



# Regulatory Process Design for Decarbonization, Equity, and Innovation

PUC Modernization Issue Brief Series:  
Purpose, People, and Process



# Authors & Acknowledgments

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## **About RMI**

RMI is an independent nonprofit founded in 1982 that transforms global energy systems through market-driven solutions to align with a 1.5°C future and secure a clean, prosperous, zero-carbon future for all. We work in the world's most critical geographies and engage businesses, policymakers, communities, and NGOs to identify and scale energy system interventions that will cut greenhouse gas emissions at least 50 percent by 2030. RMI has offices in Basalt and Boulder, Colorado; New York City; Oakland, California; Washington, D.C.; and Beijing.

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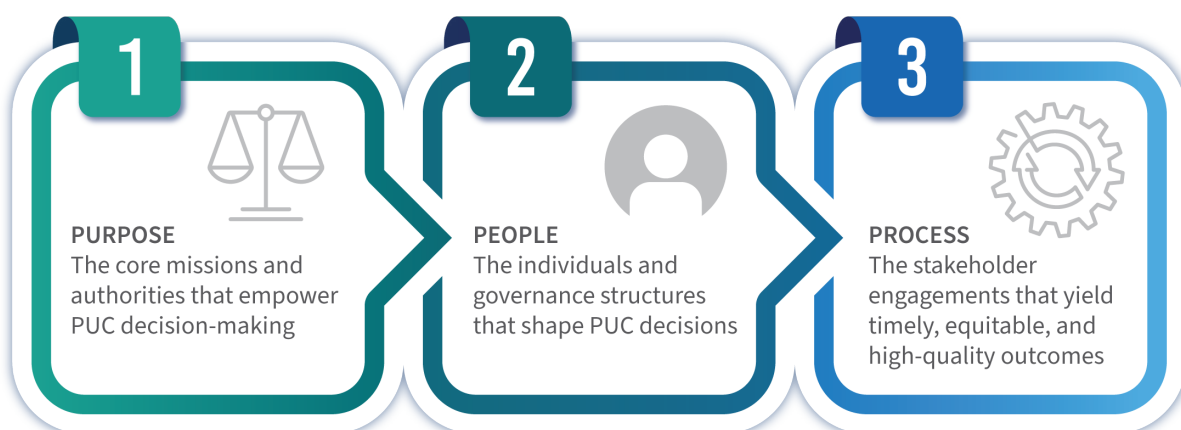
# Preface

With decision-making authority over utilities serving roughly 70% of US electricity customers, state public utilities commissions (PUCs) are uniquely positioned to orchestrate the equitable transition to a zero-carbon grid.<sup>1,1</sup> However, PUC modernization in the United States has not kept pace with the need to transition to a decarbonized, equitable, and flexible energy system.

Policymakers and the public are increasingly asking PUCs to consider a broader range of objectives than safety, affordability, and reliability in their decision-making, including greenhouse gas (GHG) emissions reductions, resilience, and equity. Yet organizational challenges pose barriers to innovation and informed regulatory decision-making on these emerging topics. Challenges include outdated mandates; staff constraints; gaps in technical expertise; information asymmetry between utilities and stakeholders; procedure-heavy, quasi-judicial processes that restrict PUCs to considering only the evidence entered on the record during proceedings; and a culture of risk aversion. Barriers such as these risk delaying or impeding the decisions needed to achieve state objectives.

In response to these factors, states such as Colorado, Oregon, New York, and New Mexico have launched efforts to ensure that regulatory decision-making remains transparent, independent, and/or consistent with state policy.<sup>2</sup> Although individual state budgets, governance structures, and political dynamics are unique, these efforts reflect an emerging window of opportunity to transform PUCs into the regulatory institutions we need.

To assist policymakers, advocates, and regulators in their efforts to decarbonize the grid, this series of RMI issue briefs focuses on PUC modernization in the context of GHG emissions reductions. Each brief in the series draws from independent RMI analysis and more than a dozen interviews with industry experts.



<sup>i</sup> States use different terms to refer to state regulatory commissions: Public Service Commission (PSC), Department of Public Utilities (DPU), and State Corporation Commission, to name just a few. For consistency, where not referring to a specific state, the authors use the generic term “PUC” throughout this series.

This third brief explores several regulatory process design changes that will enable PUCs to rapidly deliver a carbon-free electric grid. We focus on process changes that are rooted in increasing energy equity, accelerating grid and customer decarbonization, and enhancing stakeholder engagement.<sup>ii</sup> RMI's direct experience supporting commission processes and author interviews with industry experts suggest that regulatory processes can be more effective when:

- 1.** Commissions define and share goals for proceedings early in the process.
- 2.** Nonutility stakeholders are meaningfully engaged and have the ability to collaborate on solutions.
- 3.** Stakeholders have access to transparent data needed to understand utility performance.
- 4.** Commissions initiate new processes to expedite decarbonization.

For each identified recommendation, we provide a set of suggested actions that key actors can take to align their processes with the need to equitably decarbonize the energy system (see Exhibit 1, next page).

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**ii** This insight brief expands upon RMI's 2019 report *Process for Purpose*, which reviews regulatory reform efforts undertaken by 10 states, describes the processes by which reform can proceed, and identifies the most significant factors that influence reform efforts' effectiveness. The report examines four distinct stages of successful reform processes: initiating the reform process, communicating the vision for reform, conducting the reform process, and delivering reform outcomes. This brief builds on the work done in *Process for Purpose* by articulating how and when regulatory reform processes can be used to expedite equitable decarbonization outcomes.

## Exhibit 1 Priority Actions to Optimize PUC Processes for Equitable Decarbonization

Priority Actions	Actor(s)
<b>Recommendation 1: Set Clear Objectives to Shape Proceeding Scope and Work Plan</b>	
Set proceeding objectives consistent with the commission’s broader regulatory vision, informed by statutory and executive directives.	Commissioners, Advisory Staff
Communicate clear expectations for how stakeholders are expected to participate and how they can add value to the proceeding.	Commissioners
<b>Recommendation 2: Expand Stakeholders’ Roles in Solution Development</b>	
Establish or build upon existing intervenor compensation programs to support diverse participation.	Commissioners, Legislatures
Create additional language, outreach, and attendance options for commission processes.	Commission Staff
Use stakeholder-centric working groups to invite diverse views on issues for which stakeholder attention supports more effective oversight or creative solutions, such as the design of performance incentive mechanisms or community equity and health.	Commissioners
Encourage increased engagement by (a) delegating issues to working groups or other collaborative stakeholder groups, and/or (b) providing additional opportunities for stakeholder education on relevant, foundational topics (e.g., energy equity, the ratemaking process).	Commissioners, Commission Staff
<b>Recommendation 3: Unlock Data and Information</b>	
Remove barriers to accessing utility modeling assumptions and data by (a) reevaluating data transparency to reduce information asymmetry and (b) allowing stakeholders the opportunity to verify utility data and modeling results.	Commissioners
Require that licenses to utility’s modeling software be shared with stakeholders so they can verify and substantiate utility models.	Legislatures, Commissioners
Leverage information requests during proceedings to acquire additional clarification on utility inputs, assumptions, program results, decision-making criteria, and operations decisions.	Commissioners, Commission Staff
Host stakeholder forums or working groups during planning proceedings to (a) socialize and solicit feedback on utility inputs, assumptions, forecasts, and scenarios, and (b) support less-technical conversations with community members.	Commissioners
Direct utilities to use data for forecasting and modeling that is accessible and up to date.	Commissioners
<b>Recommendation 4: Initiate New, Inclusive Processes to Speed Equitable Decarbonization</b>	
Identify whether (a) an overhaul of existing decision-making processes or (b) development of new processes is needed — particularly in cases where existing processes are insufficient to advance equitable decarbonization outcomes and state policy.	Commissioners, Commission Staff
Use updated benefit-cost analysis frameworks to value distributed energy resources (DERs) against traditional resources and incorporate a broader set of criteria into decision-making.	Commissioners, Commission Staff
Consider ways to spur rapid innovation and test business ideas and products under defined regulatory parameters (e.g., via a regulatory sandbox).	Commissioners, Commission Staff

# Introduction: The Motivation for Process Reform

In response to the worsening impacts of climate change, the call to decarbonize the electric grid is intensifying — both to mitigate future emissions and to bolster the resilience and flexibility of an increasingly vulnerable grid.<sup>3</sup> Ten states plus Washington, D.C., require that their PUC incorporate decarbonization into decision-making.<sup>4,iii</sup> In addition, at least 10 states have mandated that commissions consider equity in some or all of their decision-making processes.<sup>5,iv</sup> These emerging mandates, coupled with PUCs' traditional mandate to ensure the safe, reliable, and affordable provision of energy services to customers, have resulted in an increased workload, a new set of responsibilities, and competing priorities for many commissions.

