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Advanced Building Policy

Getting to Zero Forum zLab Workshop Summary

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Introduction

This report summarizes discussions and key insights generated during the Advanced Building Policy zLab workshop focused on existing building policy solutions on October 9, 2019, during the annual Getting to Zero Forum in Oakland, CA. Hosted by Rocky Mountain Institute (RMI), New Buildings Institute (NBI), and Natural Resources Defense Council (NRDC), this inaugural event was designed to innovate and accelerate the transformation of the built environment. The Advanced Building Policy session ran concurrently with two others: one focused on Building Electrification and another on Grid-Interactive Efficient Buildings.¹

The 30 participants who attended the Advanced Building Policy zLab largely consisted of representatives from city governments – many of which are involved in the [American Cities Climate Challenge](#) – and their partner organizations, including Institute for Market Transformation (IMT), working towards developing performance standards for existing buildings. The objective of the half-day session was to facilitate peer learning and group problem solving to break down barriers and accelerate broader adoption of this increasingly important policy lever.

The session was kicked off by three case study presentations, where expert guest speakers from Washington State, Washington DC, and Los Angeles shared first-hand insights, lessons learned, and active questions and challenges for the policies passed or underway in their jurisdictions. With that foundation, participants then broke up into four focus areas (described below) to identify high-priority barriers and co-develop strategies and solutions. Key takeaways from each focus area are summarized and additional resources are provided for the benefit of other jurisdictions that may be considering such a policy.

To preserve confidentiality, city-specific quotes or commitments and participant names are not disclosed.

Context

Building operations are responsible for [31%](#) of all US greenhouse gas emissions (with electricity sector emissions distributed), and an estimated [two-thirds](#) of the buildings that exist today will still be standing by 2050. To achieve climate targets, the pace and scale of efficiency and electrification retrofits in existing buildings must increase dramatically. Because voluntary market-based programs and incentives have not been sufficient, more state and local governments are looking to implement building performance standards for existing buildings in order to drive progress.

Existing building performance standards can establish thresholds for energy use and/or carbon emissions (e.g. based on energy use intensity or EUI, EnergyStar ratings, or energy use converted to CO2 equivalent emissions). While there are only a few precedents nationwide to date, typically these policies apply to commercial and multifamily buildings over certain sizes (e.g. 10,000 square feet). When a building falls below a certain performance threshold, it triggers some kind of regulatory action. This

¹ See <https://gettingtozeroforum.org/zlabs/> for more details

could vary from something like simple owner notification to required retrocommissioning or audits to required energy retrofits to some kind of penalty such as fines. Jurisdictions have a wide variety of actions that they can take with a wide range of impact. Performance standards can address the highest-consuming or emitting buildings initially, with compliance thresholds tightening over time to drive deeper reductions in energy use or carbon emissions. They can also address the general population of existing buildings with one set of performance standards while setting a separate set of performance standard for recently constructed buildings that should be delivering much better performance than the general population of buildings.

There are a number of key considerations and challenges to be taken into account when designing and implementing this type of policy. The zLab organized into four main focus areas that participants divided themselves into to guide the discussions and activities:

1. Measurement & Metrics: example topics include selecting energy versus carbon emissions metrics, setting performance thresholds for different building types, ensuring adequate data for measuring compliance and tracking progress over time, prescriptive versus performance pathways, etc.
2. Equity & Workforce Development: example topics include ensuring requirements are not overly burdensome on building owners and/or renters (especially lower-income) or disproportionately affect any particular population, design strategies to support affordability, workforce training and inclusion, ensuring adequate workforce supply, etc.
3. Incentives & Triggers: example topics include encouraging early adoption and compliance, phasing compliance deadlines versus transactional triggers (e.g. time of sale or rental), financial strategies to offset and/or spread costs to building owners, etc.
4. Stakeholder Engagement: example topics include planning for likely concerns or pushback from various stakeholder groups, framing messaging to communicate the policy to affected groups, developing value propositions, sequencing the stakeholder engagement process, etc.

Strategies & Solutions

Each group of participants first surfaced and prioritized the top three market barriers within its focus area. With those clearly defined, each group then brainstormed and collectively discussed solution strategies to address them. The recap below is not intended to be an exhaustive list of possible barriers and solutions with respect to this type of policy; instead, it is intended to offer up suggestions and considerations to policymakers considering an existing building performance standard.

