRP)

A MYRP begins with a rate case that sets the utility base revenues for the test year, based on the normal ratemaking process. Under a MYRP, the revenue requirements necessary to offset the costs that are contemplated to occur under an approved plan would be set for multiple years in advance (typically 3–5 years). Utility compensation would be based on forecasted costs that are expected under the approved plan, rather than the historical costs of services. Customer rates would be reset annually through NCUC review under the terms set out for the MYRP.

Performance Incentive Mechanisms

Introduction of carefully designed performance incentive mechanisms (PIMs) into ratemaking procedures could create new incentives for utilities to accomplish new policy goals by linking a portion of utility revenues to utility performance in achieving those goals. PIMs provide positive and/or negative incentives to utilities to perform certain tasks or accomplish certain outcomes. If a significant portion of a utility's revenues is tied to performance, PIMs can begin to shift a utility's investment or management focus away from increasing capital assets and toward the accomplishment of the public policy objectives reflected in PIMs, potentially mitigating the utility's capex bias.

In 2007, North Carolina passed Session Law 2007-397 ("Senate Bill 3"), which encourages renewable energy and energy efficiency. That legislation authorized the NCUC to approve performance incentives for utilities related to adopting and implementing new DSM and EE measures. The PBR proposal by NERP would expand that to include performance incentives for other areas of public policy interest. In the rules adopting Senate Bill 3, the NCUC stated that recovery of net lost revenues could be included as an incentive for DSM/EE programs, and the NCUC subsequently approved the recovery of net lost revenues for DSM/EE programs for utilities within the state, effectively decoupling sales from utility profits for reductions in sales caused by utility DSM/EE programs. As discussed above, the PBR proposal by NERP goes a step further by removing the disincentive to reduce sales in all situations.

Key Points of Discussion and Content Development

NERP participants generally agreed that a package of PBR reforms as described above is desirable for the state of North Carolina, and that the reforms should be implemented together.³

Some stakeholders believe that individual PBR mechanisms could be successfully implemented in isolation. As described above, each of the mechanisms studied in NERP has the ability to address different challenges identified in the current regulatory framework. NERP participants tended to agree that the three mechanisms are complimentary and should be implemented together.

Points of Discussion and Agreement: Decoupling

Stakeholders agreed upon many design details and recommendations for the NCUC regarding decoupling. Some of the key points of consensus were that residential customers and all utility functions (generation, transmission, distribution) should be included. The group also agreed that small/medium general service customers should be included but noted that there may be some technical challenges with doing so given the current structure of the net lost revenue mechanism. The group also generally agreed that lighting and large general service customers would not need to be included, but that this design detail would need to be decided upon in the context of implementing PBR at the NCUC. Stakeholders also agreed that there were two methods for adjusting revenue in a decoupling mechanism that ought to be considered but did not come to agreement on a recommendation because there were pros and cons identified for both methods. Stakeholders agreed that annual adjustments to rates should be transparent, and that there should be a cap on the annual size of any adjustment to rates with any additional amount deferred to a future period. Finally, the group agreed that if electric vehicle charging sales are included in a decoupling mechanism, then other approaches (e.g., a PIM) should be used to incentivize the utility to enable EV adoption.

Points of Discussion and Agreement: Multi-Year Rate Plan

Stakeholders generally agreed that the concept of a MYRP could work for North Carolina. MYRPs can encourage cost containment and can remove the current disincentive utilities face in making smaller scale investments needed for the clean energy transition by reducing regulatory lag on those investments. Many of the implementation details were not agreed upon in NERP and would need to be discussed in greater detail through the process of filing and approving a PBR Application at the NCUC. The group believes that MYRP can work well with decoupling and PIMs as part of a broader package of reforms and that the cost containment incentive in a MYRP could motivate the utility to choose the most cost-effective solutions for grid needs, leading to cost control that would benefit customers. At least one stakeholder expressed a concern that a MYRP can reduce NCUC oversight and the ability of all stakeholders to advocate on points important to them on a regular basis, as they are currently able to do in rate cases.

Stakeholders did not agree on a revenue adjustment mechanism to be used to adjust rates between rate cases but did agree that it should be clearly defined at the outset in the initial rate case and closely coordinated with the revenue adjustment mechanism chosen in the decoupling mechanism. The group recommends using a three-year term for an initial MYRP in order to gain experience with the mechanism. The scope of costs to be included within the MYRP was a point of disagreement among the stakeholders. Historically, MYRPs implemented elsewhere have covered most utility base costs in order to create the strongest cost-containment incentive possible. However, a MYRP would not necessarily need to apply to a broad swath of utility costs. Stakeholders within the PBR study group had varying opinions on whether the scope of costs covered by the MYRP should be broad or narrow. Some stakeholders expressed concerns that a MYRP of broader scope could increase risks to ratepayers and favored an approach that limited MYRP to known and

³ Deeper explanation can be found in the NERP PBR study group document titled *NERP Guidance on Performance-Based Regulation*.

measurable capital projects. The PBR study group recommends that an earnings sharing mechanism (ESM) be used in order to protect both customers and shareholders from over- and under-earnings. However, the group did not agree on whether there ought to be a “dead-band” of over- or under-earning in which no adjustment is made, and how sharing tiers within the ESM ought to be designed.

Points of Discussion and Agreement: Performance Incentive Mechanisms

Stakeholders agreed that there ought to be some underlying principles that would guide the design of PIMs and help align around shared objectives. Specifically, PIMs should: advance public policy goals and drive new areas of utility performance; be clearly defined, measurable, and verifiable; comprise a financially meaningful portion of utility earnings opportunities; avoid duplication of other rewards or penalties created by other regulatory mechanisms; not penalize the utility for metrics or outcomes that are not at least somewhat in its control; and reward outcomes rather than inputs. The group agreed that once a PIM is established, it should be revisited on a regular basis to evaluate whether it is helping to achieve the outcome in question. The stakeholders developed an extensive list of possible PIMs and metrics and recommends that the commission require utilities to track as many of the metrics as deemed useful and cost-effective in order to inform future PIM development. The group recommends tracking the performance separately in low-income counties, where feasible. The following outcome areas were discussed: peak demand reduction, integration of utility-scale renewable energy and storage, integration of DER, low-income affordability, energy efficiency, carbon emissions reduction, electrification of transportation, equity in contracting, resilience, reliability, and customer service. Most of these were assigned “preferred” metrics and “alternative” metrics by the group. It should be noted that not all members of the study group agrees with every metric, but general agreement exists that the outcome areas targeted are the right ones.