Regulatory processes today are largely unequipped for the pace of decarbonization specified in statutes or executive orders. Rate cases, planning proceedings, rulemakings, and investigations often move slowly, putting them in tension with the massive gap most states must close to meet their decarbonization targets over the next decade.<sup>6</sup> Although some proceedings require more time to be comprehensive, thorough, and inclusive, process improvements can help ensure that regulatory proceedings accelerate equitable decarbonization of the electric grid, as well as customer end use, at the speed and intensity needed to meet state goals. Electric utilities must decrease carbon emissions by 50% by 2030 to limit warming to 1.5°C, but most commissions have only three or four chances to review utility integrated resource plans (IRPs) before then.<sup>7</sup> There are only a handful of opportunities to change utility incentive structures to align them with equitable decarbonization.

In addition, commissions need insight into the needs of historically marginalized, disproportionately impacted, and vulnerable communities to ensure that decarbonization is equitable and does not exacerbate existing inequities within the energy system. Traditional approaches to regulatory processes — including quasi-judicial hearings and contested decision-making — may miss opportunities to leverage specific expertise from communities and stakeholders, and can create insurmountable barriers to entry for stakeholders with fewer resources. Community and local input is becoming increasingly important amid a groundswell of local action aimed at advancing decarbonization targets and a growing desire among customers to decarbonize and electrify end-use technologies.

Changes to regulatory proceedings can help commissions ensure that regulatory decisions remain comprehensive while advancing at the pace required to meet state decarbonization and equity mandates. In particular, by setting clear goals and objectives for each proceeding, expanding stakeholders' roles in solution development, increasing access to utility data and information, and instituting new processes to expedite decarbonization, commissions have the opportunity to orchestrate the transition to clean energy while ensuring inclusive, accessible, and authentic engagement and representation in proceedings.

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**iii** Hawaii, Colorado, Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Oregon, Washington, and Washington, D.C.  
**iv** California, Colorado, Illinois, Maine, Massachusetts, Michigan, Nevada, New York, Oregon, and Washington. Some states have required that commissions mitigate negative impacts of energy decisions for historically marginalized communities; design low-income-specific tariffs and programs; prioritize beneficial outcomes for communities that lack energy justice; or institute efforts to reduce energy burden.



# Recommendation 1: Set Clear Objectives to Shape Proceeding Scope and Work Plan

Defining goals and objectives at the outset of each proceeding can provide multiple benefits for the parties involved. First, setting clear goals and objectives can help ensure that the resulting decision is consistent with the commission’s broader strategy or vision.<sup>v</sup> Second, using goals and objectives that reflect state energy goals allows the commission to base its decision on state law or executive order without legal recourse from parties with different expectations about the outcome. Third, clear goals and objectives can help to keep the proceeding on schedule by making it easier to differentiate between topics that are in and out of scope. To illustrate how objectives may differ across proceeding types, Exhibit 2 below offers excerpts of real-world objectives from PUC proceedings addressed throughout this paper.

## Exhibit 2 Objectives from Recent PUC Proceedings Focused on Decarbonization

Proceeding (State/Docket)	Objectives (Excerpted)
<b>MI PowerGrid Initiative</b> (Michigan, U-20645)	To “engage utility customers and other stakeholders to help integrate new clean energy technologies and optimize grid investments for reliable, affordable electricity service.” <sup>8</sup>
<b>Investigation into Distribution System Planning</b> (Oregon, UM 2005)	To “develop a transparent, robust, holistic regulatory planning process for electric utility distribution system operations and investments.”
<b>Investigation into Distribution Planning – Regulatory Sandbox Framework</b> (Connecticut, 12-05-15)	“To identify a prospective structure that can support the ongoing development of innovative technology applications and programs that have the potential to provide net positive benefits to all electric customers, in accordance with the Framework for an Equitable Modern Grid outlined in the Interim Decision dated October 2, 2019.” <sup>9</sup>
<b>Unified Benefit-Cost Analysis Framework</b> (Maryland, 9674)	To “explore the process for developing a proposed unified BCA framework for DERs in Maryland.”
<b>Rulemaking Regarding Integrated Resource Plans and Procurement Procedures</b> (New Mexico, 21-00128-UT)	“To repeal and replace the Commission IRP Rule 17.7.3 NMAC.”

<sup>v</sup> Commissions can issue guidance in the form of policy statements or straw proposals, which can serve to focus stakeholders and lead to a more constructive and efficient process.

By using proceeding goals and objectives as guideposts to steer utilities' performance toward equitable decarbonization, commissions can ensure that proceedings are advancing state decarbonization efforts. Commissions have the opportunity to set goals and objectives across multiple types of proceedings, such as contested cases, planning, siting, rulemakings, rate cases, and investigations. As outlined in the text box below, different proceeding types serve different regulatory purposes and can advance equitable decarbonization outcomes in different ways.

## **PUC Basics: Regulatory Proceedings and Opportunities for Stakeholder Engagement**

Commissions administer several types of quasi-legislative and quasi-judicial proceedings. Generally speaking, PUC cases fall into three categories: contested cases, rulemakings, and investigations. The stakeholders who typically participate in these proceedings include commission staff; utilities; state consumer advocates; energy and environmental interest groups; trade organizations; labor organizations; tribal governments; local, state, and federal agencies; community-based organizations; and the general public. The proceeding processes and opportunities for stakeholder engagement differ according to case type.

**Contested cases** typically deal with utility-specific issues or complaints. They are adjudicatory proceedings in which commissions make decisions by building a record — or a body of evidence — through expert and public testimony, and adjudicate results based solely on the evidence submitted through testimony on the record.<sup>10</sup> Rate cases, infrastructure siting, IRP dockets, quality-of-service determinations, consumer complaints, and enforcement proceedings are all types of contested cases. Contested cases typically have due process requirements and are usually subject to a state administrative procedures law. Parties besides the utility or filer of the case may become full participants by applying to the PUC for intervenor status.<sup>vi</sup> Intervenors have the same rights as the utility being represented in the case to offer testimony and cross-examine witnesses. Intervenors also usually have standing to appeal a contested ruling (as opposed to participants or commenters). Parties commonly use settlement agreements — an agreed-upon position on the issues by some or all parties — to resolve contested issues without needing to go through a hearing process that can take from 6 to 12 months.<sup>11</sup> Generally speaking, all-party settlements have a greater chance of gaining commission approval than settlements between just some of the parties. This saves all parties the time and expenses incurred through the expert-witness hearings.

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**vi** Full participation in general rate cases is usually limited to certain parties. Some states may include less formal consumer sessions, in which utility customers can express their thoughts and concerns with commissioners and staff about the rate case.

