

RESPECT

Reforming Energy System Planning for Equity and Climate Transformation

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Abstract

Unless states implement new regulatory changes, electric and gas distribution system planning processes will not enable decarbonization at the scale needed to address the climate crisis. The northeast states have made important steps directionally consistent with addressing climate change, but the pace and scope of changes to date are inadequate to meet the mounting challenges. The recent acceleration of observable and predicted impacts of climate change, including storms with near-term impacts on human life and electric reliability, irreversible global changes, and disproportionate impacts on lower income communities, communities of color, and rural communities, require swift and sweeping reforms.¹

Energy system planning must be reimagined to better align planning with climate, equity, and clean energy goals and requirements, while reducing costs for consumers. Despite the intricate relationships between the gas and electric utility systems, including the interdependence between gas and electric demand and the need to electrify previously gas-fueled technologies, under current laws these systems are generally regulated separately by state public utility commissions (PUCs).

Acadia Center proposes a modernized framework for state utility regulation called RESPECT: Reforming Energy System Planning for Equity and Climate Transformation. RESPECT addresses three problems: (1) planning silos cause overspending, reduced reliability and resilience, and more climate pollution; (2) current planning processes ignore equity and environmental justice; and (3) utilities will not plan against their financial interests, even with performance incentives. RESPECT offers two overarching solutions:

- **Comprehensive Planning**
Conduct “all-in” energy system planning that considers supply and demand-side resources; customers’ energy, capacity, and thermal needs; and climate requirements and environmental justice impacts for all fuels across the state.
- **Separate Planners and Owners**
Create statewide planning entities that can look for solutions beyond utility boundaries and across fuels, leaving traditional utilities free to focus their efforts on business development in alignment with climate and equity mandates. By separating the entity that conducts planning from the entities that own the grid and energy systems RESPECT avoids conflicts and clarifies roles.

Acadia Center’s RESPECT proposal will ensure the alignment of system planning with state and regional climate, equity, and clean energy goals and requirements. It will clarify the role of incumbent utilities and reduce risk for energy system investments, because such investments will be part of a coordinated plan. Although reforms at the regional level are critical,² Acadia Center focuses this proposal on reforms at the state level and intends this proposal to be a catalyst for further discussion about state and regional reforms.

Overview

Electric and natural gas (or, more accurately, fossil gas) utilities, and the distribution systems they own and operate, function under outdated incentives and approaches and are misaligned with efforts to build an equitable and safe clean energy future. States have adopted an array of climate, clean energy, equity and consumer goals that have not found their way into the regulatory system. The result is that distribution utilities, as entities charged with planning the electric and gas systems they own and operate, retain a strong financial stake in the results of their planning decisions as they face new mandates and cannot help but be swayed by their own bottom line and adherence to fiduciary obligations. As a result, incentives driving utilities' investment decisions can create substantial barriers to capturing the benefits of clean energy, addressing environmental justice concerns, and achieving ambitious goals for climate.

It is not surprising that the fastest growing portion of electric bills comes from distribution capital investments.³ Even with performance incentive mechanisms that attempt to align utility incentives and consumer needs, utilities face a near-impossible task of making planning and investment decisions that simultaneously work in support of consumers, state policy, and the utility itself – and, not surprisingly, often the outcome of this process benefits the utility interests. The result is sub-optimal outcomes for consumers, climate goals, and clean energy investments; delayed relief of environmental justice burdens; and conflicts of interest that preserve the use of fossil fuels and slow the pace of building a clean energy future. It is time for a change.

Three truths lie at the root of these issues: (1) planning silos cause overspending, reduced reliability and resilience, and more climate pollution; (2) current planning processes ignore equity and environmental justice; and (3) utilities will not plan against their financial interests, even with performance incentives. To correct these unacceptable dynamics, Acadia Center is proposing a solution for Reforming Energy System Planning for Equity and Climate Transformation (RESPECT).

RESPECT encompasses two common-sense but significant shifts in the roles of utilities and the state in system planning:

Comprehensive Planning. Conduct “all-in” energy system planning that considers supply and demand-side resources; customers’ energy, capacity, and thermal needs; and climate requirements and environmental justice impacts for all fuels across the state.

Separate Planners and Owners. Create statewide planning entities that can look for solutions beyond utility boundaries and across fuels, leaving traditional utilities free to focus their efforts on business development in alignment with climate and equity mandates. By separating the entity that conducts planning from the entities that own the grid and energy systems RESPECT avoids conflicts and clarifies roles.

By reforming electric and gas distribution planning processes in this way, states can overcome existing problems with utility regulation and planning and maximize the benefits to energy consumers and the grid. While the RESPECT solutions outlined in this document are intended to align with the efforts of the New England Governors’ Northeast Energy Vision and related efforts to reform the planning and investment processes at ISO-New England, we are limiting the scope of this paper to distribution-level planning. However, Acadia Center believes broad integration of transmission, generation, and distribution planning is necessary for the Northeast to reach its ambitious climate and energy goals.

This document provides an assessment of how the current distribution utility planning paradigm and its lack of coordination across fuels and geography leads to decisions that are overly costly for ratepayers and fail to address overburdened communities. It outlines how this dynamic is the result of misaligned incentives within the existing utility business model and Cost of Service Regulation (COSR) and describes each of Acadia Center’s two proposals for reform in the RESPECT solution.

UTILITIES FACE A NEAR-IMPOSSIBLE TASK OF MAKING PLANNING & INVESTMENT DECISIONS THAT SIMULTANEOUSLY WORK IN SUPPORT OF CONSUMERS, STATE POLICY, AND THE UTILITY ITSELF.



Problem One

Planning Silos Cause Overspending and More Climate Pollution

Planning for the electric distribution grid involves a patchwork of investor-owned distribution utilities and municipal utilities undertaking individualized, proprietary modeling exercises, with some oversight by public utilities commissions (PUCs) after the fact. These plans are integrated with regional system plans developed at ISO-NE in coordination with transmission owners. The process is similar for fossil gas pipelines at the distribution and transmission level, though with even less regional coordination and planning. Fossil gas pipelines provide fuel for both electric generation and building heating, presenting yet another overlay of patchwork rules on the energy system. Further entwining the electric and gas systems, the best way to decarbonize buildings is to electrify them, eliminating the use of fossil fuels like gas. Despite these intricate relationships between the gas and electric systems, the electric grid, gas pipelines, distributed energy resources (DER), and delivered fuels are never evaluated as an integrated energy system – even within large utilities that provide both gas and electric service and PUCs that regulate both industries. The net result of this siloed planning is akin to doing road planning without considering where commuters live and work, what other roads already exist, and the presence of or potential for public transportation systems, bike lanes, or shared electric vehicles.