NERP Recommendations

NERP recommends that the legislature and the utilities commission pursue a comprehensive package of PBR reforms to include a multi-year rate plan, revenue decoupling, and performance incentive mechanisms.

Additional context about these mechanisms and key design decisions that need to be made are discussed below.

Revenue Decoupling

Many states implement decoupling as part of a broader PBR package, and there are synergies between the mechanisms. For example, PIMs can be used to incentivize electric vehicle charging or economic development when decoupling removes these incentives from the current ratemaking structure. Additionally, where decoupling removes a disincentive for the utility to reduce sales through energy efficiency or other means, PIMs can go a step further and create a positive incentive for the utility to reduce sales. Decoupling also works well with multi-year rate plans. The MYRP can provide for small, annual changes in rates, and the decoupling mechanism can true up the sales that the MYRP rates are based on to actual sales realized during each year of the plan. Thus, decoupling and MYRPs together can reduce the need for frequent rate cases and can break the linkage between utility sales and profit margin.

Key design decisions that states must make when implementing decoupling include what rate classes to include within the mechanism, what utility cost functions (e.g., generation, transmission) to include, how to adjust allowed utility revenue over time (if at all), and how to handle surcharges and refunds to customers.

Multi-Year Rate Plan (MYRP)

This approach can create added incentives for the utility to contain costs and can also reduce the regulatory costs from more frequent rate cases. MYRPs can mitigate the regulatory lag associated with certain utility assets, such as grid investments and distributed energy resources, give an incentive for utility cost containment, by setting a framework for predictable revenue increases into the future.

The terms of a MYRP often include the following:

1. Moratoriums on general rate cases for the term of the MYRP.
2. Attrition relief mechanisms (ARMs) in the interim years that automatically adjust rates or revenue requirement to reflect changing conditions, such as inflation and population growth.
3. To maintain or pursue other regulatory and policy goals, MYRPs should be combined with PIMs (sometimes considered “backstop” protections for reliability or other services), an ESM, and other tools.
4. Off-ramp or other course correction tools can be built in to ensure that the commission or other parties have the ability to raise concerns and make adjustments to the plan under certain circumstances.

As discussed above, MYRPs work well with decoupling. Additionally, MYRPs can work well with PIMs by establishing the cost recovery plan for investments that will achieve a goal and then creating a financial incentive or penalty for achieving or failing to achieve that goal. For example, to encourage increases in electric vehicle adoption or distributed energy resources, a multi-year rate plan can include the investments the utility must make to achieve these goals and then a PIM can attach a financial incentive to the goal.

Key design decisions that states must make when implementing multi-year rate plans include: choosing the mechanisms with which to adjust rates between rate cases; the term (or length) of the MYRP which sets the amount of time the utility must “stay out” between rate cases; the scope of the utility costs to be included or covered by the MYRP; whether and how to structure an ESM by which the utility and its customers share the benefits and costs of earnings above and below the allowed return; and how to structure an off-ramp or course correction.

Performance Incentive Mechanisms

Development of PIMs requires setting desired outcomes, identifying metrics that can be used to measure utility performance toward those outcomes, and collecting data to determine how a utility has performed historically. This data can be used simply to track and report utility performance, or to score that performance against a target or benchmark that has been set. It can also be tied to financial rewards or penalties, at which point the mechanism is formally referred to as a PIM. If a utility achieves its performance target, it can receive a financial reward or it can avoid a penalty.

Key design decisions that states must make when developing PIMs include the prioritization of key outcomes to be targeted, identification of potential data sources for tracking utility performance, identification of metrics that will usefully track utility performance toward outcomes, the design of a financial penalty or reward (which can take many different forms), and the time period over which to measure achievement and deliver financial rewards or penalties.

Process Recommendations

The NC General Assembly would need to authorize the NCUC to implement PBR. The NCUC would then need to lead a rulemaking process to set up all of the filing requirements and procedures that a utility would need to follow in a PBR application. The group recommends that the NCUC determine whether and in what form a stakeholder process should take place to gather input prior to a utility filing a PBR application. The group also recommends that the NCUC monitor utility performance and system outcomes and make adjustments to guide utilities to continued improvement and value creation for customers.

PBR Outputs

NERP produced the following documents for dissemination, to inform subsequent policy discussions with various audiences:

1. **Draft PBR legislative language authorizing certain PBR mechanisms in North Carolina:** Legislation that allows the NCUC to use performance-based regulation, specifically revenue decoupling, multi-year rate plans, and performance incentive mechanisms. Directs the NCUC to develop rules related to PBR filings, their reviews, and the decision-making process.
2. **PBR regulatory guidance for the NCUC:** Guidance and recommendations for the NCUC in implementing PBR reforms in ways that reflect the NERP stakeholder discussions
3. **PBR fact sheet:** Three-page fact sheet explaining PBR mechanisms for legislative or similar audiences
4. **Two PBR case studies:** One examining Minnesota's process and experience with PBR; another looking at North Carolina's process and experience with gas decoupling

Wholesale Electricity Markets

Wholesale Electricity Markets in Brief

- Reform of the State wholesale electricity market was a significant focus of NERP stakeholder work, due to its relevance to the CEP broadly, mention in key publications, and recent developments in North Carolina including southeast utilities' proposal for an energy exchange market.
- A study group investigated market reforms and mechanisms specifically where applicable to existing or proposed studies.
- NERP assessed reforms and market designs including the Southeast energy exchange market (SEEM) proposed by utilities in the Southeast U.S., a potential energy imbalance market (EIM), and a regional transmission organization (RTO) for the Carolinas or a larger southeast footprint.
- NERP recommends that the General Assembly direct the NCUC to conduct a study on the benefits and costs of wholesale electricity market reform and implications for the North Carolina electricity system.