**Rulemakings** establish and adopt rules and procedures that apply to all relevant utilities within a PUC’s jurisdiction. Common examples of rules that get adopted in rulemaking proceedings include administrative rules; rules governing terminations, payment plans, or resolution of customer disputes; rules governing utility accounting or operational practices; and statutorily directed implementation of certain policies/programs (e.g., energy efficiency). Generally, commissions notify the public about upcoming rulemakings by issuing a decision giving notice of the proposed rulemaking, and may show proposed changes to the current rule.<sup>vii</sup> Rulemaking proceedings often include a solicitation of public comments, public hearings, and less formal stakeholder and information-gathering workshops. Anyone can comment in rulemaking proceedings without being a formal intervenor.<sup>12</sup> Unlike in contested cases, some commissions allow ex parte communications in rulemakings.<sup>13</sup>

**Investigations** explore specific topics or trends, typically producing recommendations rather than decisions. Sometimes, the recommendations result in a contested case or rulemaking proceeding. Commissions also use investigatory proceedings to help “build the record” ahead of a decisional proceeding. Similar to rulemakings, investigations often include a solicitation of public comments, public hearings, and less formal stakeholder and information-gathering workshops. Typically, anyone can comment in an investigation without being a formal intervenor.

Regulatory dockets are the venues in which commissions put their broader regulatory vision into action (see PUC Modernization Insight Brief *Purpose: Aligning PUC Mandates with a Clean Energy Future*).<sup>14</sup> Clear proceeding objectives that tie back to a broader vision can set expectations for stakeholder participation and the desired results of the process. Although not exhaustive, the following steps are often useful for commissions when establishing strong proceeding objectives:

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**vii** Most commissions provide any interested party the opportunity to receive notice of proposed rulemakings through their commission website.

## Regulatory Proceeding Prelaunch Checklist

- Decide which type of proceeding to open (for proactive commission efforts).
- Summarize any relevant policy objectives, requirements, or other decision criteria established by statute.
- Articulate how the proceeding fits into the commission's broader vision and the state's current context/challenges.
- Determine the type of stakeholder input needed to best advance decision-making (or meet statutory requirements) in the public interest.
- Draft objectives that match an action (e.g., explore, adopt) to an object (metrics, information) and a focus area (for DERs, distribution utility operations, etc.).
- Identify potential activities (e.g., comments, workshops) that would serve stakeholder input needs and draft objectives.
- Circulate guidance to communicate the commission's objectives to utilities and stakeholders via whitepaper or policy brief.<sup>viii</sup>
- Solicit feedback to refine objectives and identify any additional issues the proceeding should address.
- Finalize and circulate proceeding goals, objectives, and scope for stakeholder reference.
- Offer explicit procedural time lines explaining when and how stakeholders may engage in the process and the purpose of that engagement (see Exhibit 3, page 17).

The examples below explore the approaches that regulators in New Mexico and Hawaii have taken to link proceeding objectives with broader regulatory visions. They suggest several ways regulators can telegraph their intent to stakeholders and utilities. In New Mexico, regulators drafted clear proceeding objectives, linked those objectives to state law and the commission's broader vision, and provided designated venues for stakeholder input. In Hawaii, the commission's decision to publish its intent and authority to investigate performance-based regulation (PBR) at the beginning of the proceeding helped align stakeholders with the commissioners' desired outcomes and limit extraneous PBR proposals or legal challenges.

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**viii** Some commissions use whitepapers or other guidance documents in the order that opens a proceeding to make stakeholders aware of the proceeding and the desired results.

## PUCs in Practice: New Mexico Commissioners Say IRPs Should Be Aligned with State Policy

In May 2021, the New Mexico Public Regulation Commission (NMPRC) — upon its own motion — opened docket 21-00128-UT to consider repealing and replacing NMPRC Rule 17.7.3 New Mexico Administrative Code, which pertains to electric utilities’ IRPs. At the outset of the docket, the NMPRC articulated clear goals and objectives for replacing the existing IRP rules, and tied its goals to state law. Reasons included:

- Ensuring that utilities prioritize resources that best comply with the state’s legislative requirements for reducing GHG emissions, fostering clean energy development, and modernizing the grid
- Ensuring that utilities prioritize DERs, demand response (DR), energy efficiency, renewable energy, and flexible generation
- Improving transparency for regulators, intervenors, and the public in planning and procurement processes<sup>15</sup>

The NMPRC circulated its draft proposed rule revising 17.7.3 NMAC in June 2021, then held two stakeholder workshops to discuss the proposed changes.<sup>16</sup> It notified over 200 stakeholders via email about the date, content, and registration requirements for each workshop. Notified stakeholders included the utilities in the state, consulting groups, universities, trade groups, law groups, state agencies, the state’s attorney general’s office, the US Air Force, energy justice groups, environmental justice groups, nonprofits, and concerned members of the public.<sup>17</sup> In its November 2021 Notice of Proposed Rulemaking, the commission found that the workshop proceedings held so far “have satisfied stakeholder outreach” expectations.<sup>18</sup>

In response to stakeholder suggestions during the workshops and comments filed in the docket, the commission revised the proposed rule to include increasing transparency and stakeholder engagement in future IRPs, revised the requirements for the utility-led stakeholder engagement process, added an emergency procurement provision, and added an independent monitor section, among other changes.<sup>19</sup> One notable change incorporated in the NMPRC’s proposed rule — to help reduce information asymmetry between utility and nonutility stakeholders — stipulates that:

*“The utility shall provide commission utility division staff and stakeholders reasonable access to the same modeling software used by the utility on equal footing as the utility in accordance with commission precedent, and the utility shall share all modeling information.”<sup>20</sup>*

The commission’s vision and clearly articulated opportunities for stakeholder engagement provided context for stakeholders to understand the commission’s intention as it revised the current IRP rule, and offered stakeholders multiple opportunities to provide input to the commission as it revised the proposed new rule. Although the final rule has not yet been decided, stakeholders have already had a chance to influence the content in the proposed rule.

## PUCs in Practice: Hawaii Commission Gives Guidance on Performance-Based Regulation

In 2018, the Hawaii Public Utilities Commission opened a multi-phased proceeding to investigate adopting an updated PBR framework in the state. In the commission's order opening the proceeding, it outlined its intentions for PBR, including to (a) advance broader state policy goals, (b) change the utilities' revenue model and incentive structure, and (c) complement the commission's current regulatory authority. In particular, the commission stated that PBR would help Hawaii meet its Renewable Portfolio Standard goal of 100% renewable energy by 2045, by aligning state utilities' performance to public policy goals. The commission also laid out a vision for what it intended PBR mechanisms to achieve, including:

- Refining or modifying the present regulatory framework to better align the utilities' interests with the public interest
- Encouraging exemplary utility performance and fundamentally changing the regulatory framework in the long term
- Achieving greater cost control and reduced rate volatility
- Encouraging efficient investment and allocation of resources regardless of whether a resource is a capital or operating expense
- Fairly distributing risks between utilities and customers<sup>21</sup>

The commission explained that it was launching the proceeding pursuant to its statutory authority and cited the need to “reduce the State’s dependence on fossil fuels through energy efficiency and increased renewable generation” by implementing economic incentives or cost recovery mechanisms such as (a) a shared cost-savings incentive mechanism, (b) mechanisms to advance renewable energy and retire fossil fuel power plants early, and (c) economic incentives to discourage fossil generation and encourage investment in transmission, distribution, and grid modernization.<sup>22</sup>

During Phase 1 of the proceeding, the commission issued an order that clearly laid out the process — which was important so parties knew the purpose of various stages of the proceeding, how the steps of the proceeding fit together, and where they had opportunities to participate.<sup>23</sup> The PUC staff also issued concept papers before every workshop, which served to tee up topics for the workshops, summarize and respond to comments, restate objectives, and help develop a common foundation for all parties (e.g., staff published a brief to explain the main aspects of Hawaii’s utility regulatory framework).<sup>24</sup>

At the end of Phase 1, staff published their proposed framework moving forward and introduced a new set of guiding principles. These guiding principles were referred to and relied on throughout the rest of the PBR proceeding and helped set up Phase 2, which was focused on designing the details of the mechanisms themselves. If the commission had jumped to Phase 2 — designing the PBR mechanisms — without all of the foundation-building work in Phase 1, the proceeding would have seen fewer outcome-aligned proposals and likely would have spent more time overall going back and forth with stakeholders on intended goals and outcomes.