Measurement & Metrics

- Metric Selection: The group determined the highest priority barrier within this category to be deciding which metric(s) to rely on for proving compliance with the standard. There are a range of metrics to choose from (e.g. energy use intensity, EnergyStar scores, annual tons of CO2 emissions per square foot, etc.), and jurisdictions should select metrics that are aligned with their decarbonization goals and other policies. Strategies surfaced by the group included choosing multiple metrics or a metric that combines multiple factors; focusing on energy performance or energy efficiency (assuming conversion to emissions can be relatively straightforward math performed separately); and improving the EnergyStar metric to address local conditions and needs.
- Building Performance Ranges: Another top barrier identified was a need for useful metrics that can account for wide ranges of building performance due to multiple independent factors (e.g. weather, economic conditions, operating schedules, etc.). To address this, the group proposed developing and implementing a customized compliance pathway (e.g. similar to the approach used by San Francisco), developing a tenant and use-space level ENERGY STAR , as well as developing and implementing prescriptive compliance pathways for smaller buildings.
- Data Quality: The group also agreed on the importance of collecting and delivering reliable and consistent building performance data for reporting purposes. To this end, the group proposed using incentives for “above standard quality” data and penalties for “below standard quality” data, providing education and training to affected building owners and operators for best practices in data collection and reporting (e.g. via ENERGY STAR Portfolio Manager), and/or working with state agencies, such as public utilities commissions, to incorporate into state legislation a mandate for energy utilities to provide whole-building energy consumption data to affected building owners in cases where tenants pay the utility bill.

Equity & Workforce Development

- Process & Procedural Equity: The group identified as the top barrier in this category the challenge of incorporating equity into the process of stakeholder engagement (i.e. before the policy is passed) and the need to build equity into the structure of the policy (e.g. through community advisory groups) to ensure implementation doesn’t exacerbate existing inequities and result in displacement of vulnerable populations. To achieve these ends, the group discussed solution strategies such as using trusted convenors, going where people are (versus expecting them to come to organized meetings), and proactively reaching out to impacted communities and smaller groups. The group also aligned on the importance of ensuring sufficient funds are budgeted by the city government to conduct extensive outreach and to help those with limited resources participate in the process (e.g. smaller building owners). On the implementation side, the group agreed on the importance of being very intentional not to enforce harsh fines on buildings that may not have the resources (including avoiding fixed fee structures that affect owners of different means differently), and also to use any fees accrued to support underserved communities and buildings.

- Upfront Costs (Particularly for Rented Properties): Another significant barrier inherent in existing building performance standards is the upfront cost burden for upgrades, if and when required. The group recognized that lower-income owners and affordable housing in particular need technical assistance and capacity (and/or an alternative compliance pathway) – that it is not enough just to make incentives available. When it comes to incentives, the group proposed that streamlined programs providing whole-building upgrades would be significantly more effective than traditionally piecemeal utility incentives (e.g. Massachusetts’ LEAN Multifamily program as a model). Alternatively, data from a building performance standards program can be leveraged to prioritize utility program outreach to the buildings in greatest need of assistance because of poor performance - which are more likely to be serving disadvantaged communities. The group also discussed the potential to collect non-compliance fees to create a fund that can support upgrades in particular for disadvantaged communities and building owners. Policymakers should also consider building in ways to protect renters in affected buildings, limiting the ability of building owners to pass through the costs of upgrades to tenants beyond the savings achieved.
- Workforce Impacts: The third priority barrier related to addressing workforce development and training at the scale needed to implement required retrofits as well as addressing potential job losses from electrification. The group focused on the pension issue – of what is needed to support workers in the fossil fuel industry to provide equivalent job quality in the clean energy industry (i.e. developing a value proposition that is as or more compelling). Another solution idea was to partner with universities or job think tanks - not just to analyze job creation potential but to dig into and analyze types of jobs, qualities of jobs, and also potential transition needs from gas to electric. Lastly, the group agreed on the need to reach out to and develop relationships with labor proactively and early on in the process; often mayors and city councils have these relationships, and while this is typically newer territory for sustainability departments, it can be mutually beneficial.