Background

Wholesale electricity markets are markets where electricity is bought and sold for resale. Unlike retail transactions – electricity sales to the end user – wholesale transactions consist of power sales from generators to electricity providers. The rates and service standards, as well as reliability and market design of interstate transmission is regulated by the Federal Energy Regulatory Commission (FERC). FERC, established by the Federal Power Act of 1935, oversees all interstate wholesale power sales and markets. State-specific regulators, serving on public utility commissions (PUCs), provide oversight to ensure reasonable rates for end-use customers.

There are seven organized wholesale markets in the U.S. These territories are managed by a Regional Transmission Operator (RTO) or an Independent System Operator (ISO) and regulated by FERC. RTOs & ISOs are balancing authorities; they are responsible for bulk system reliability, transmission system access, and operation of the competitive market mechanisms that allow independent power producers and other non-utility generators to trade and dispatch power. Neither RTOs nor ISOs own generation or transmission but rather control how these assets operate, serving as independent, non-profit, system operators.

The Southeastern and Western U.S. markets are traditionally regulated; a single entity owns and operates the three major grid components - generation, transmission, distribution - within a designated service territory. In a vertically integrated utility market like North Carolina, the regulated utilities own and operate the transmission system, are responsible for bulk system reliability, non-discriminatory transmission system access and are the balancing authority responsible for constant grid operation. In exchange for performing those services, these utilities have prices set by the NC Utilities Commission and are legally obligated to provide reliable electric service to all customers per the regulatory compact.

North Carolina features 3 investor-owned utilities (IOUs), more than 70 municipal utilities, and 26 electric cooperatives. Duke Energy Carolinas and Duke Energy Progress represent the majority of supplied electricity in the state - 96% in 2018. Dominion Energy North Carolina, in the northeast corner of the state, supplied the remaining 4% of utility-supplied electricity. Combined, 23% of IOU sales in 2018 were to the wholesale market where state electric

cooperatives, municipalities, or agencies representing those parties, procured electric power for their retail markets. North Carolina's wholesale market makeup and processes, therefore, have significant relevance to the State population, markets, and industries.

While the NERP was initiated by the CEP: B-1 Recommendation, the CEP listed multiple recommendations related to the state's wholesale market:

- **B-4:** Initiate a study on the potential costs and benefits of different options to increase competition in the electricity sector, including but not limited to joining an existing wholesale market and allowing retail energy choice.
- **C-1:** Establish comprehensive utility system planning process that connects generation, transmission, and distribution planning in a holistic, iterative, and transparent process that involves stakeholder input throughout, starting with a Commission-led investigation into desired elements of utility distribution system plans.
- **C-3:** Implement competitive procurement of resources by investor-owned utilities.
- **D-2:** Use comprehensive utility planning processes to determine the sequence, needed functionality, and costs and benefits of grid modernization investments. Create accountability by requiring transparency, setting targets, timelines and metrics of progress made toward grid modernization goals.
- **H-1:** Identify and advance legislative and/or regulatory actions to foster development of North Carolina's offshore wind energy resources.

Discussions about the potential for wholesale market reform in North Carolina are not new. The North Carolina General Assembly enacted legislation in 1999 to study the use of wholesale and retail electricity markets in the state. The study recommended a more competitive system, but such a system was never implemented due to numerous factors including the California energy crisis in the late 1990's.

Likewise, enacting state wholesale reform has recent precedent. In 2007, North Carolina adopted the Renewable Energy and Energy Efficiency Portfolio Standard (REPS). The REPS, coupled with stable, long term avoided cost contracts, and a state tax credit, enabled NC to diversify its electricity supply and offset over 10% of its electricity demand with renewables and efficiency.

More recently, in 2020, the South Carolina state legislature authorized, via SC HB 4940, a study to evaluate a broad variety of electric wholesale, retail, and operational reforms and a study committee to review resulting options. NERP stakeholders have identified that any resulting reform in South Carolina could impact North Carolina as both states share utilities and electric infrastructure. Key provisions specifically mention creation of broader wholesale markets with states neighboring S.C. and the separation of existing vertically integrated electric utilities into two distinct entities: companies that generate electricity and companies that transmit and distribute electricity.

Key Points of Discussion and Content Development

Many NERP stakeholders are interested in wholesale market reforms because increased competition and transparency to generation economics may lower prices, diversify supply, and aid both system planning, and the integration of renewables. Conversely, N.C. has low prices compared to the national average, and diverse generation with respect to its integration of more solar electric generation than any state except California. Joining or creating an RTO does not ensure perfect competition, nor would it inherently lower emissions. In addition, due to typical RTO governance structures, RTOs may not protect stakeholder interests outside of participating buyers, sellers, and transmission owners. Thus, there is agreement that any proposed or potential wholesale market reform in the state must first be carefully studied as the implications of wholesale reforms affect many parties- retail, wholesale, and otherwise.

Throughout NERP, stakeholders reviewed, proposed, refined, and in some cases rejected, a number of wholesale electricity market reforms based on potential to meet net-zero greenhouse gas emissions by 2050, align regulatory incentives with cost control and policy, and maintain affordability and bill stability.