## Priority Actions

- Commissioners can set proceeding objectives based on their broader regulatory vision. This helps participants understand what the commission is prioritizing in each proceeding, allowing intervenors to present relevant information and have clearer expectations of outcomes. Additionally, commissions can tie goals to legislative or executive directives (e.g., state energy targets), creating a record of how the commission interprets its mandates and demonstrating accountability.
- Commissioners and staff can communicate clear expectations of how stakeholders should participate and how they can add value to the proceeding (e.g., timing, type of input requested, process for soliciting input, and how that input will be used).

# Recommendation 2: Expand Stakeholders' Roles in Solution Development

Informed regulatory decisions typically emerge from robust records. In most formal proceedings, regulators base their decisions exclusively on information (e.g., testimony, comments) brought by parties, which constitutes the final record of evidence in the proceeding. A greater diversity of perspectives tends to translate to a richer set of evidence for commissioners to consider.<sup>25</sup> However, participating in regulatory processes is resource intensive, complex, and often requires specialized legal and technical expertise. Funding and procedural constraints pose barriers to participation by nonutility stakeholders.<sup>ix</sup> In practice, this means that in key energy proceedings, some groups may be poorly represented or left out entirely, even when they are the ones most affected, or when they have specialized knowledge that would help support informed regulatory decisions.<sup>x</sup>

Whereas utilities often have substantial resources to allocate toward participating and representing their interest in proceedings, nonutility stakeholders are typically more limited. A growing body of research and practice concerning inclusive, accessible, and authentic engagement and representation in regulatory proceedings offers ideas for regulators to reduce barriers to engagement.<sup>26</sup>

For example, some commissions are able to offset intervenors' resource constraints by offering monetary compensation to nonutility stakeholders for whom participation in regulatory proceedings is not their primary job.<sup>xi</sup> At least 16 states — Alaska, California, Colorado, Hawaii, Idaho, Illinois, Kansas, Maine, Michigan, Minnesota, New Hampshire, Oregon, Tennessee, Washington, West Virginia, and Wisconsin — offer some form of intervenor compensation to ensure that nonutility stakeholders have sufficient resources to present their interests in regulatory proceedings.<sup>27,xii</sup> Utilities typically fund these programs directly, with costs treated as operating expenses and passed through to customers. In some cases, intervenor funding programs with overly narrow eligibility requirements, too-strict selection criteria, and burdensome application processes may lead to missed opportunities to identify localized solutions and increase customer savings.

Commissions have also sought to create the conditions for inclusive, authentic stakeholder engagement by reducing nonfinancial barriers to intervening. The Arkansas PSC and Illinois Commerce Commission have created easily accessible websites for important proceedings and for stakeholder working groups that bypass traditionally hard-to-navigate docket-filing systems. These websites can make dockets more transparent and navigable for potential intervenors.<sup>28</sup> Making internal docketing systems easier to navigate can also improve stakeholders' ability to find information relevant to them.

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**ix** For further reading on this topic, see Strela Cervas et al., *Comprehensive Building Blocks for a Regenerative & Just 100% Policy*, The 100% Network, 2020, [https://climateadvocacylab.org/system/files/100-network\\_comprehensive-building-blocks-for-a-just-regenerative-100-policy-2020.pdf](https://climateadvocacylab.org/system/files/100-network_comprehensive-building-blocks-for-a-just-regenerative-100-policy-2020.pdf), and *Stakeholder Participation and Regulatory Policymaking in the United States*, The George Washington University Report for OECD, 2014, <https://regulatorystudies.columbian.gwu.edu/stakeholder-participation-and-regulatory-policymaking-united-states>.

**x** In particular, groups that might be less likely to be represented are rural communities for whom PUC offices are inaccessible, communities with high energy burdens, communities in low-income or BIPOC census tracts whose needs are less likely to be prioritized, and groups that have historically been deprioritized in energy siting or environmental impact decisions.

**xi** State legislative action is required to establish intervenor compensation in public utility commission proceedings.

**xii** At least six programs appear to be actively in use by intervenors (California, Idaho, Michigan, Minnesota, Oregon, and Wisconsin). Illinois and Washington are in the process of developing their programs. The remaining state programs have seen minimal use in recent years (Alaska, Colorado, Hawaii, Illinois, Kansas, Maine, New Hampshire, Tennessee, Washington, and West Virginia).



To be sure, there can be a tension between speed and robust stakeholder engagement. More stakeholder engagement can take more time to conduct, which may not be consistent with the urgency of state climate or other goals. Commission awareness of the engagement options and intentional decisions about the type of participation needed, although not a panacea, can help alleviate this tension. Exhibit 3 below offers a modified version of a framework developed by the International Association for Public Participation as a reference for commission decisions regarding stakeholder engagement. The National Association of Regulatory Utility Commissioners' *PUC Stakeholder Engagement: A Decision-Making Framework* offers another framework with greater detail on collaborative decision-making (e.g., settlement agreements).<sup>29</sup>

### Exhibit 3 A Framework for High-Value Engagement with Stakeholders

Engagement Mode	How Stakeholders Are Being Asked to Contribute by PUC	Critical Information for PUC to Provide to Stakeholders to Get the Highest-Value Interaction
<b>Inform</b>	PUC is the ultimate decision maker, and it invites stakeholders to learn about decisions and ask questions about them.	<ul style="list-style-type: none"> <li>● Timely, balanced, and objective information about how and why decisions were made</li> <li>● Clear instructions on the actions stakeholders need to take</li> <li>● Opportunity for Q&amp;A to fortify stakeholder understanding and enable their cooperation</li> <li>● Timely updates during implementation</li> </ul>
<b>Consult</b>	PUC is the ultimate decision maker, and it invites feedback at key milestones or on an ongoing basis (e.g., through appointment to an ongoing work committee) on design criteria, options and alternatives, analyses, and problem-solving approach.	<ul style="list-style-type: none"> <li>● Description of how and why decisions will be made</li> <li>● Explanation of which decisions can be shaped by stakeholder input and which cannot</li> <li>● Guidelines on the type of stakeholder input that will be most useful to the PUC</li> <li>● Description of how stakeholder input resulted in changes to the final decision or design</li> </ul>
<b>Collaborate</b>	PUC invites stakeholders to participate in every aspect of planning and decision-making with the intention of creating a final product that represents a co-created solution. PUC can be the ultimate decision maker, or it can share decision-making with stakeholders (e.g., via settlement agreements).	<ul style="list-style-type: none"> <li>● Any fixed decision-making criteria that cannot be altered by collaboration</li> <li>● PUC requirements for how decision-making authority will be weighted between collaborators and how the collaboration will be governed, where applicable</li> </ul>
<b>Delegate</b>	PUC delegates, assigns, or empowers stakeholders or groups of stakeholders to function as the decision-making authority.	<ul style="list-style-type: none"> <li>● The scope of the assignment (what is included and what is excluded)</li> <li>● Any fixed decision-making criteria that must be adhered to by the new decision maker</li> </ul>

While no one-size-fits-all solution exists, deliberate efforts to expand opportunities and for stakeholder engagement can help commissions build robust, diverse records on which to base their decisions. The following examples highlight the varied approaches Oregon, Massachusetts, and Michigan have taken to expand stakeholder participation — and influence — in regulatory decisions.