In addition, regulatory requirements incentivize conservative planning assumptions to be conservative, designed to err on the side of overestimating demand and undervaluing distributed resources by significant margins. This results in significantly higher estimates than actuals. One Acadia Center analysis found a 17-20% error rate in ISO-NE's energy and peak demand forecasts for 2014, compared to actual usage.⁴

The current process for electric planning is rife with overspending on large-scale, capital-intensive infrastructure solutions (e.g., poles, wires, and substations) that turn out to be unnecessary when the predicted load growth does not occur.⁵ The process also involves lengthy delays and unanticipated costs to interconnect distributed renewable energy resources, such as the gigawatts of distributed solar in central Massachusetts whose applications were held as pending for a year awaiting a National Grid cluster study.⁶ Utility territories also vary significantly in terms of enabling consumer control over their energy usage or access to energy efficiency and demand response programs. For instance,

in Connecticut, most residential customers in United Illuminating territory have advanced metering infrastructure and access to time-of-use rates, while no residential customers of Eversource do.⁷

AT A FUNDAMENTAL LEVEL, SILOED ENERGY SYSTEM PLANNING VIOLATES ONE OF THE KEY PURPOSES OF MONOPOLY UTILITIES: TO ENSURE EFFICIENT SYSTEM INVESTMENTS WITHOUT DUPLICATION.

Utility planning and regulations also lead gas utilities to spend billions of ratepayer dollars on system upgrades that lock-in fossil fuel usage for decades, making it impossible to achieve state climate targets and wasting consumer dollars. At a fundamental level, siloed energy system planning violates one of the key purposes of monopoly utilities: to ensure efficient system investments without duplication. Because almost every building already receives electric service, providing energy through delivered fuels or the gas system is increasingly duplicative, given the current feasibility of replacing all fossil fuel-powered appliances with electric alternatives, and many other functions such as industrial processes. Furthermore, due to the need to address and plan for risks to and from the entire energy system from climate change, siloed planning may also violate the basic principle of providing safe, reliable service to the public, as the dangers posed by both electric and gas distribution services are heightened by the climate crisis, while the emissions from these services exacerbate the crisis.

Problem Two

Current planning processes ignore equity and environmental justice

The current planning process fails to address the systemic overburdening of certain communities with the pollution and externalities of our fossil-fuel based systems. Traditional utility planning has contributed to the uneven distribution of environmental hazards. This is readily apparent, for instance, in the siting of polluting generation facilities disproportionately in low-income communities and communities of color. These conditions must be addressed so that all consumers benefit from a healthier energy system and are able to afford the energy they need.

Without significant changes to their regulation, markets will continue to value what appears to be the cheapest resource, even if that resource imposes significant externalities on already overburdened communities. Markets will also electrify the homes of the wealthy first and leave vulnerable populations paying for the remaining gas systems and stranded costs as they suffer the health impacts of the continued use of fossil fuels. Unless regulatory decision-making internalizes those costs, as well as the social and health benefits of not creating disproportionate environmental burdens, this dynamic will continue.

Utility planning and the incentives that guide decision-making prioritize reliability and the opportunity to earn a financial return. Even for utilities that have the best intentions,

regulatory requirements do not prioritize equity and environmental justice or require that these considerations be factored significantly into utility planning efforts.⁸ Not surprisingly, as a result they usually are not major considerations.⁹ Even though utilities' planning decisions are subject to review by PUCs, they are generally neither empowered nor required to consider climate and equity issues, and certainly not at the same level as the potential for lower rates or healthy utility returns.¹⁰ Additionally, both PUCs and the general public face significant information imbalances, as utilities have monopoly access to data and often assert confidentiality barriers to sharing that data. The result is that consumers spend billions per year on investments intended to last decades, but without adequate transparency to provide assurances that alternatives have been fully assessed and consumer interests are best protected, particularly when fully considering how the energy system must change in coming decades to address climate change and ensure environmental justice. Reform is essential to ensure that these considerations are taken into account in energy system planning.





Cost of Service Regulation Creates Significant Barriers to Progress

A significant cause of misaligned incentives is Cost of Service Regulation (COSR). Under COSR, utilities earn a regulated rate of return on capital investments like poles, pipes, wires, and substations – usually 9% or higher in the Northeast – but pass-through operational expenses like salaries, leases, and demand response payments to customers without an additional premium. These high returns are approved by utility regulators - and paid for by consumers. This structure creates a clear incentive for utilities to build and upgrade traditional infrastructure projects, rather than pursue non-wires alternatives (NWA), non-pipe alternatives (NPA), or innovation that may be more aligned with societal and climate goals, but not as financially attractive or secure. It is no surprise that utility planning often results in infrastructure that brings the greatest financial returns to the utility shareholders and with which the planners have the most experience.

In general, NWAs and NPAs, particularly those owned by third parties, will always lose under the COSR structure because of three biases inherent in existing incentives:

Incentives favor utility ownership. COSR substantially reduces a utility's incentive to choose a business relationship where they cannot earn capital returns on the asset, whether it's a wire or an NWA, or a pipe or an NPA. When faced with the choice between owning or leasing a resource, such as a battery, utilities are incentivized to choose to own, and earn up to 9% additional returns, rather than sign a lease with no additional returns, even if the lease is the better deal for ratepayers.

Incentives favor avoiding third-party NWAs and NPAs between rate cases. Another factor with COSR structure is that, if a utility can reduce its operational expenses between rate cases, it can save the additional margin as profit, at least until the next rate case adjustment. As such, utilities have another incentive to continue to invest in capital resources, even between rate cases, while keeping operational spending as low as possible – again favoring ownership over leases of NWAs.

Incentives favor longer-term depreciation investments, even for short-term problems. Because utilities earn a return on equity on the undepreciated amount of a capital investment, they have a strong incentive to choose longer-lived investments with longer-termed depreciation periods. This incentivizes choosing a substation or wire over an NWA, as well as making additional investments in pipelines even though climate targets make a 25- or 50-year investment in fossil gas a losing option for everyone except the gas company.