Points of Discussion: North Carolina Joins PJM Interconnection

Early in the process, stakeholders investigated the potential benefits and costs of joining PJM – the wholesale electricity market bordering North Carolina – as Dominion Energy had previously joined PJM and PJM’s proximity to NC, along with some shared infrastructure, suggested ease of process. In investigating Dominion Energy’s path to PJM, the Wholesale study group found the NCUC decision explicitly stated that such a ruling was not to serve as precedent and further, Dominion Energy did not own any generation in NC (the power it supplies the State is generated outside NC). PJM’s Minimum Offer Price Rule (MOPR), a mechanism which accounts for state policy support of renewables by increasing renewable bid prices into the market, is a concerning factor as well. Given NC’s established success as a utility scale solar state, MOPR is viewed as particularly detrimental to NC’s dispatch into the PJM market and the NC solar industry. It’s impact to state’s ability to carry out its own energy and environmental policies has resulted in certain PJM states taking legal action related to MOPR.

Ultimately, NERP recommends that joining PJM should not be evaluated at this time. The nature of the PJM market could make North Carolina state goals, such as REPS, clean energy standards, greenhouse gas reduction targets, and other state policies more difficult and costly to implement. Further, integration into PJM takes minimally 24 months and any associated integration expenses are billed directly to the transmission owner impacting customer rates. While NERP does not support NC joining PJM at this time, it is acknowledged that changes in Federal policy and a new FERC could warrant reconsideration of this item at a future date.

Points of Discussion: Form a Joint Carolinas RTO

NERP discussed the merits of investigating a North and South Carolina RTO. Duke Energy and Dominion Energy operate in each state. These utilities have critical high-voltage infrastructure in each state, and perhaps just as important, experience with each states’ process and regulatory compliance. Because of these factors, some NERP stakeholders postulated a joint Carolinas RTO could be easier to implement and less costly than joining an existing RTO. NERP stakeholders caution that the further apart the Carolinas’ power market structure become, the more complex the challenges of managing costs, environmental impact/compliance, and broader system operation become.

A Carolinas RTO concept presents a number of considerations worthy of investigation. Conventional understanding holds that geographic footprint of the RTO is a key factor of cost and benefits. NERP questioned whether a Carolinas RTO could achieve significant cost savings when compared to larger RTOs and regardless, what methodology would best represent such a comparison. Further, if the benefits did prove limited, could that difference be mitigated? NERP ultimately decided that due to the above considerations, the RTO in the proposed study could be defined by the geographic barriers of North and South Carolina or a larger area such as the southeastern United States.

Of specific relevance to this process, traditional RTOs do not feature robust, non-stakeholder processes such as NERP by default nor are RTOs regulated by any one state. While most RTO decision making does happen through a participant-driven process, most RTOs restrict voting-member participants to transmission system owners, buyers, and sellers. Similarly, the role of each state's utilities commission could be limited under an RTO as FERC is the regulatory agency with jurisdiction over interstate electricity and wholesale markets. Stakeholders agreed that any proposed reform should protect processes such as NERP, which include broader system, environmental, and social concerns, and also ensure that both states' regulatory agencies have roles in system oversight to the extent FERC jurisdiction and RTO rules allow.

Points of Discussion: EIM & SEEM

NERP identified energy imbalance markets (EIMs) as a less timely and costly alternative compared to the Carolinas or Southeastern RTO concept. An EIM is voluntary market for dispatching real-time energy across utility service territories. Each participating utility retains ownership and control of its transmission assets but opts to bid generation into a centralized dispatch authority. EIMs allow utilities to optimize intersystem imbalances without the added operational or structural requirements of an RTO.

A Carolinas, or Southeastern, EIM could bring benefits to the region via gains in broad system efficiencies, lower operational reserve requirements, generator price transparency, and a governance structure that allows input by non-utility participants such as states or independent power producers. Existing EIMs are extensions of RTOs and operated as such; PJM would likely be the Carolinas RTO operator. Yet this function would not require utility RTO membership and benefit by avoiding transmission operations, compliance, and transmission allocation costs. While not as expensive as creating an RTO, EIMs have required costly, multi-year processes in other regions of the country. Critical to some NERP stakeholder interests, while EIMs may provide better integration of variable renewable production, they do not inherently provide non-balancing authority entities, such as Independent Power Producers (IPPs), a platform for market access.

Publicly announced in mid-2020, SEEM, the Southeastern Energy Exchange Market, is a proposed 15-minute automated energy exchange market between balancing authorities of the Southeastern U.S. While full details of the market construct are not yet known, what is proposed indicates a simpler market than a traditional EIM with a contracted platform administrator that operates the system that follows market transactions and a market auditor tracking market rules. Further, SEEM will not depend on utility RTO membership and thus avoids additional significant infrastructure, compliance costs administrative, and transmission allocation costs.

NERP stakeholders agreed in principle to the lower setup costs of SEEM as compared to an EIM. However, some stakeholders viewed the marginal reforms proposed by SEEM to be unsatisfactory. SEEM, per that perspective, does not appear to expand market opportunities to non-utility participants, nor does it expose incumbent generators to competition, provide operational transparency or public interest governance, nor a framework for additional market expansion. Ultimately, each of the proposed wholesale market reforms feature potential benefits and costs to North Carolina.

NERP Recommendations

NERP recommends the General Assembly of North Carolina direct the NCUC to conduct a study on the benefits and costs of wholesale market reform and implications for the North Carolina electricity system.

A proposed study rationale, elements, authorization, and funding accompanies this report. NERP recommends the following market structures be evaluated:

1. An RTO as defined by a) geographical boundaries of North Carolina and South Carolina or b) a larger region such as the Southeast.
2. An EIM as defined by a) geographical boundaries of North Carolina and South Carolina or b) a larger region such as the Southeast.
3. The energy exchange market proposed by a consortium of over 15 entities in the Southeast U.S. in 2020 and referred to as the Southeastern Energy Market (SEEM).

Additionally, the study should be required to offer recommendations to the General Assembly as to whether any of these market structures should be pursued further. This includes:

1. Recommending whether legislation is to be brought forward to allow reform of the wholesale electricity marketplace,
2. Recommending a model for wholesale competition that should be implemented if applicable, and
3. Recommending a stepwise approach to incorporating municipal and cooperative electricity generators and providers into wholesale market reforms, as needed.