## PUCs in Practice: Oregon Improves Stakeholder Engagement

In 2019, the Oregon PUC opened an investigation into utility distribution system planning (DSP).<sup>30</sup> The purpose of the investigation, which is ongoing, is twofold. First, to increase the PUC's understanding of how utilities perform DSP and make distribution-system investment decisions. Second, to direct utilities to develop planning processes that optimize the efficiency of their distribution system and maximize cost and grid benefits to customers. The commission has centered improving procedural equity and stakeholders' opportunities to influence decisions — and subsequent utility distribution system plans — throughout the investigation. It has done so by making the following process decisions throughout the docket:

**Initial staff whitepaper informed by stakeholders.** Before the PUC formally launched the investigation, staff published a whitepaper on DSP in Oregon and held a related stakeholder workshop. More than 40 people attended the workshop, which gave stakeholders the opportunity to ask clarifying questions and to identify considerations for further exploration. It also gave staff the opportunity to test their ideas about DSP and learn stakeholders' priorities.<sup>31</sup>

**Proceeding schedule.** Once the PUC formally launched the investigation, staff filed a phased time line specifying the timing, goals, processes, and objectives of each phase.<sup>32</sup> The investigation schedule was proposed with the caveat that it might change based on stakeholder input and needs.

**Workshops and webinars.** When the investigation opened, DSP was a new concept for many stakeholders. To improve baseline understanding while shaping the intentions for DSP in Oregon, the PUC planned workshops to explore different planning-related topics. These included status quo planning practices of Oregon utilities, hosting capacity analyses, DER valuation, non-wires alternatives, forecasting, community engagement, and other best practices. With the onset of COVID-19, workshops were converted to webinars. Presenters included planning experts from across the country, community-based organizations in Oregon, national labs, utilities, and the commission.<sup>33</sup> This switch in format lowered participation barriers for stakeholders, who, for example, no longer had to travel to participate or could view the webinars at any time.

**Communication platform.** In addition to the proceeding's official online docket, the commission improved transparency and accessibility by creating a separate website for the DSP proceeding.<sup>34</sup> Because chronological docket pages can be confusing, the website provides interested parties with a description of the DSP investigation, a link to the docket page, and links to all stakeholder webinars that have taken place during the investigation.

By implementing these measures, the PUC has offered stakeholders more transparency into how DSP in Oregon will affect them and their communities, how the docket is progressing, how decisions are being made, and how they can get involved and affect decisions.

## PUCs in Practice: Massachusetts Empowers an Energy Efficiency Advisory Council

In 2008, the Massachusetts Green Communities Act established the Energy Efficiency Advisory Council (EEAC), a group of 15 voting members from a statute-specified list of stakeholder types with planning and oversight functions for the state's energy efficiency programs.<sup>35</sup> With passage of the Climate Act of 2021,<sup>36</sup> utilities' three-year energy efficiency portfolios must go beyond the original "all cost-effective efficiency" standard in the 2008 law. Now, the state's secretary of energy and environmental affairs sets a carbon target that the submitted plan must meet.

**Multiple roles.** The EEAC's roles include:

- **Planning functions:** The EEAC offers guidance on the content and ambition of three-year plans, a means of articulating policy priorities. For example, in 2021, the council prioritized workforce development, electrification, and equity, which was reflected in the 2022–2024 proposed plans. The EEAC also has an approval or comment function before submission to the Department of Public Utilities (DPU), for which it is authorized to submit data requests to the program administrators (the utilities responsible for these programs).
- **Oversight functions:** The EEAC is charged with annually reporting to the legislature on implementation of the plan, including cost-effectiveness and contributions to GHG emissions limits in statute. To support the planning and oversight functions, the EEAC can retain independent expert consultants, an important tool to ensure that members understand utility plans and quarterly reports.

**Driving market transformation to low-carbon products.** The EEAC has supported the shift toward deployment of "strategic" electrification. The inclusion of heat pumps as a tool for energy efficiency through baseboard retrofits in 2016–2018 set the stage for 2018 legislation that expanded the scope of energy efficiency programs to include energy storage and electrification that cost-effectively reduce GHG emissions.<sup>37</sup>

**Advancing equity.** The council established an equity working group in 2020 in advance of the 2022 plan, which offered a means of bringing experts in environmental justice to the EEAC's decision-making. The working group provided a set of recommended performance metrics to include in three-year plans and helped develop a proposal for environmental justice community eligibility requirements. Although the DPU approved a performance incentive focused on net benefits achieved in environmental justice communities, the definition it adopted for those communities fell short of the equity working group's recommended focus on the communities most affected.

The legislature's choice in 2008 to empower a wide group of stakeholders in Massachusetts created buy-in for energy efficiency from every sector of the economy, strengthening the program against opposition and enabling its visionary energy savings goals. The EEAC also enabled the transformation of the state's energy efficiency programs toward a focus on equity and decarbonization, a potential model for other states looking to build a base of support to implement complex legislation.

## PUCs in Practice: Michigan Multiyear Exploration Feeds into Regulatory Decisions

**“In the matter, on the Commission’s own motion, to establish MI Power Grid.”** On October 17, 2019, the Michigan Public Service Commission (PSC), in partnership with Governor Gretchen Whitmer, established a multiyear stakeholder engagement initiative to “maximize the benefits of the transition to clean, distributed energy resources for Michigan residents and businesses.” The initiative includes three work streams: customer engagement, integrating emerging technologies, and optimizing grid investments and performance. Each commissioner is responsible for a work stream. Work groups within the three work streams each feature a staff team leader and an overarching staff sponsor.

**A broad range of perspectives.** The commission’s September 2021 status report indicates that the MI Power Grid initiative has involved 57 stakeholder meetings that have included more than 350 stakeholders. Notably, participation appears to have been diverse, with representatives from townships, cities, local fire departments, equity and environmental justice organizations, and federal agencies joining traditional regulatory intervenors such as the utilities, consumer advocates, and state attorney general.<sup>38</sup> Working groups have focused on issues including:

- Advanced planning
- Competitive procurement
- New technologies and business models
- DER rate design analysis
- Customer education and participation

**Input shaping PSC decisions.** The report highlights multiple examples in which working group discussions have directly influenced PSC decision-making in formal dockets. To that end, the report also notes that the PSC has issued more than 17 orders in 10 MI Power Grid–related dockets since 2019.<sup>39</sup> Examples include:

- Draft interconnection rules that resulted in a PSC rulemaking (U-20890)<sup>40</sup>
- The PSC adopting several of the demand response working group’s recommendations in 2020 (U-20628)<sup>41</sup>
- Adoption of working group recommendations to establish a definition for “pilot” and objective criteria for pilot program review (U-20645)<sup>42</sup>

The commission has indicated that it plans to issue a final report “detailing the results and accomplishments” of the MI Power Grid initiative by October 1, 2022.

## Priority Actions

- To make intervening in proceedings more accessible and to include a wider array of stakeholder perspectives, commissions or legislators could create an intervenor compensation program to make it possible for underrepresented stakeholders to participate in relevant proceedings.
- Commissions can also create expanded language and attendance options (e.g., time of day, virtual versus in-person) for stakeholder communications and meetings. Combined with updated websites that allow for easier navigation and docket searches, updated commission communications practices can improve access and make proceedings more inclusive.
- Commissioners can leverage diverse views by delegating issues such as the design of performance incentive mechanisms; community energy goals; or community equity and health issues to working groups or other collaborative stakeholder groups, as appropriate. Such delegation is often most appropriate where stakeholder attention and engagement can support creative solutions or more effective oversight. By providing additional opportunities for stakeholder education on relevant, foundational topics (e.g., energy equity, the ratemaking process), commissions can help such groups work together more effectively.