The RESPECT proposal would address these three biases not by working around utilities' incentives to build their business, but by redirecting them toward areas where the energy system needs powerful natural monopolies.

Problem Three

Utilities Will Not Plan Against their Financial Interests

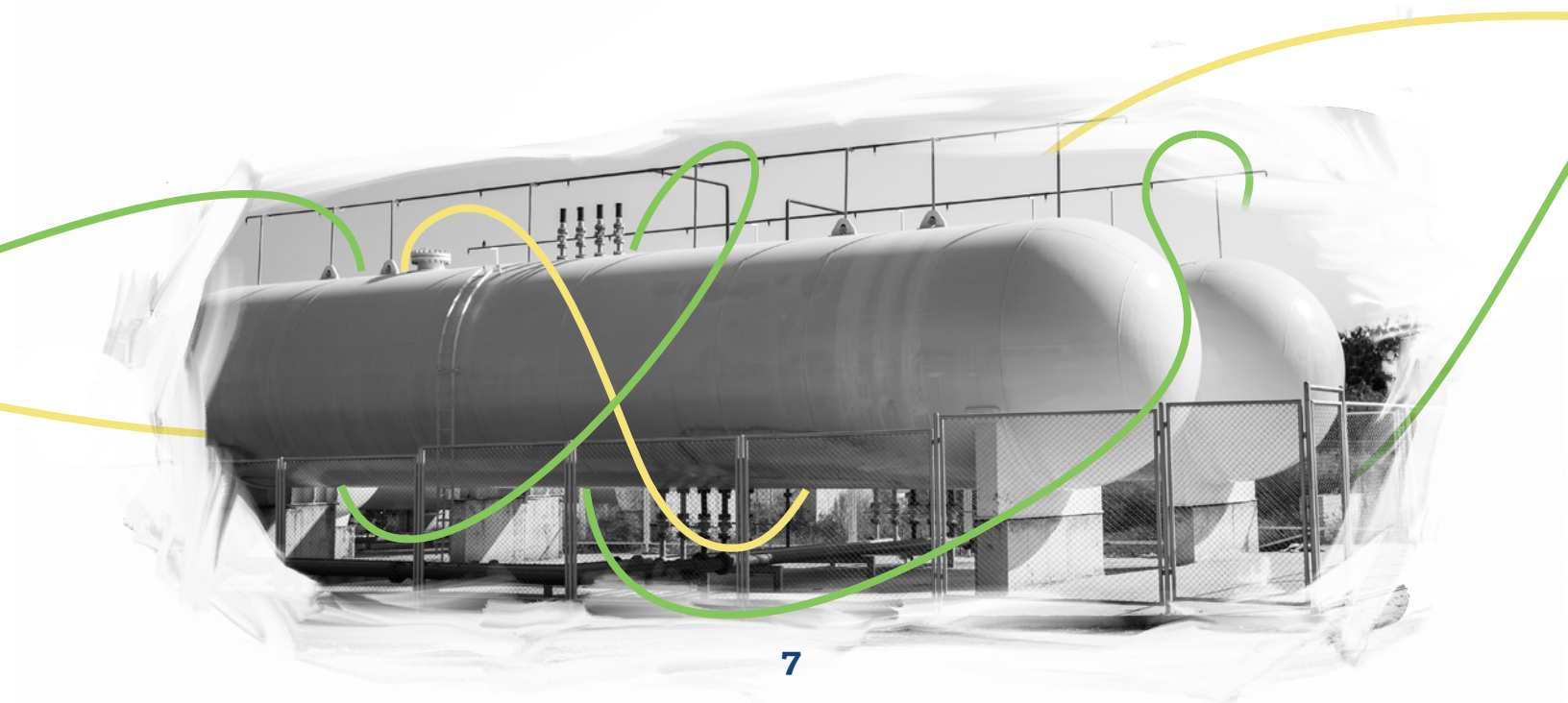
Non-wires alternatives (NWAs), including battery storage, energy efficiency, demand response, and other distributed energy resources, can provide many services to the grid and replace the need to invest in traditional poles, wires, and substations to meet certain transmission and distribution needs. Similarly, non-pipe alternatives (NPAs) like electrification, demand response, energy efficiency, and geothermal resources can be strategically deployed to wind down the use of fossil gas. But these resources must be considered in planning on equal footing to the wires and pipes they replace. Today,, because utility incentives favor investments in infrastructure and fossil-fueled solutions, they are not.¹¹

Current electric utility business models—particularly the difference in compensation that Cost of Service Regulation (COSR) allows for capital expenditures like poles and wires compared to operational expenditures like energy efficiency or leased energy storage—create significant incentives for utilities to avoid planning for the latter.¹² Fossil gas utilities' business models create both incentives against the use of NPAs, and an understandable reluctance to plan for the phase out of the key product they sell, even if it is necessary to reach net-zero emissions targets.¹³ In addition to these financial biases against NWAs and NPAs, the lack of visibility that utility planners have into customer-sited NWAs and NPAs and the perceived uncertainty about whether they will perform as

expected when called upon create additional obstacles to their deployment, and undervalue these alternative resources.

Even utilities that face some performance-based regulation (PBR, an alternative to COSR) will continue to be motivated by similar incentives. Under PBR, regulators set targets for utilities in certain performance areas that can be tied to financial rewards or penalties. While these performance incentives can affect financial returns, and therefore utility investment decisions, to date efforts to implement robust PBR tools that fundamentally alter utility decision-making have not been achieved at the scale and speed needed for rapid emissions reductions and power sector transformation. Even with PBR, the human and corporate inclination to avoid uncertainty would also remain, because the same entities doing the planning will continue to see all planning considerations as a nail and infrastructure solutions as the hammer.

The impact of these financial incentives is significant enough that utility reluctance to embrace NWAs and NPAs cannot be fixed simply through adding monetary incentives—because a utility will never plan against its own financial interests. Instead, we need planning reforms that treat all viable energy resource solutions on a level playing field, without the undue influence of perverse incentives. In other words, planning responsibilities should be placed in a revenue-neutral independent entity.



Acadia Center's RESPECT Approach

Under existing regulation and law, utilities have a monopoly franchise, even while regulators have introduced a smattering of competition, such as allowing third parties to offer distributed solar or energy efficiency and demand response programs. In no other industry would we allow a monopoly to plan behind closed doors and determine for regulators how much of something it (and not its competition) should build—and at returns that far exceed interest rates. Why do we continue to let utilities operate like this?