Wholesale Market Outputs

NERP produced the following documents for dissemination, to inform subsequent policy discussions with various audiences:

1. **Legislative language authorizing the NCUC to conduct a wholesale market reform study:** A number of wholesale reforms are relevant to NERP stakeholder organizations, recent academic research, and adjacent state policies. The study authorized by this language considers the costs and benefits of wholesale electricity market reform at the state and regional level.
2. **Wholesale market reform study scope and criteria:** This document reviews the proposed market reforms in greater detail and offers guidance to study process, structure, and funding.
3. **A meta-analysis of proposed market reforms:** As each market reform features a number of similarities and points of comparison, the group provides a high-level review of key market criteria.
4. **Electricity market structure factsheets:** Each construct outlined in the meta-analysis are featured in 2- to 3-page factsheets which provide greater detail on the respective markets.

Securitization for Generation Asset Retirement

Asset Retirement in Brief

- NERP participants' interest in asset retirement was primarily focused on securitization, which is the focus of the content in this report.
- Securitization is a financing mechanism involving the issuance of bonds to raise funds to refinance remaining undepreciated value of existing coal plants.
- If properly designed, securitization used with a coal retirement plan, can lower customer bills, reduce air and water pollution, support coal plant communities in the transition, and allow utilities to reinvest in clean energy to replace lost revenue from legacy coal plant investments.
- NERP's primary recommendation is to expand the use of securitization in North Carolina beyond storm recovery costs to include generation asset retirements.

Background

The declining costs of renewable energy and higher cost of operating coal plants relative to other resources, in addition to the state priority of reducing greenhouse gas emissions, particularly carbon dioxide, has increased interest in retiring coal plants in a low-cost way. However, these coal units remain in the portfolio due to the utilities' need to recover their investment and maintain reliability. As North Carolina has a significant amount of coal capacity that could be financed to provide ratepayer benefits, the large amount of generation needing to be replaced must be planned carefully to ensure costs are minimized, utilities are fairly compensated, system reliability is maintained, cleaner technology solutions are deployed, and pollution levels are reduced.

In order to retire coal plants, the remaining undepreciated value must be addressed. Securitization is a refinancing mechanism involving the issuance of bonds to raise funds to refinance the remaining undepreciated value of existing coal plants. The bonds are paid back over time through a dedicated surcharge on customer bills. Because the surcharge is irrevocable and payment to the lender is basically "guaranteed" through the legislation, the bonds can typically be issued at an interest rate even lower than the usual utility bond interest rate. In addition, most major credit rating agencies do not include securitization debt, up to certain limits, in assessing the utilities debt to equity ratio for credit rating purposes. Therefore, the utility can generally refinance the outstanding undepreciated value with 100% securitization financing instead of using its standard combination of debt and equity financing. Both of these factors combined lead to cost savings for customers.

By itself, securitization would translate to a loss in earnings for the regulated utility by reducing the total amount of capital in which the utility is invested. However, securitization can also be paired with utility reinvestment in replacement capacity to maintain reliability. Because this replacement generation would be financed using a combination of debt and equity, this option has the potential to recoup and even grow utility earnings.

Duke Energy currently operates six coal plants totaling about 10,000 MW of capacity. The low cost of natural gas and renewables, along with additional environmental compliance costs, has shifted electricity generation toward cheaper sources of energy in recent years, and the trend is expected to continue as the economic gap widens. Coal plants in the state, originally built to run 75-80% of the time, are now running, on average, only 35% of the time.

Early economic retirement of North Carolina's coal plants and replacement with zero emitting resources is estimated to achieve the 70% reduction in greenhouse gas emissions goal specified in the Clean Energy Plan by itself, provided the amount of imported electricity and its carbon intensity remain at or below historic levels.

Key Points of Discussion and Content Development

NERP participants discussed several topics related to securitization that fed into the development of the draft legislation. These included the savings for customers, reinvestment by the utility, transition assistance for affected communities, and replacement of coal assets.

Many believed that, at a minimum, securitization should be a tool available in North Carolina, as an option for utilities to retire fossil generating assets. Some participants believed that securitization should at least be neutral on customer cost impact, but would ideally save money for customers. For others, savings to customers should be a mandatory precondition for securitizing undepreciated assets.

There was a strong consensus among participants that the utility needs a clear path to reinvest in something — whether it be capital assets or a portfolio — after the securitization and closure of fossil assets. All supported making utility reinvestment a required element of securitization in order to make the utility whole and reduce the disincentive for utilities to use securitization for undepreciated assets. Related, there were early conversations about limiting utility ownership to a lesser, undetermined percentage (i.e., 50% of new procurements could be utility-owned and 50% of new procurements would be third-party owned). Stakeholders could not agree on an appropriate path forward, and ultimately concluded that the legislation should not prescribe a percentage of allowable utility ownership. However, there was an emphasis on recognizing that competition would be critical to ensuring least cost; thus, the asset should be owned by whoever can provide it or a portfolio at the lowest cost to customers.

As for replacement resources, there was more debate among participants of NERP. One subset of stakeholders believe that coal should be replaced through a competitive, all-source RFP process, another subset of stakeholders believe that replacement resources should be required to be clean energy resources that reduce GHG emissions and support the North Carolina Clean Energy Plan, and another subset of stakeholders believe that the IRP process should continue to dictate replacement resource planning. Another issue was raised that the state does not need a 1:1 replacement for coal capacity because those plants are currently running at low-capacity factors.

Near the end of the process, a majority of the study group aligned around the following points:

- The procurement system of the future should be one that balances carbon reduction with affordability and reliability in order to achieve the goals in the Clean Energy Plan and the prioritized outcomes of NERP.
- Natural gas systems might appear least-cost today in some cases, but may, as a result of declining costs of alternative resources, changes to public policy, or other factors, become stranded assets within 10 years.
- In order to avoid stranded assets, risk should be weighted in analysis of resource selection. There is risk to procuring new gas assets. There is a need to ensure that assets are not just cheaper today, but will be fully functional and cost effective for the entirety of their lifetime.
- Utilities should consider portfolios instead of single, specific assets.