# Recommendation 3: Unlock Data and Information

Commissioners rely on the record of evidence and established precedent when making decisions. Well-resourced parties often have an advantage over other stakeholders in developing the record insofar as they can afford to provide robust data and analysis. The utility is typically the best resourced party because of its privileged position relative to other stakeholders. Utilities often have greater access to operational data than regulators and intervenors, which means they can craft arguments that are prepared by external consultants and use data marked as trade secret, making it challenging for any other party to verify their data, analyses, or conclusions. By contrast, intervenors and regulators must either request access to utility data or proceed without access, which can weaken their position and make it hard to ensure that the utility is (a) using the most up-to-date resource costs and (b) considering all available resources and policies, including DERs, transmission and distribution, resilience, and climate and energy targets.

Where PUC staff and stakeholders must rely on the utility's models and information, the resulting information asymmetry can potentially bias decisions in favor of the utility. Information asymmetry exists in various forms between utility and nonutility stakeholders. Lack of access to a utility's modeling assumptions, data, and methodologies is a major source of information asymmetry and can make it almost impossible for stakeholders to verify the accuracy of utility forecasts, financial assumptions, grid needs identification, and resource planning outcomes. Such lack of access — especially for resource planning — can ultimately have a chilling effect on grid decarbonization; for example, when a utility plans to keep a fossil fuel plant on line despite a strong economic and financial case for closure.<sup>43</sup>

For example, stakeholders do not always have access to distribution system-level data needed to identify grid modernization needs. This can make it difficult for third parties to identify demand for DERs and make verifying the need for utility grid modernization investments almost a guessing game. One way to increase availability of distribution system data is for utilities to provide hosting capacity maps.<sup>44,xiii</sup> As of September 2021, nine states required their utilities to conduct and publish hosting capacity analyses; several other states were having discussions about requiring them. In some cases, utilities are producing such maps without a regulatory requirement to do so.<sup>45,xiv</sup> Advanced distributed energy forecasts can also help ensure that DERs are considered as an incremental resource with impacts on forecasted load.

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**xiii** Hosting capacity analyses indicate the amount of generation (in kilowatts) that can be added to the distribution system feeder before the feeder reaches capacity and requires system upgrades to safely and reliably integrate additional generation.

**xiv** California, Colorado, Connecticut, Illinois, Maryland, Minnesota, Nevada, New Jersey, and New York require their utilities to produce hosting capacity maps. Ohio, Oregon, New Hampshire, and New Mexico are having regulatory discussions about whether hosting capacity maps should be required. In Hawaii, Massachusetts, Michigan, North Carolina, Rhode Island, Vermont, and Virginia, at least one utility provides hosting capacity maps, although they are not mandated by regulators.

Lastly, utilities typically have the burden of proof to demonstrate their service quality costs. Utility revenue requirements are set based in part on a utility's reported expenses, which include the utility's cost to deliver electricity to end-users, including operations and maintenance expenses. Although utilities report these costs, they do not report measures to reduce or contain them. As a result, regulators are often left in the dark about whether a utility's expenses are optimized for the least cost to achieve desired outcomes.<sup>46</sup> Data such as target operational and management budgets — and options to reduce those budgets over time — could be helpful to lessen the temptation for utilities to engage in cuts to service quality to improve margins.

In recent years, several commissions have taken steps to reimagine integrated resource planning processes to ensure that utilities accurately reflect costs, meet policy objectives, and are transparent and responsive to stakeholders. One step commissions have taken to reduce information asymmetry and enable more stakeholder engagement is to provide access to relevant modeling software. Some commissions, such as those in Oregon and New Mexico, have required utilities to provide intervenors with licenses to the modeling software they use, which eliminates the prohibitive cost barriers of expensive modeling packages.<sup>47</sup> Greater access to such models can help ensure that IRPs accurately model a range of possible futures and can increase confidence that desired cost and non-cost outcomes will be achieved. In some cases, stakeholder-developed resource portfolios can provide a new perspective and allow for options that the utility or commission may not have already considered. Stakeholders may also help provide a broader perspective on indirect impacts related to health, jobs, and energy burden.

New data reporting requirements may also be needed to ensure sufficient transparency. In accordance with North Carolina's Carbon Plan, the North Carolina Utilities Commission required Duke Energy to disclose all its planning inputs and assumptions and outputs to stakeholders.<sup>48,xv</sup> In Hawaii's Integrated Grid Planning docket, the commission and utility have leveraged extensive stakeholder working groups and a technical advisory panel to ensure that all of the utility's inputs, assumptions, and methodologies are made transparent to intervenors; discussed and tweaked according to stakeholder input; and vetted by technical experts.<sup>49,xvi</sup>

The following examples highlight how some states are addressing information asymmetry between utilities and stakeholders.

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**xv** However, in juxtaposition to commissions that require utilities to provide licenses to specific modeling software, a critique of the North Carolina approach is that it is up to each intervenor to procure modeling services to model an alternative carbon plan if they don't have in-house expertise.

**xvi** The Hawaii PUC also required the utility to use the National Renewable Energy Laboratory's Annual Technology Baseline for its forecasting inputs. This decision replaced the utility's proprietary data with public data, which allowed stakeholders to more easily verify the utility's models.

## PUCs in Practice: California PUC Uses the RESOLVE Model

Since 2016, the California PUC (CPUC) has used E3's RESOLVE model to evaluate IRPs and determine the build-out of generation resources, transmission, and storage necessary to meet California's 2030 and 2050 GHG emissions-reductions goals.<sup>50</sup> The RESOLVE model can select resource portfolios and transmission levels that meet technical and policy constraints (e.g., Senate Bill 100's 60% Renewable Portfolio Standard requirements) at the least cost while maintaining reliability. The detailed outputs of RESOLVE allow the PUC to have concrete, yearly targets for meeting long-term state goals. IRP filings are evaluated based on these RESOLVE portfolios.<sup>51</sup>

The PUC decided to use the RESOLVE model because it is publicly available and vetted.<sup>52</sup> Utilities are required to share all their spreadsheets of assumptions as IRP attachments, which the commission can then compare and verify against its own model outputs. The underlying code for the RESOLVE model and the assumptions are publicly available on the CPUC's website, ensuring transparency for stakeholders and utilities alike. As PUC program documents note: "The CPUC uses the process of soliciting party feedback on inputs and assumptions to ensure that RESOLVE contains transparent, publicly available data sources and transparent methodologies to examine the long-term planning questions posed within the Integrated Resource Planning process."<sup>53</sup>

To encourage consistency and transparency, the California Energy Commission defines the inputs for planning scenarios that utilities must use via a stakeholder process, verifies certification for Renewable Portfolio Standards, and ensures that claims of GHG emissions are accurate.<sup>54</sup> Along with developing scenarios, the Energy Commission requires electricity suppliers to provide information on the mix of generation resources used to supply electricity to customers. They must also provide performance and safety data for the photovoltaic modules and meters needed to (a) take advantage of solar programs and (b) understand the potential financial benefits of such investments.<sup>55</sup>



## PUCs in Practice: Arizona Commissioners Determine That Information Asymmetry Misled Utility Rate Case Assertions

In November 2021, the Arizona Corporation Commission (ACC) voted to disallow Arizona Public Service (APS) cost recovery for more than \$200M in investments in environmental controls in the Four Corners Power Plant (4CPP) in its 2019 rate case — which represents about half the amount that APS sought for approval. The commission cited an “overwhelming asymmetry of information” in APS’s favor as a factor in its decision.<sup>56</sup>

**\$200M disallowance for cost recovery due to “planning imprudence” surrounding APS’s Four Corners investment.** In 2015, APS began a \$467M installation of two selective catalytic reduction devices at Units 4 and 5 of the coal-fired 4CPP to comply with the federal Regional Haze Rule. In the 2019 rate case, APS proposed to recover the costs for installing those pollution control devices. It argued that the costs warranted recovery because (a) the US Environmental Protection Agency required the devices for compliance and the plant could not have kept running without them, (b) the units are critical for maintaining reliability, and (c) the ACC implicitly determined that the investment was prudent in a prior case.