Acadia Center believes that introducing two significant reforms in utility planning will overcome the dysfunctions caused by silos, utility incentives, and the current market indifference to climate and equity. Under the RESPECT solution, better, non-biased planning will maximize benefits to energy consumers and the grid, and utilities will have clearer pathways to structure their financial decisions and compete in markets.

ACADIA CENTER BELIEVES THAT INTRODUCING TWO SIGNIFICANT REFORMS IN UTILITY PLANNING WILL OVERCOME THE DYSFUNCTIONS CAUSED BY SILOS, UTILITY INCENTIVES, AND THE CURRENT MARKET INDIFFERENCE TO CLIMATE AND EQUITY.

RESPECT reforms would...

- Conduct “all-in” energy system planning that considers supply and demand-side resources; customers’ energy, capacity, and thermal needs; and climate requirements and environmental justice impacts for all fuels across the state.
- Create statewide planning entities that can look for solutions beyond utility boundaries and across fuels, leaving traditional utilities free to focus their efforts on business development in alignment with climate and equity mandates.

Reform 1

Comprehensive Planning

As Acadia Center has demonstrated in its research, the fastest and most cost-effective way to reach our climate goals is to electrify our transportation and building heating sectors and decarbonize the grid through use of both large-scale renewables and distributed energy resources.¹⁴ But to electrify everything, we will need a modern grid, updated policies, and all-encompassing planning, so that we can be sure our investments will hold up to future demands, without needing to rebuild with each new climate policy or more stringent target. We must also ensure that our most vulnerable populations are not left with the bulk of the expense for either legacy systems or new investments.

In general, distribution system plans are based on horizons of 5-10 years in the future under the assumption that things stay mostly the same. Utilities spend millions of dollars annually on infrastructure for reliability but have not yet fully incorporated the changes that will be necessary as whole neighborhoods start to deploy plug-in EVs, heat pumps, energy storage, or deep weatherization; as solar arrays are put on all appropriate open spaces and rooftops; or as grid operators start calling upon behind-the-meter storage as a utility resource.

The planning that the Northeast needs for its electrified future is far more integrated and ambitious. It needs to consider all fuels at the same time and envision how we can create a strategic retreat from gas infrastructure without leaving disadvantaged communities holding the bag. It needs to consider both generation and transmission, as well as load flexibility and behind-the-meter DER. It needs to consider electrification of buildings and transportation alongside environmental justice and climate requirements; interconnection needs at the same time as electrification; smart meters at the same time as self-healing circuits; phase-out of fossil fuels at the same time as encouraging local clean energy resources; reliability at the same time as resiliency; and people at the same time as profit. The better that electric and gas distribution grid planning can anticipate the breadth of electrification and DER needed to hit our climate goals, the faster and easier consumers can interconnect and take control of their energy use. Comprehensive planning will also reduce future costs compared to replacing the same infrastructure every few years as power flows change.

Under Acadia Center's RESPECT reforms, such planning would take place as a centralized state-wide plan (i.e. moving beyond utility boundaries), involve stakeholder input, and incorporate

consideration of all of the energy concerns facing the state or region.¹⁵ As an example, planning for grid modernization investments in conjunction with electrification of buildings and transportation would enable investment in feeders, automation technologies, and sensors that can support full electrification, without needing to wait for upgrades or rebuild the same circuit multiple times as more demand or DERs come online. A coordinated approach would also allow phased buildouts, simultaneous achievement of climate, economic, energy, environmental, and equity objectives, and integrating load flexibility from the start.

Comprehensive planning would enable more sensible solutions to energy system challenges. An ongoing gas leak, for example, could be addressed not just through temporary patches and throwing more money in the ground, but by electrifying and weatherizing substandard housing that uses the gas, automating demand response capabilities, and integrating community solar and storage to provide resiliency and manage variability in voltage. On a larger scale, the distribution-side gas system could be strategically decommissioned, with some areas tagged for electrification with air source heat pumps, others for redevelopment with thermal microgrids, and, where necessary, decarbonized fuels carried through a limited network of pipes to serve industries and critical infrastructure that cannot be electrified. Such comprehensive and transparent planning would also minimize future uncertainty and make investment decisions and approvals faster and easier, as they are all part of a unified plan.

A comprehensive approach to planning would also improve equity outcomes. For example, studies show that a relatively small percentage of homes in the Northeast emit a disproportionately large share of residential emissions, and that low-income communities are disproportionately exposed to indoor air pollutants.¹⁶ By targeting electrification and weatherization programs towards these high emitters while simultaneously decommissioning the gas system and eliminating delivered fuels, a planning entity would be better positioned to deliver greater emissions reductions and health improvements.

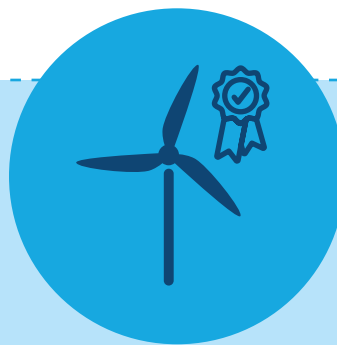
Reform 2

Separate Planners and Owners

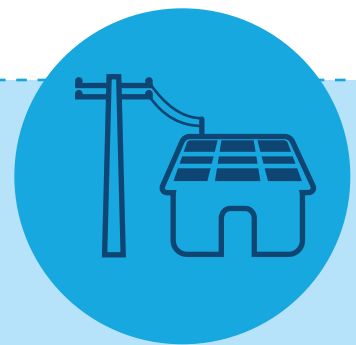
Together with the centralization and coordination of planning processes discussed under Reform 1, the second piece of Acadia Center's RESPECT solution proposes a fundamental restructuring of the regulated utility. Rather than the utility conducting planning, owning the infrastructure to meet system needs, investing in energy supply and DER, and acting as the load serving entity, Acadia Center proposes that those responsibilities be separated between different entities. For the purposes of this framework, we will call those entities:



1. THE PLANNING ENTITY



2. THE OWNING ENTITIES



3. THE NATURAL MONOPOLY ENTITY

The Owning Entities and the Natural Monopoly Entity could be corporate affiliates but need not be related.