Transition assistance to help communities affected by plant shutdowns was of importance to most participants in NERP. It was of interest to have communities be in control of how funds are used and make decisions appropriately, with some specific interest in supporting schools and local governments that will be affected by reduced tax bases. There was also interest in developing solar in locations that previously had coal to bring some level of tax base back to the community. Two areas of discussion arose around which participants did not reach a conclusion. First, there was discussion about whether transition assistance should come from securitization savings or from the state's general fund, with some believing that "it's a state policy, not a utility policy, so all state taxpayers should pay."

The study group determined that the legislation would outline that the NCUC could approve up to 15% of savings, or less, to be used for transition assistance. The study group decided it would be best not to prescribe how the funds should be allocated, as to preserve that responsibility for those on the ground who have the best sense for what is needed in the community. Therefore, the group aligned around ensuring that local governments are involved in the process.

NERP Recommendation

The asset retirement study group recommends that the North Carolina General Assembly expand securitization to be an available tool for electric utilities to retire undepreciated assets, in addition to the current use around storm recovery costs.

- The recommendation is modeled after best practices from the Colorado statute.
- Legislation would be enabling a tool, not mandating that a utility use it.
- Up to 15% of savings could be used to create a transition fund; the Commission would make this final determination.
- Any replacement capacity needed should be procured through a competitive process and approved by the Commission.
- The recommendation does not include restrictions on utility ownership of replacement resources.

Asset Retirement Outputs

NERP produced the following documents for dissemination, to inform subsequent policy discussions with various audiences:

1. **Legislative language expanding the use of securitization for retirement of uneconomic power plants:** An act to permit financing for certain undepreciated utility plant costs and for transition assistance for affected workers and communities.
2. **Securitization statute comparison:** A comparison of securitization statutes which include recovery of undepreciated plant balances and transition assistance for workers and communities affected by early plant retirements as allowable uses for securitized bonds.
3. **A fact sheet, *Expanding Securitization: Accelerating the Clean Energy Transition & Building the North Carolina Economy*:** Describes what securitization is, what the opportunity is, and highlights national precedent for any audience needing to learn more about securitization, such as the North Carolina General Assembly.
4. **Early asset retirement analysis accompanied by a two-page summary:** Analysis that evaluates accelerated depreciation, regulatory asset treatment, securitization (with and without reinvestment) and compares them to business-as-usual. It examines the tradeoffs between the different scenarios for utility earnings and customer rates on a first-year and levelized basis and can also be used to determine these impacts on an asset-by-asset or a portfolio level. The analysis is described in a two-pager that compares securitization to regulatory asset treatment and showcases the relative impacts on ratepayer savings, utility earnings, and community assistance.

Competitive Procurement

Competitive Procurement in Brief

- Competitive procurement and all-source solicitations are an area of significant interest among many of the NERP stakeholders.
- The study group evaluated issues related to the use of competitive processes for purposes of meeting future resource capacity and generation needs.
- State policy regarding utility competitive procurement should take into account unique characteristics of each utility service territory
- Subject to details provided in the group’s policy paper, NERP identified competitive solicitations as an important tool that should be utilized to meet energy and capacity needs identified in IRPs and as otherwise deemed appropriate by the NCUC.

Background

North Carolina investor-owned utilities are required to submit IRPs to the NCUC to forecast, and address, grid needs at least cost. Federal and state policies, as well as utilities themselves, are increasingly recognizing the opportunity for competition to drive these costs down as more technologies qualify as grid resources. In 2017, NC HB 589 created the competitive procurement of renewable energy program which provided a competitive bidding process for renewable energy projects in Duke Energy’s North Carolina service territory. North Carolina’s Executive Order 80 and DEQ further identified many non-generating resources, such as efficiency and battery storage as grid scale technologies — technology not traditionally in line with the utility capital expenditure and return model.

Due to its relatively small customer base and small geographic service territory in North Carolina compared to Duke Energy, and because Dominion Energy North Carolina serves its customers primarily with energy generated in Virginia and the larger PJM region, Dominion Energy North Carolina was exempt from the competitive procurement provisions of HB 589. Additionally, the Virginia Clean Economy Act (VCEA) enacted by the Virginia legislature in 2020 established comprehensive competitive procurement requirements for Dominion Energy in connection with the renewable portfolio standard (RPS) also enacted as part of the legislation. The VCEA RPS requires Dominion Energy to achieve an RPS of 100% renewable energy by 2045 in its Virginia service territory.

Competitive procurements do not restrict utility self-build or utility ownership by definition. Instead, utility-built resources or utility owned generation, become one of many potential options. Competition by this design has resulted in cost savings generally and should continue to provide lower cost investments and lower customer bills in the future. Further, utilities could potentially benefit via more innovative business structures, expanded generation options, a cleaner grid, and optimization of existing grid investments.

Key Points of Discussion and Content Development

Points of Discussion and Agreement: Defining Competitive Procurement

Given the impact of existing procurement in North Carolina, and the vast number of stakeholders interested in potential procurement reform, the competitive procurement study group began by proposing definitions to the broader NERP group. The majority of participants agree with the following definition:

Competitive procurement is an IRP-driven, all-source procurement to meet all identified needs for new resources in a manner that is consistent with policy directives and at the best available overall price.

While this definition was ultimately selected, stakeholders offered a number of suggestions as to the scope of competitive procurement. Some participants wondered for example if demand side management, energy efficiency, and distributed energy resources qualified as potential resources. Regarding the scale of competition, stakeholders asked whether new resources could compete against existing assets if their prices were advantageous. Finally, stakeholders identified cost as an area to further define as cost could include impact of stranded asset costs to ratepayers and whether carbon or other environmental considerations could be added.