The commission disagreed with APS, stating that assumptions regarding the economics of keeping the 4CPP on line were inaccurate and that more cost-effective alternatives existed before APS began investing in the devices for those units. The commission asserted that this was all information APS knew — or should have known. Additionally, the ACC found that APS “intentionally manipulated” its resource analysis to withhold that information or otherwise ensure that no party would raise questions about the economics of Units 4 and 5. The ACC cited deficiencies including:

- Omission of a low gas-cost scenario in APS’s 2014 IRP despite the fact that gas costs were low in 2014. Results from a 2014 low gas-cost scenario would have implied a different course of action based on the determined cost-effectiveness of a gas plant compared to the 4CPP.
- Lack of analysis on (a) the economic costs and benefits of continuing to operate the 4CPP or (b) the impact of early retirement on retail rates.
- Including the 4CPP as a “must-run” resource in every 2020 IRP scenario, with the same level of generation regardless of carbon costs or gas costs used.
- Assumption that the 4CPP will operate as a must-run resource irrespective of carbon or gas costs.
- Failure to explain why the costs to operate the 4CPP were almost twice the costs APS reported in its Federal Energy Regulatory Commission Form 1 filing.

Recognizing the presence of information asymmetry in the rate case — and using public information and previous APS filings to establish a more transparent body of evidence — reduced APS’s ability to influence outcomes. The ACC came to a decision aimed at upholding its regulatory compact of ensuring safe, reliable, and affordable utility services to ratepayers. APS is seeking a reversal of the ACC 2021 decision in a recently filed lawsuit with the Arizona Court of Appeals, claiming that this decision “discourages the capital investments needed to keep the lights on.”<sup>57</sup> Case briefs were due on June 6, 2022.

## Priority Actions

- To help reduce information asymmetry, commissions can direct utilities to use data for forecasting and modeling that is accessible, available to the public, and up to date to remove barriers preventing stakeholders from accessing utility modeling assumptions and data. This may involve reevaluating data transparency practices and ensuring that stakeholders have adequate opportunities to question utility data and modeling results. Commissions can also unlock critical planning information by requiring that licenses to commission-approved modeling software be shared with stakeholders.
- Commissions can require utilities to provide information up front, or use information requests during proceedings, to get additional clarification on utility inputs, assumptions, statutes, decision-making criteria, and operations decisions. Topics for information requests can be surfaced by commission staff or stakeholder comments, and utilities' responses should provide more information on which to base a decision.
- Commissions can complement the modeling transparency efforts above by (a) hosting (or overseeing utility-led) stakeholder working groups that socialize and solicit feedback on model inputs and assumptions and (b) hosting less technical conversations to clarify how planning decisions will impact communities in individual utility service territories.

# Recommendation 4: Initiate New, Inclusive Processes to Speed Equitable Decarbonization

Commissions face complex challenges that existing processes may not be able to address. These challenges require PUCs to initiate and design new processes, proceedings, or frameworks to make informed decisions on emerging topics and technologies. PUC responses include both proactive steps and actions in response to new legislative requirements.

For example, the shift toward investment in distribution infrastructure and increasing adoption of DERs motivated many PUCs to initiate or reinvigorate distribution system planning processes and adopt new frameworks for valuing DERs in benefit-cost analysis. In more recent years, commissions have similarly begun to review gas planning and initiate proceedings on the future of the natural gas system. In addition, the need for rapid innovation has motivated multiple states to pursue frameworks that encourage experimentation with new types of projects and business models. These new decision-making frameworks are most effective when they also include processes for diverse and inclusive stakeholder engagement.

In response to growth in DERs, a number of states, between 2014 and 2016, began to require utilities to file electric distribution system plans that bring transparency into decisions about distribution-level investment.<sup>58</sup> Such planning is essential to enable the higher penetrations of these resources needed to meet climate goals. Commissions have often initiated these new processes without legislative requirements to do so, and they have included a range of process approaches. These approaches include (a) requiring utilities to host a certain number of community engagements before they submit their plans, (b) requiring utilities to submit incremental or phased plans to solicit interim feedback from the commission before a final plan goes into effect, (c) publishing proceeding time lines for distribution system planning with an explicit offer that the time lines can be altered to meet community needs, and (d) understanding that the plans will not be perfect the first time — and not letting perfect be the enemy of the good.

Commissions are being increasingly asked to consider state policy, balance long-term versus short-term impacts, and understand the impacts of their plans on vulnerable communities — for both electric and gas planning. Beginning in 2020, utility regulators in eight states plus Washington, D.C., initiated new proceedings to examine the future of the gas system; many started with a focus on planning processes similar to the earlier efforts on the electric side.<sup>xvii</sup>

One element of evaluating the prudence of utility investment decisions is benefit-cost analysis, a decision-making tool traditionally used primarily to evaluate utility energy efficiency programs. Regulators face a range of decisions that require analysis of the positive and negative impacts of particular technologies through different lenses — those of the utility, participating customers, and all ratepayers, as well as other groups, such as communities that have historically relied on the fossil fuel industry for jobs. These decisions extend to emerging applications (e.g., electric vehicle [EV] pilots, performance incentive mechanisms, and DSP), and encompass the need to include a broader set of considerations in their analyses (e.g., climate, equity, job creation, economic development). In recent years, commissions in California, Maryland, Michigan, New Jersey, Rhode Island, Washington, and Washington, D.C., have explored or adopted updated benefit-cost analysis methodologies.

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**xvii** California, Colorado, Massachusetts, Minnesota, Nevada, New York, Oregon, Washington, and Washington, D.C.

Regulatory sandboxes are an example of a procedural mechanism that provides an arena in which to safely test new ideas and evaluate their benefits, allowing successful programs to be scaled up. Regulatory sandboxes encourage innovation by allowing utilities and third parties to experiment with new ideas, products, and business models in small-scale, low-risk trials. Sandbox frameworks typically provide innovators with quicker access to regulators for approvals and decreased procedural requirements, and allow failures to become learning experiences rather than reasons for them to be penalized.

## What Are Regulatory Sandboxes?

The slow-moving nature of utility regulation is in tension with the immediate need to reduce emissions to prevent the worst effects of climate change. Innovation requires dedicated time and space to test new concepts, take risks, and pursue ideas that often fail. Regulation encourages prudent, predictable investments, and safe, reliable, and affordable provision of energy services — and often telegraphs the need to avoid taking risks.

Enter regulatory sandboxes. Sandboxes are frameworks within which regulated and unregulated innovators can test business ideas and products under defined regulatory parameters. These parameters are often less stringent and time intensive than traditional regulatory frameworks. Sandbox frameworks typically provide innovators with quicker access to regulators for approvals, decreased procedural requirements, and a “fast fail” environment in which lessons from failures are used to spur new ideas for solutions. Irrespective of success, projects inform conversations about other possible solutions.<sup>59</sup>

In comparison to incentive-focused reforms like PBR, regulatory sandboxes are primarily *procedural mechanisms*: they provide an expedited process for the utility and other stakeholders to safely test new ideas, evaluate their benefits quickly, and scale successful programs. As opposed to one-off pilot programs, regulatory sandboxes offer a framework for *continuous* identification, deployment, and scaling of successful pilots into full customer offerings.

A number of industries have used regulatory sandboxes since 2016, including the finance and technology sectors. More recently, regulatory sandboxes have gained the attention of the energy sector and have been piloted by a handful of regulators in the UK, Australia, Brazil, Hawaii, Illinois, Vermont, Connecticut, and New York.<sup>60</sup>

The following examples illustrate how commissions are adopting new regulatory frameworks to accommodate innovating programs and planning for decarbonization.