THE PLANNING ENTITY would do just that – plan for the future of the system. The Planning Entity would be a new quasi-agency, non-profit, or benefit corporation established for the legislatively mandated purpose of mitigating and equitably adapting to the climate crisis while ensuring reliable systems, with a focus on transparency, rigorous public review, and optimizing service for customers.¹⁷ This neutral entity would answer to state regulators, call on a variety of expert resources, and span beyond the existing boundaries of current electric and gas utilities.¹⁸ A stakeholder council could be established to develop and evaluate metrics, facilitate input on utility reporting requirements, distribution planning inputs and assumptions, cost-effectiveness methodologies, and project prioritization.¹⁹

Using long-range planning that considers electrification of heating and transportation, phase-out of fossil fuels, integration of large-scale and distributed renewables, climate targets, environmental justice concerns, and the need for a portion of load to be flexible enough to respond to intermittent resources, the Planning Entity would identify upcoming distribution needs. The Planning Entity would create markets or other processes to solicit solutions and select projects that meet key criteria – including grid, consumer, equity, environmental justice, and climate objectives. While competitive processes would, for the most part, be necessary for developing solutions under this model, some distribution needs (e.g. meters, local poles and wires, and dispatch

of resources) would still benefit from being served by a natural monopoly and could be assigned directly to the Natural Monopoly Entity, described below. By establishing an entity committed to comprehensively planning for the build-out of DER and the retreat from fossil fuels that are needed to meet state climate goals, interconnection processes would be streamlined, eliminating the challenges that result from utilities overseeing a slow piecemeal approach that considers only one application or pipeline replacement at a time.

While the Planning Entity would have responsibility for ensuring a safe and reliable system, it would not have a financial stake in the outcome—unlike the framework of today. Such a division would incentivize the Planning Entity to invest only as much as necessary to ensure resiliency and reliability while also laying the groundwork for the clean energy future. By removing from the equation the financial incentives that bias utilities toward traditional utility-owned projects, this new Planning Entity would be well-positioned to seek the most innovative and effective solutions. By taking planning beyond traditional utility boundaries, the Planning Entity could also effectively oversee the need to electrify, modernize the grid, and transition away from fossil gas and other fossil fuels. This separate Planning Entity would be better positioned to take a longer-term view of grid needs as the region decarbonizes its energy supply and electrifies heating and transportation in line with climate goals for 2050 and beyond. Without the financial pressures faced by electric and gas utilities today, the Planning Entity could pursue more strategic opportunities, such as phased sizing of infrastructure investments to meet the clean energy needs of 2040 now, rather than aiming for only 2025 and continually re-sizing after a new need arises. Moreover, by removing the planning function from utilities, states would be empowered to assume more direct control over the decarbonized future and need for resiliency in the energy system.

THE PLANNING ENTITY WOULD BE CREATED WITH THE GOAL OF HELPING TO MEET STATE GREENHOUSE GAS EMISSION TARGETS AND PRIORITIZING ENVIRONMENTAL JUSTICE IN ITS LONG-TERM PLANS.

WORKING BEYOND UTILITY BOUNDARIES AND WITHOUT FINANCIAL INCENTIVES, THE PLANNING ENTITY WOULD BE WELL-POSITIONED TO SEEK THE MOST INNOVATIVE AND EFFECTIVE SOLUTIONS.

The Planning Entity would be created with the goal of helping to meet state greenhouse gas emission targets and prioritizing equity and environmental justice in its long-term plans, unlike distribution utilities today, which are generally not required to consider climate and environmental justice impacts in their decision-making. The Planning Entity's duties could also include keeping investment in the unified energy system steady over time, reassuring the financial markets that competitive entities serving the grid are a safe investment.

The Planning Entity could employ processes that are more transparent and enhance participation of third parties and customers, including: providing transparent data and information access, and requiring the same from the natural monopoly entities; using, where appropriate, competitive procurements to select solutions to system needs; and collaborating with other planning entities, local jurisdictions, and regional organizations to maximize the benefits of supply and demand-side resources. In the process of legislatively disentangling traditional distribution utility functions, legislators could require existing utilities to provide fully transparent access to granular energy usage data

to consumers and third parties while maintaining privacy. A separate Planning Entity that is explicitly beholden to policy goals could allow for greater stakeholder participation and transparency.

THE OWNING ENTITIES would be the winners of the Planning Entity's competitive procurement. An Owning Entity could be an evolution of a traditional utility (which could also become a natural monopoly entity, below), an aggregator, or a third-party developer. These Owning Entities would design, build, own, and operate the infrastructure or DER assets—or make their own arrangements to contract out such responsibilities. Payment to the Owning Entities would be the lower of the contract price or, to incentivize additional savings to consumers, the actual price plus a shared savings mechanism. By separating

planning from owning, this can more fully harness the benefits of competition and the innovation of market actors. Owning Entities who are not traditional utilities would also be able to leverage incentives and subsidies from related fields like health, housing, and transportation, and can provide solutions that meet multiple societal needs, often at reduced costs if they are planned together.