Points of Discussion and Agreement: Participation

The VCEA enacted by the Virginia legislature in 2020 established comprehensive competitive procurement requirements for Dominion Energy in connection with the renewable portfolio standard (RPS) also enacted as part of the legislation. The VCEA RPS requires Dominion Energy to achieve an RPS of 100% renewable energy by 2045 in its Virginia service territory. Dominion Energy holds that any such expanded competitive procurement program in North Carolina should not apply to it as Dominion Energy owns no generation in North Carolina and further, VCEA established a number of relevant and similar processes for the utility to abide by.

While the study group did not discuss this item in detail, the group agreed that any State policy regarding competitive procurement should take into account the unique characteristics of each utility service territory and other relevant features such as, but not limited to, location of generation assets, geographic footprint, and generation portfolio.

Points of Discussion and Agreement: Utility Ownership

One of the primary points of discussion within the Competitive Procurement study group was utility participation or utility ownership of generation assets procured. Historically, utilities' ability to rate-base (i.e., allow recovery of capital costs plus a return on equity) has provided low-cost, reliable generation for NC. However, some stakeholders asserted that this model was best utilized when generation was viewed as part of the natural monopoly.

There are potential benefits to ratepayers and utilities as utility ownership ensures the financial health and growth of the utility and offers more direct operational control of the generation, diversifies life-cycle risk of the assets (due to declining revenue requirement), along with other benefits. On the other hand, rate-basing can create risks to both entities in the form of potentially higher costs, construction delays, and cost overruns.

Stakeholders have considered a myriad of issues, including whether utility ownership models are best for specific types of generation — large, thermal generation for example which are high capital cost investment that traditionally provide baseload, year-round grid support. Additionally, stakeholders discussed if there is an ideal amount of utility purchases of assets from the broader developer community.

Stakeholders have yet to come to a determination and formal recommendation on these questions. The key question that will inform this work is whether there should be a pre-determined allocation between utility, rate-based ownership and third-party ownership

NERP Recommendations

NERP recommends that the North Carolina General Assembly expand existing procurement practices to utilize competitive procurement as a tool for State electric utilities to meet energy and capacity needs defined in their respective IRPs and where otherwise deemed appropriate by the NCUC.

State policy regarding utility competitive procurement should take into account unique characteristics of each utility service territory, e.g. number of customers, geographic size, amount of utility-owned generation in the service territory, and proportion of existing generation from renewable sources located in the service territory and serving utility customers.

Competitive Procurement Outputs

NERP produced the following documents for dissemination, to inform subsequent policy discussions with various audiences:

1. **Competitive procurement policy recommendation for the North Carolina General Assembly:** An overall policy recommendation which, subject to the more detailed recommendations outlined in the document, states that competitive solicitations are an important tool that should be utilized to meet energy and capacity needs identified in an IRP and as otherwise deemed appropriate by the North Carolina Utilities Commission.
2. **A case study into the Public Service Company of Colorado's recent procurement cycle:** The subcommittee evaluated a number of states but focused primarily on a recent procurement cycle in Colorado for the Public Service Company of Colorado (Xcel Energy), which was ultimately determined to be a successful generation procurement framework.
3. **A case study into key generation procurements enacted by the Virginia Clean Economy Act:** The summary outlines the sweeping package of energy reforms established in March, 2020 that set Virginia on a path toward a 100% carbon-free electricity grid by 2050.

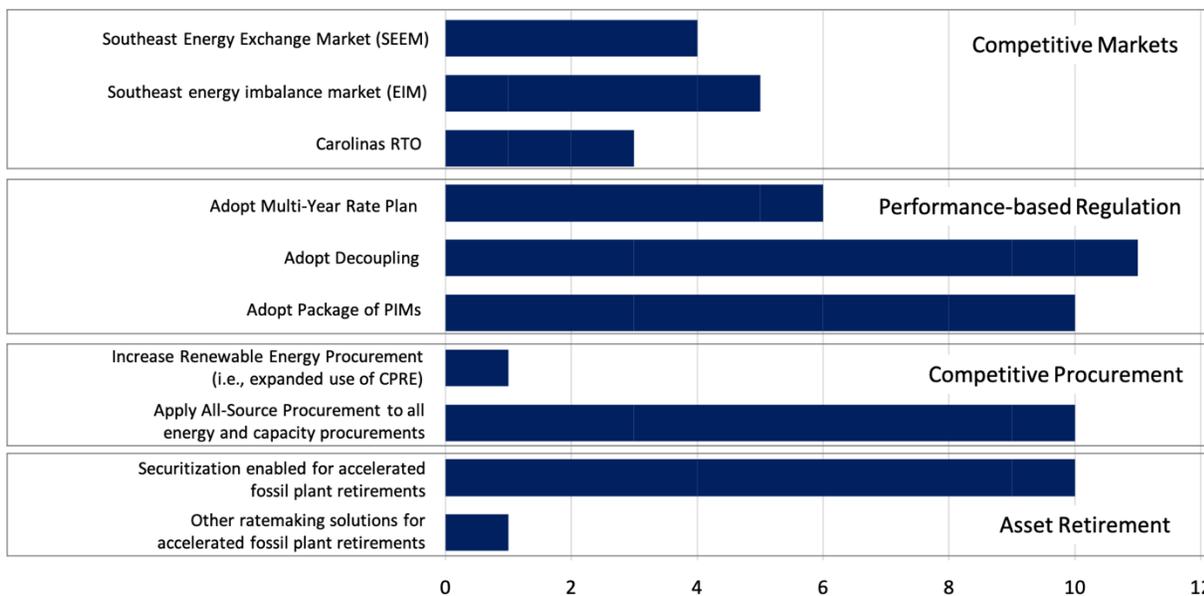
Conclusion

Achieving full consensus on reforms was not an objective of NERP, but NERP participants remain dedicated to continuing the conversation and arriving at a reform package that best meets the needs of North Carolina. Despite strong support for several reforms discussed in this report, no one reform enjoys the full support of every NERP participant, and there are nuances to participants’ views. To achieve priority outcomes, this work will need to move forward through actions of the North Carolina General Assembly, NC Utilities Commission, by the state’s utilities, and through continued input and support from stakeholders.