## PUCs in Practice: Connecticut PURA Experiments with Regulatory Sandboxes

On March 30, 2022, the Connecticut Public Utilities Regulatory Authority (PURA) issued an order in its distribution system planning investigation docket (17-12-03RE05) that establishes a regulatory sandbox framework for testing and scaling innovative grid solutions: the Innovative Energy Solutions (IES) program. The order largely follows a PURA straw proposal issued the year before, with some modifications.<sup>61</sup>

In addition to stakeholder input, PURA highlighted its October 2019 Equitable Modern Grid interim decision — which outlined its vision for equitably modernizing the electric grid in Connecticut — as an influence on the IES program design.<sup>62</sup> Final program details are as follows:

**Process.** PURA proposes to conduct the piloting process in four phases over two years — staggered so that a new cohort launches each year.

- Phase 1: Ideation and Screening. Applicants submit conceptual pilot proposals for consideration.
- Phase 2: Prioritization and Selection. Selected applicants are invited to develop detailed project proposals; PURA selects winning proposals.
- Phase 3: Project Deployment. Selected participants implement proposed projects and collect data over 12 to 18 months, with support and oversight from a program administrator and an Innovation Advisory Council.
- Phase 4: Assessment and Scale. Participants develop and share a final report to help determine which projects should be selected to be deployed at scale.

**Participation.** Applicants may participate in one of three ways: (1) as a third-party developer offering distributed and/or smart grid solutions that do not directly affect grid infrastructure operated and owned by an electric distribution company (EDC); (2) as an EDC offering solutions that “nimply” address customer or system needs and/or explore customer-facing products; or (3) as a joint EDC/third-party developer collaboration offering solutions that require partnership.

In addition to establishing the three participation pathways above, PURA explains that it plans to select at least one concept proposal that meets the threshold requirements from each participation pathway in Phase 1, to encourage a collaborative environment early in the program. Similarly, for the first cycle, it directs the EDCs to develop “robust” conceptual proposals for at least three unique projects that correspond to the third pathway.

**Innovation Support Services.** PURA finds the provision of educational, engagement, and outreach services to be an “essential component” of the program design, insofar as it will encourage increased participation of third-party innovators. Approved support services feature: (a) an information service available ahead of a Phase 1 submission for “candid, informal dialogue” between PURA, the program administrator, and an innovator; and (b) pilot project regulatory support, in which PURA staff or the program administrator provide customized guidance or help regarding relief from a regulatory requirement, upon request from an innovator.

**Eligibility and performance metrics.** PURA indicates that it will apply four evaluation metrics to projects at each phase: (1) economic benefit, (2) cost-effectiveness, (3) solutions for programmatic or market gaps, and (4) equity. At each phase of the process, applicants will provide increased detail about expected performance against these metrics. PURA indicates that it may establish additional metrics for future program cycles, potentially including GHG emissions reductions.

**Budget caps and cost recovery.** For the first program cycle, PURA establishes a \$25M overall program budget and a \$5M lifetime cap on individual projects. It indicates that it will track (a) annual program costs and administrative expenses, and (b) uneven, less predictable expenditures separately, but that costs associated with both types of expenses will be recovered via an existing, non-bypassable charge in the Rate Adjustment Mechanism.

As the commission notes in its decision, the IES framework is “necessary to encourage and advance the deployment of innovative clean energy technologies, applications, and programs.” By creating a supportive environment and transparent process to speed such programs, the framework positions Connecticut to more quickly achieve its 80% below 2001 by 2050 (and other interim) emissions goals.

## PUCs in Practice: Maryland PSC Updates Benefit-Cost Approach for EVs; DERs May Be Next

In December 2020, the Maryland PSC issued a decision denying Baltimore Gas and Electric's proposed three-year multiyear rate plan (MYRP, PSC Docket No. 9645).<sup>63</sup> In the decision, the commission found that BGE's benefit-cost analysis (BCA) methodology supporting its request for cost recovery of an EV pilot warranted further stakeholder discussion. Accordingly, the PSC directed the existing EV working group in Public Conference 44 (PC44) — its broad electric grid modernization docket — to develop for the commission's consideration a consensus BCA that would help assess utility EV programs.

The working group filed its recommended EV BCA framework on December 1, 2021. The group emphasized that this framework would: (a) account for all the costs and benefits relevant to the utility, EV owners, and society; and (b) measure the cost-effectiveness and ratepayer impacts of the utility EV programs with separate assessments. The framework, formed using the guidance and principles of the National Standard Practice Manual, relies on several tests to assess net impacts from utility EV programs:

- A Maryland “jurisdiction-specific” test, which serves as the primary test and measures the cost-effectiveness of the utility EV programs being assessed relative to a baseline. This test is based on the societal cost test. The output is net present value (NPV) benefits/NPV costs.
- A “market-wide” test, which measures “the impact of all EVs on society,” while distinguishing between utility EV program impacts and impacts from EVs more generally. This test also supports quantification of impacts from strategic managed charging programs. The output is NPV benefits/NPV costs.
- Two “aggregate non-participating ratepayer impact” assessments: one “bills only” test measuring the monetized impacts on ratepayer bills from utility EV programs; and an all-inclusive aggregation of monetized impacts and related externalities (e.g., public health, environmental) for both individual utility programs and the combination of utility EV programs.
- A method for addressing important qualitative considerations.

These tests assess up to 22 factors that could potentially impact the utility, participants, or society. The framework includes an additional six factors that the working group deemed important but “either negligible or impossible to calculate with credibility.” The PSC considered and adopted the working group's recommended methodology on January 12, 2022.

Contemporaneous with the EV BCA report, the EV working group leader also recommended that the commission consider adopting a broader, unified DER BCA framework to “measure the cost-effectiveness and potential rate impacts across all DERs” and ensure that projects “can be adequately reviewed in support of meeting Maryland's climate and energy policies.” The working group leader noted that such a framework may also encourage consistency in determining value streams for different DERs and support utility distribution system planning efforts.

The commission agreed. On December 16, 2021, the PSC opened a proceeding to “explore the process for developing a proposed unified BCA framework for DERs in Maryland”.<sup>64</sup> To support scoping of its new docket, the commission asked stakeholders for comments on three things:

- The practical use of a unified BCA for stakeholders
- The role of a unified BCA in commission proceedings
- Suggested methodologies, procedures, or vehicles for developing the unified BCA

The commission held a legislative-style hearing on February 23, 2022, to consider the unified BCA recommendation and the comments received. On May 13, 2022, the commission directed the establishment of a working group to address the development of a Maryland-specific unified BCA framework.

### **Priority Actions**

- Identify whether (a) an overhaul of existing decision-making processes or (b) development of new processes are needed — particularly in cases where existing processes are insufficient to advance equitable decarbonization outcomes.
- Use updated benefit-cost analysis frameworks to value DERs against traditional resources and incorporate a broader set of criteria into decision-making and align with state policy goals.
- Consider ways to spur rapid innovation and test business ideas and products under defined regulatory parameters (e.g., via a regulatory sandbox).



# Conclusion

It has never been more important to rapidly and equitably decarbonize the electricity grid. As the effects of climate change intensify and energy inequities continue to grow, many states have begun to require specific actions by their state's PUC to prioritize equity and decarbonization in their decisions. Time invested up front in establishing clear objectives, engaging stakeholders, making data transparent, and determining whether new processes are needed can help regulators move at the pace needed to serve the public interest.

This paper series has explored three dimensions of modernizing state regulatory commissions to orchestrate the transition to a decarbonized grid: purpose, people, and process. Although our research suggests that most PUCs have not reached their full potential to tackle this decisive decade, numerous commissions are actively pursuing the institutional reforms needed to ensure that they can cost-effectively and equitably implement their clean energy goals.

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