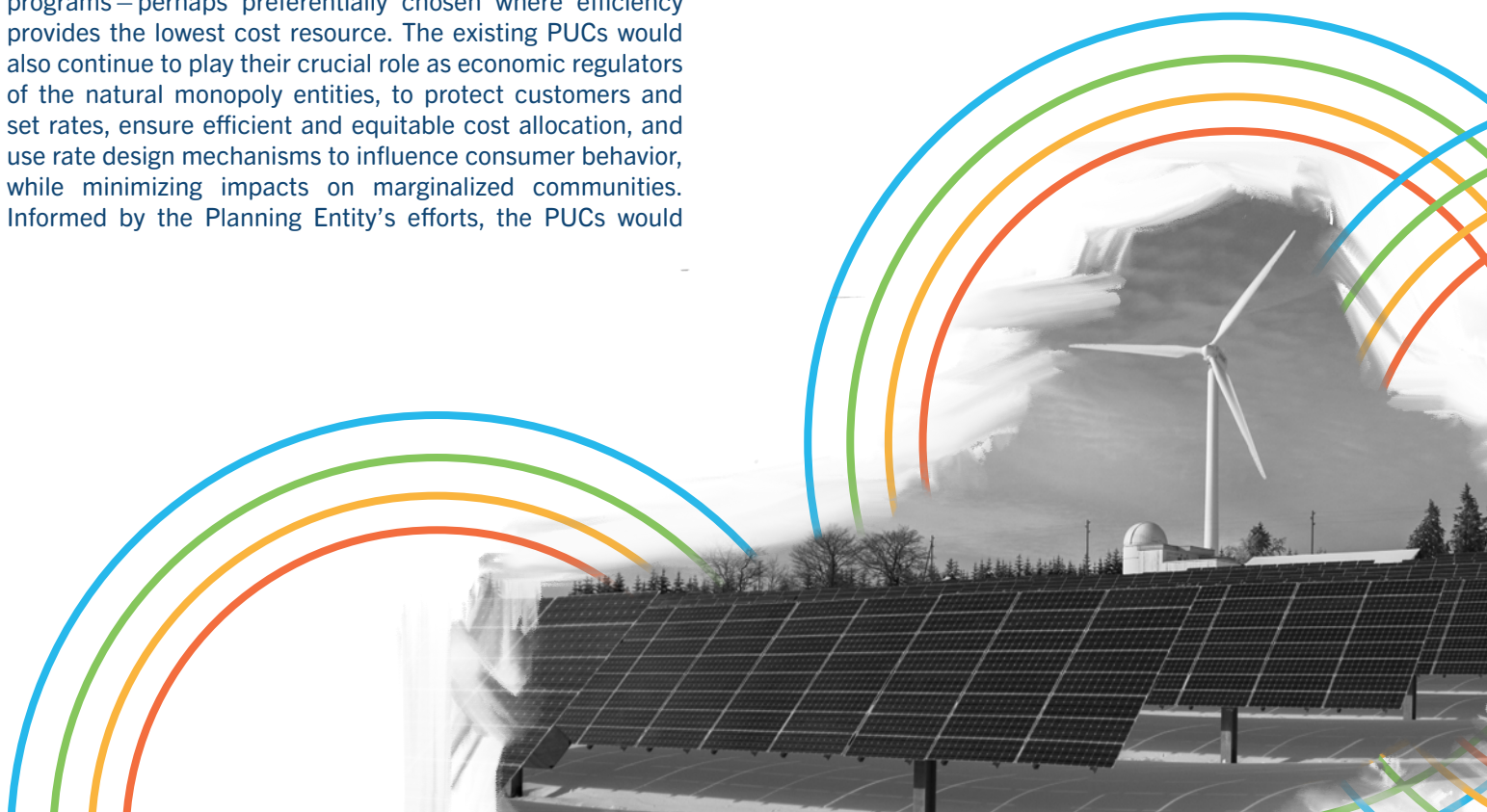
THE NATURAL MONOPOLY ENTITY, a role presumably filled by the existing distribution companies and community owned utilities, would operate the legacy and new pipes and wires, billing system, and customer interfaces, and invest as necessary to maintain their safe operation, unless replacement with an alternative is determined to be superior by the Planning Entity. Given the nature of these systems, a monopoly ownership model would continue to maximize value for ratepayers by avoiding unnecessary and costly duplication. The Natural Monopoly Entity would also dispatch the procured NWAs and NPAs as needed – both its own, as an Owning Entity, and those of other Owning Entities selected by the Planning Entity. This would allow the distribution utility to focus on what it does best – operating a reliable power and heat system, serving customers, and running its section of the grid with autonomy. While the costs of future grid resources will be kept low due to competition and reductions in the amount of capital that a Natural Monopoly Entity will need to invest, the existing utility debt must still be paid off. As such, a transition to performance-based regulation for the Natural Monopoly Entity could result in significant improvement by using performance incentives to encourage desired outcomes.

OTHER ENTITIES: Within this new framework, other relevant players could integrate smoothly. For example, a state-wide energy efficiency administrator could continue to run programs – perhaps preferentially chosen where efficiency provides the lowest cost resource. The existing PUCs would also continue to play their crucial role as economic regulators of the natural monopoly entities, to protect customers and set rates, ensure efficient and equitable cost allocation, and use rate design mechanisms to influence consumer behavior, while minimizing impacts on marginalized communities. Informed by the Planning Entity's efforts, the PUCs would

oversee implementation of long-term utility business model transitions, including the future of the fossil gas utilities.

One key advantage of separating these functions would be to provide traditional utilities with a clearer sense of where they can look for business opportunities. By removing the comprehensive planning functions for utilities and enabling them to focus on project development and consumer-facing functions, utilities, and their board of directors, could seize productive opportunities instead of devoting resources to pushing back against grid modernization efforts or business model reforms that they perceive as threats. RESPECT reforms could also help reduce utilities' business risks in that their proposed investments would be a response to the Planning Entity's approved plans, increasing the likelihood of regulatory approval.

While the exact structure and dynamics could take multiple forms the most important feature of this new framework would be the separation of primary planning, owning, and natural monopoly functions between distinct entities. Only the separation of planning and ownership is strong enough to overcome existing utility incentives toward infrastructure investments and away from NWA, NPA, third-party ownership, and phase-out of fossil fuel use. Allowing planning decisions to be made outside of the influence of traditional utility incentives would far better align with long-term consumer and climate needs, as well as allow factors like environmental justice to drive decisions. It would reduce conflicts of interest within the existing grid planning and management process. And it would lead to planning decisions that better prioritize consumer interests, incentivize greater innovation, and pursue the changes that are needed to meet our climate targets.



A black and white photograph of a city street scene. In the foreground, there's a brick building with several windows. A white van is parked on the street. In the background, more buildings and trees are visible. The image is used as a background for the text overlay.

How RESPECT creates better outcomes for customers and the environment:

CONSIDER A SITUATION WE MIGHT FACE TODAY. A low-income neighborhood has two serious problems; first, a gas pipeline has been leaking methane for years. Separately, the community's electric transformers are aging, causing concerns over power reliability and preventing clean energy investments, such as rooftop solar, electrification of building heating, or electrifying the diesel buses that idle at local stops.

UNDER CURRENT UTILITY REGULATION, the gas utility would respond to the leak by upgrading the pipeline at considerable expense, paid by ratepayers over the next 40 years, locking them into long term sunk costs and continuing reliance on gas. There is no consideration of whether efficient electric heat pumps or geo-microdistricts are a better option. Meanwhile, the electric utility (a different company, even if a corporate affiliate) upgrades the transformer, but is not allowed to recover the expenses for one large enough to allow electrification of local heating and transportation, as that use may or may not materialize. Ratepayers would be on the hook for multiple sets of upgrades to the transformers, needed as more electrification comes online, while also paying high gas bills caused by the replacement pipe. There has been no comprehensive look at how investments in the gas and electric systems are interdependent, how an array of clean energy options can replace fossil gas, or what solutions might be best for the community and their needs.