To aid in those continued conversations, this section explores where interest and alignment emerged through NERP dialogue, as well as how reform options may be combined in upcoming legislative action.

Stakeholder Support for Reforms

Throughout NERP in 2020, participants were asked to express their level of support for various reforms and to prioritize the work that NERP should pursue according to what reforms were (i) most important to those represented and (ii) most likely to lead to priority outcomes (carbon reduction, affordability, and alignment of regulatory incentives with 21st century public policy goals). The facilitators conducted polls and surveys of participants to assist in guiding the work of the group and inform the next steps in North Carolina. Summary results of one of those surveys is provided below, in which participants responded to the question, “Which reforms are priorities for you or your organization to immediately advance at the conclusion of this 2020 NERP process?” Each respondent could select up to three reforms; bars show the number of people who selected each reform.



The results of this informal survey, as well as other similar exercises conducted throughout NERP, demonstrate that all potential reforms discussed during 2020 have some level of support among NERP participants. Several reforms, particularly revenue decoupling, performance incentive mechanisms, all-source competitive procurement, and enabling securitization to accelerate fossil plant retirements, are high priorities for many participants at the conclusion of NERP.

A Possible Package of Reforms

Multiple possible paths forward emerged at the conclusion of the 2020 NERP process. The following describes some of the options for putting forward a package of reforms. Options 1 through 3 describe paths forward for NERP-specific topics and recommendations, whereas Option 4 recognizes the desire among many participants to ensure that a legislative package includes other provisions related to climate and clean energy.

Option 1	Option 2	Option 3	Option 4
One legislative package combines: (1) PBR authorization, (2) wholesale market study direction, (3) direction to NCUC to use competitive procurement, and (4) expansion of securitization for retirement of coal assets	One legislative package combines PBR, new securitization authorization, and direction to NCUC to use competitive procurement Separate legislation creates wholesale market study	One legislative package combines PBR and new securitization authorization Competitive procurement is pursued at the NCUC Standalone legislation creates wholesale market study	Some combination of Options 1-3, with the addition of other policy provisions such as a Clean Energy Standard, carbon reduction policy, economic growth policy, or other enabling actions

NERP briefly discussed these options in the final workshop of 2020. A majority of participants expressed support for some version of Option 4 as the best path forward. That is, there was agreement to combine policy concepts into one piece of legislation, and that such legislation should also include other enabling policies not discussed in NERP.

Agreement was not reached on what that additional enabling policy ought to be. Multiple participants believe a clean energy standard (CES) is a necessary complementary policy to the NERP reforms. Others believe that some policy that enables or requires carbon reductions, as informed by the modeling being conducted in the “A1” process, should be included in the package.

Some participants prefer including additional enabling policies in this package, including revisions to House Bill 589 (2017), inclusion of a “carbon adder” in utility planning, and IRP reform to make competitive procurement more viable. These ideas were not fully explored in the final workshop.

A handful of participants argued that Option 4 was the best path, but that legislation to create a wholesale market study should be considered separately from other reforms.

Some participants were reluctant to state their opinions about these options without having more information, particularly what the recommendations will be from the CEP A1 process on carbon reduction policy designs. Although NERP in 2020 did not negotiate a “final agreement” on a package of reforms, participants acknowledged the need to continue the conversation to further refine the details to be included.

Next Steps

A combination of the reforms discussed in this paper, combined with other energy reforms including those described in the Clean Energy Plan and the parallel “A1 process”, can support the state’s transition to a cleaner energy system. Following the NERP 2020 process, stakeholders will continue to refine details and find areas of alignment in the proposals to advance collectively. Conversations may be supported by RMI and RAP; however, participants will also consult independently with NC policymakers, decision-makers, and other constituents to brief and educate them on potential reforms. The study group outputs produced during NERP (and attached to this report) can aid in briefings and further refinement of policies for advancement through legislative and regulatory processes. Draft legislation produced during NERP will be subject to continued refinement and development through the legislative session; drafts attached to this report represent their status at the conclusion of 2020 NERP discussions.

Appendix

Full List of NERP Participating Organizations

Organization Type
North Carolina Department of Environmental Quality (DEQ)
North Carolina Utilities Commission (NCUC)
NCUC Public Staff
North Carolina Legislature
North Carolina Governor's Office
North Carolina Attorney General's Office
Duke Energy
Dominion North Carolina Power
North Carolina Electric Cooperatives
ElectriCities of North Carolina
City of Charlotte
City of Asheville
Durham County
North Carolina Chamber of Commerce
Smithfield Foods
North Carolina Retail Merchants Association
Appalachian Voices
North Carolina Manufacturers Association
Carolina Utility Customer Association
North Carolina Clean Energy Business Alliance
North Carolina Sustainable Energy Association
DEQ Environmental Justice & Equity Board
North Carolina Justice Center
Environmental Defense Fund
Southern Environmental Law Center
North Carolina Conservation Network
NC WARN
Sierra Club
Duke University Nicholas Institute
North Carolina Clean Energy Technology Center

Contact Information

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PBR Study Group Co-Chairs		
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Laura Bateman	Duke Energy	laura.bateman@duke-energy.com
Wholesale Market Study Group Chair		
Chris Carmody	NCCEBA	director@nceba.com
Asset Retirement Study Group Co-Chairs		
David Rogers	Sierra Club	david.rogers@sierraclub.org
Tobin Freid	Durham County	tfreid@dconc.gov
Competitive Procurement Study Group Co-Chairs		
Steve Levitas	NCCEBA Board	slevitas@pgrenewables.com
Jack Jirak	Duke Energy	jack.jirak@duke-energy.com

Study Group Outputs

Outputs attached to this report represent their status at the conclusion of 2020 NERP discussions, as of December 18, 2020. If substantive revisions were received too late to allow study group discussion or full NERP feedback, it was not incorporated. Draft legislation produced during NERP will be subject to continued refinement and development through the legislative session.