Incentives & Triggers

- Costs: The group identified different types of costs and different ways that cost is a barrier. The low cost of natural gas and the perceived higher first costs of all-electric buildings are near-term barriers to electrification for building performance standards that incorporate a carbon metric. While all-electric buildings are generally cheaper to construct than mixed fuel on a fixed cost basis, electrification retrofits typically involve much higher first costs than a gas-for-gas retrofit, especially if there are electrical capacity issues. The split incentive issue further disincentivizes efficiency and electrification because owners bear the costs while tenants reap the benefits. The group identified that incentives, pilot projects, and utility engagement are potential solutions. Potential incentives include: utility cash incentives, tax-based penalties (a negative incentive), tax credits, development bonuses, fast tracking, time-of-use energy pricing, and grid integration pricing (for automated demand response and load flexibility), and funding incentives through

penalties. More strategic incentives include offering incentives only to poor performers to eliminate free riders (i.e. first time low-performers are eligible for an incentive program, second-time low performers get a penalty for their poor performance). The group aligned around a significant need for financing alternatives, especially on-bill financing, and the need to phase out incentives over time, recognizing that the adoption curve enters a period where those who have not taken the incentives just need to be penalized. The group also suggested that pilot projects and utility engagement can help inform expected costs, reduce the “risk premium”, and can shape and increase adoption of incentives.

- **Market Resistance:** The group identified several aspects of market resistance including a lack of education and funding for owners and developers, practitioners, policymakers, and contractors to embrace new technologies or change their standard processes or business models. The real estate industry can be hesitant to adopt policies since it often markets gas amenities as value-add. The group identified that education for consumers is critically important to increase awareness, overcome fear of the unknown, and support market demand. Education is also needed for the real estate industry: realtors, developers, contractors, etc who need to become more familiar with the technologies and features that enable high performance buildings. Another reason for market resistance is that the market generally does not, or does not sufficiently, value sustainability. The group noted that one thing that would have a huge impact on market valuation would be to insert into the market the idea that “Class A” real estate *must* be sustainable, that lack of energy efficiency and other sustainability features means that a building will be relegated to “Class B”.
- **Metric Development:** To create quality metrics, policy makers should resolve barriers to obtaining quality and timely data about building performance and identify quality control and analysis procedures. Relevant metrics include: Site energy, source energy, energy cost, carbon, GHG, operational and embodied carbon, and each of these metrics could have different impacts on the policies that can be chosen and the goals that can be pursued. For example, an energy cost metric favors cheap natural gas and will therefore not drive carbon reductions as much as source or site energy. Likewise, a carbon metric will drive efficiency more with a more carbon-intensive energy mix than a less carbon-intensive energy mix (e.g. a cleaner grid with higher renewable supply). The group also noted the delay between monitoring and reporting means that all benchmarking data is lagging and may not support timely policy decisions.

Stakeholder Engagement

Key challenges under this topic included equitably identifying stakeholder groups that need support and engagement the most, developing core messaging, and tailoring the engagement process to resonate with stakeholders and follow through on equitable policy design. To address these, the group proposed several strategies including leveraging data analysis to determine which stakeholders cause the biggest impacts and are the most impacted, developing value propositions specific to different audiences and keeping messaging simple, and putting adequate financial and other resources into the design and

execution of the stakeholder engagement process to ensure broad and diverse coverage with trained facilitation. Policymakers can create accountability through transparency and follow-ups with all stakeholders. This research should build from existing relationships and processes to encourage cross-collaboration within city departments and break down silos.

Next Steps

What will RMI do?

As a result of this workshop, we will integrate these ideas as appropriate into our workplans over the next year. We will also follow-up on the “related commitments” to support the advancement of these ideas. RMI looks forward to continuing the discussion. And we encourage everyone to join us at the 2021 Getting to Zero Forum, March 15–17, 2021.

What can you do?

Through the [American Cities Climate Challenge](#) and [City Energy Project](#), a Building Performance Standard (BPS) learning cohort is being convened for cities working on advanced existing building policies for passage by end of 2020. The BPS cohort focuses on moving beyond energy benchmarking and disclosure requirements to include additional energy efficiency actions by building owners or operators to bring lower-performing buildings up to an established standard. The BPS cohort launched in early February with a series of peer learning webinars for city staff to connect on topics and issues arising from policy design, stakeholder engagement, policy passage and implementation. If your jurisdiction is hoping to pass a new Building Performance Standard policy in 2020, and are interested to join the cohort, please contact [Betty Seto](#), Climate Challenge Network Manager at NRDC.

Additional Resources

Legislative Precedents:

[Washington State HB 1257](#)

[New York City Local Law 97](#)

[Clean Energy DC Omnibus Act of 2018 \(Title III\)](#)

Other Resources:

[Urban Green Resources on NYC Local Law 97](#)

[Washington DC Stakeholder Engagement Process & Session Notes](#)

RMI, NBI, and NRDC would like to thank all those who set aside time to create solutions before, during, and after this zLab workshop. Stay tuned for continued discussion and collective problem solving on this topic at the next Getting to Zero Forum.