UNDER RESPECT, THE SOLUTION WOULD WORK BETTER FOR CONSUMERS AND THE ENVIRONMENT. The state Planning Entity proactively identifies the neighborhood as a priority for electrification, based on its environmental justice characteristics, the age of existing infrastructure, and the potential to reduce emissions. The Planning Entity issues a request for proposed solutions. Responses from project developers include proposals to weatherize and electrify building heating, put in fast chargers for electric buses, install community rooftop solar and storage, and build new, efficient, all-electric affordable housing and commercial space. The combined package leverages federal tax credits, state efficiency incentives, clean tech grants, affordable housing subsidies, and commercial development investments to cost less to ratepayers than the traditional solution. The Natural Monopoly Entity—the electric and gas utility—safely decommissions the gas pipe, lowering its operations and maintenance costs, upgrades the electric transformers only once, and continues to provide electricity to the neighborhood, dispatching resources to balance supply and demand. The utility is back to its core business of providing safe, reliable service to its customers, knowing its investments are secure.



Conclusion and Next Steps

The Northeast faces significant hurdles as it seeks to decarbonize rapidly in the next decade. Given the need to accelerate meaningful progress, we must transform the role of distribution utilities and ensure that they are well-positioned to support decarbonization efforts, not slow them down. States have an opportunity to overcome barriers that have delayed progress in decarbonizing the region for years. It is with that perspective in mind – and a recognition that we must align the regulatory system and utility functions with climate and environmental justice goals – that Acadia Center offers the RESPECT proposal. Under Acadia Center’s proposed RESPECT framework, the northeast states would reform utility planning to introduce two significant shifts:

COMPREHENSIVE PLANNING.

Conduct “all-in” energy system planning that considers supply and demand-side resources; customers’ energy, capacity, and thermal needs; and climate requirements and environmental justice impacts for all fuels across the state.

SEPARATE PLANNERS AND OWNERS.

Create statewide planning entities that can look for solutions beyond utility boundaries and across fuels, leaving traditional utilities free to focus their efforts on business development in alignment with climate and equity mandates. By separating the entity that conducts planning from the entities that own the grid and energy systems RESPECT avoids conflicts and clarifies roles.

By removing the incentive structures that reinforce use of long-lived fossil fuel infrastructure, the Northeast can make energy system planning more responsive to consumer needs, and maximize the benefits to energy consumers and the grid. By creating a unified plan for the future energy system that benefits everyone, investors, owners, and traditional utilities can all be more secure in their investments.

The reforms within the RESPECT framework are intended to prompt discussion and focus attention on long-term structural reforms to the utility regulatory model. Acadia Center proposed an early iteration of RESPECT concepts that were discussed and supported by stakeholders in

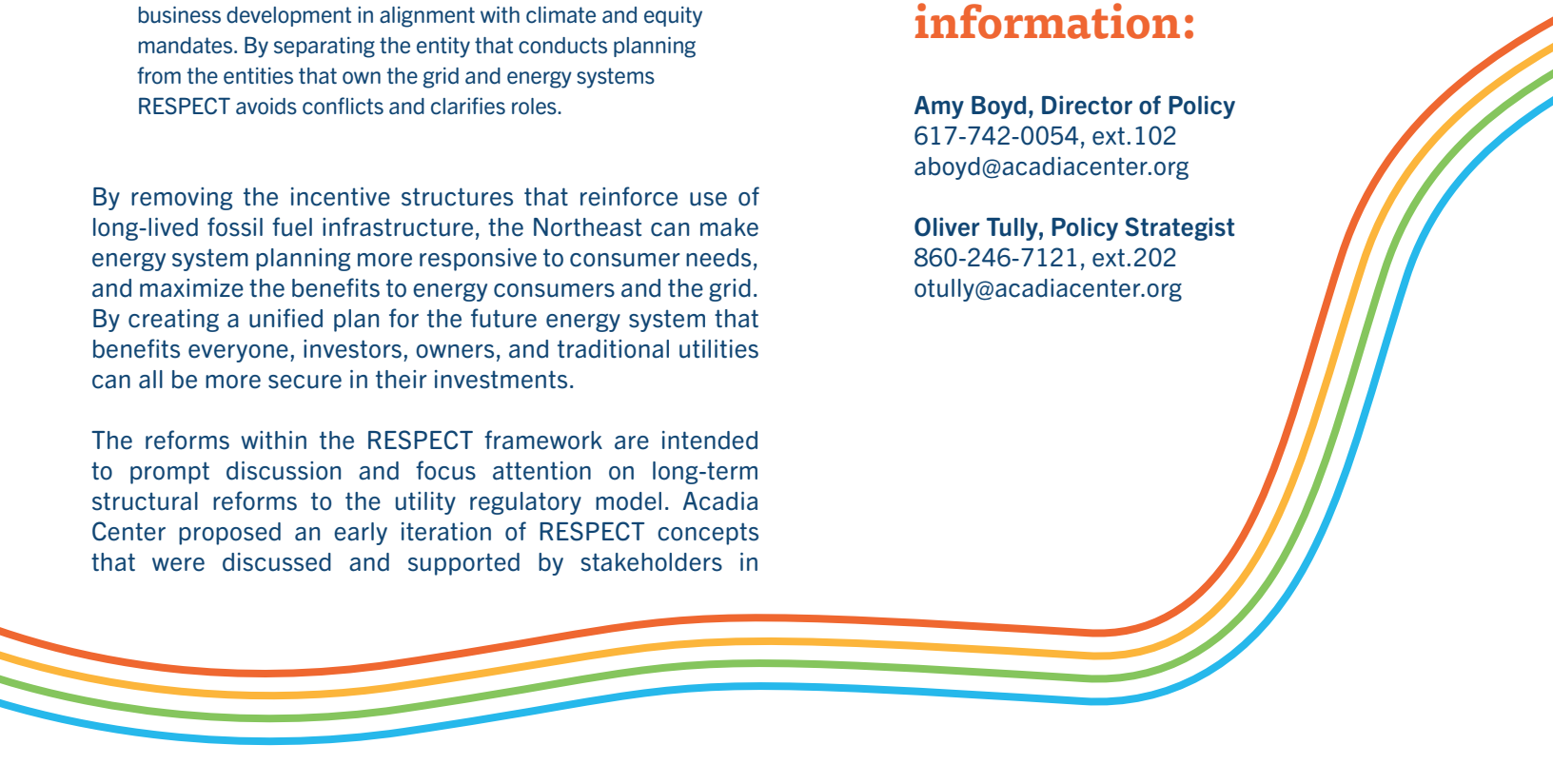
the Maine Utility Regulatory Reform & Decarbonization Initiative (MURRDI) process in 2021. MURRDI incorporated Acadia Center proposals into its final recommendations to “investigate, adopt, and implement an all-encompassing, long-term, strategic grid planning process,” and agreed that “utilities play a critical role but should not lead the planning process given the long-term planning horizon and desire to holistically integrate generation and DERs”.²⁰

While Acadia Center’s RESPECT framework proposes common sense solutions, they are far-reaching, and would fundamentally restructure the business models of utilities in the Northeast – again. Such a transition requires significant stakeholder engagement and input. Acadia Center invites comments and partnership in exploring these issues with stakeholders, experts, utilities, and regulators.

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Endnotes

- 1 See IPCC Sixth Assessment Report, Working Group I Report, Climate Change 2021: the Physical Science Basis (Aug. 2021), available at <https://www.ipcc.ch/assessment-report/ar6/> (providing new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finding that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach).
- 2 Wholesale electricity markets and governance structures within RTOs like ISO-New England must evolve to advance climate and equity goals and accelerate the transition off of fossil fuels.
- 3 The EIA found that annual capital investment by distribution utilities has doubled in the last two decades, with spending growing fastest in older more populated systems like the Northeast. <https://www.eia.gov/todayinenergy/detail.php?id=36675>
- 4 https://362kp444oe5xj84kkwj322g-wpengine.netdna-ssl.com/wp-content/uploads/2015/11/Appendix-to-MA-Utilities-Joint-RFP-Comments_11122015.pdf
- 5 Two examples of how such overspending was avoided are the Maine Boothbay Harbor NWA (1.8 MW of demand reduction provided at one-third the cost of infrastructure solution, then discontinued as predicted load growth did not occur); and the Rhode Island Tiverton/Little Compton NWA (1 MW of EE and DR to defer \$2.9M upgrade to substation but discontinued as predicted load growth did not occur). SEPA et al, Non Wires Alternatives: Case Studies from Leading US Projects, p 59-61, 65-66, available at: <https://sepapower.org/resource/non-wires-alternatives-case-studies-from-leading-u-s-projects/>
- 6 See <https://www.greentechmedia.com/articles/read/national-grid-releases-latest-results-on-distributed-solar-study>
- 7 Compare AMI Proposal of UI (July 30, 2020) with AMI Proposal of CL&P (July 31, 2020), PURA Docket 17-12-03 RE02.
- 8 Acadia Center defines equity as "The guarantee of fair treatment, access, opportunity, and advancement while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups. The principle of equity acknowledges that there are historically overburdened, underserved, and underrepresented populations, and that fairness regarding these unbalanced conditions is needed to assist equality in the provisions of effective opportunities to all groups." From "Awake to Woke to Work: Building a Race Equity Culture", Equity in the Center, 2019. Acadia Center defines environmental justice as the principle that "all people and communities have the right to equal environmental protection under the law, and the right to live, work, and play in communities that are safe, healthy and free of life-threatening conditions." From "EJ Definitions" <http://www.columbia.edu/cu/EJ/definitions.html>. Downloaded 9/2020.
- 9 These gaps are evident in Eversource's System Planning Memorandum, submitted in DPU 20-75. In Eversource's proposal to address a range of distribution system planning challenges in the coming year, DER interconnection and reducing emissions take a back seat to the utility's traditional responsibilities. Equity and environmental justice are absent from Eversource's listed distribution system planning objectives (Eversource, D.P.U. 20-75 System Planning Memorandum, Attachment 1, page 4). Eversource also argues that neither distribution system upgrades that are part of its base load forecasts, nor the development or review of system planning criteria, should be subject to a stakeholder review process. (System Planning Memorandum, page 1 and 26).

- 10 Two notable exceptions to this are Maine and Massachusetts where Acadia Center was a part of passing legislation in 2021 to amend the mandates of the PUCs to include greenhouse gas reductions and equity. Whether the implementation of these laws results in progress on environmental justice and climate remains to be monitored.
- 11 For a case study on two such examples, see Acadia Center's Incentives for Change, available at <https://acadiacenter.org/document/incentives-for-change-why-utilities-continue-to-build-and-how-regulators-can-motivate-them-to-modernize>.
- 12 The same business model incentives highlighted in this piece are at play in transmission development, too. https://acadiacenter.org/wp-content/uploads/2016/06/AC_transmissionmemo_spreads_finalforweb.pdf
- 13 See Acadia Center, "Fossil Gas, A Bridge Too Far." <https://acadiacenter.org/fossil-gas-a-bridge-too-far/>. See also Acadia Center, "The Declining Role of Natural Gas Power in New England" <https://acadiacenter.org/document/the-declining-role-of-natural-gas-power-in-new-england/>
- 14 See [**EnergyVision 2030**](#)
- 15 The state-wide entities would also integrate planning for municipal utilities and interact with, or, depending on reform efforts, possibly replace ISO-NE planning or other regional planning entities.
- 16 See <https://www.synapse-energy.com/about-us/blog/which-buildings-are-highest-carbon-emitters> and <https://www.ncbi.nlm.nih.gov/books/NBK44192/>
- 17 One key difference between RESPECT and NY REV's transformation of existing utilities into Distributed Services Platforms is our assignment of the data services and planning functions to this neutral entity, removing any potential incentives from ownership of either new or existing grid resources.
- 18 The Planning Entity could also be created by restructuring an existing state agency, such as the public utilities commission, but the creation of a new entity would allow a specifically climate-driven mission, separate from the roles agencies already play. Integration of the Planning Entity with regional structures like ISO may also be possible.
- 19 Similar to the Grid Modernization Council approved by New Hampshire PUC in Order 26,358 (suspended since July 2020).
- 20 The group included experts and senior officials from state agencies (including Governor's Energy Office, Efficiency Maine Trust, the Public Advocate, and the Commission), Maine's two investor-owned utilities (CMP & Versant), representatives of the state's two largest cities, and several renewable and environmental companies and organizations. Final report, April 2021, at 15-17, available at: <https://www.betterenergy.org/wp-content/uploads/2021/04/MURR-DI-Stakeholder-Process-Summary.pdf>