



2. Identifying Disparities with an Equity Gap Analysis

An equity gap analysis can help regulators and program implementers understand inequities in access to the benefits of energy efficiency programs. A gap analysis is an important step in understanding how disparate impacts appear in program implementation. Such assessments can help policymakers and program implementers understand how energy efficiency measures have been inequitably deployed in the past and also inform future program design. Further, by conducting these studies, jurisdictions can ensure the resources dedicated to help alleviate energy inequities will be geared towards solutions that are more impactful.

"The first step to reducing inequities in energy efficiency is understanding where they exist." (MA 2022-24 Energy Efficiency Plan)

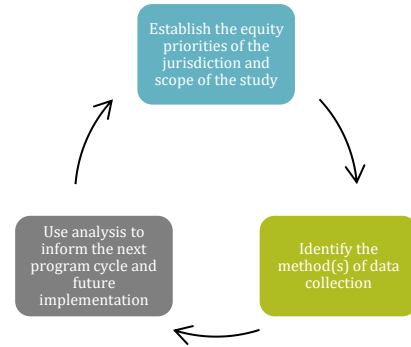
A gap analysis is already common in many fields, including health and racial equity impact assessments. The analysis identifies pre-existing conditions within a community or area. It can help to determine whether the impacts of policies or programs falls disproportionately on a group or population. For reference on how to conduct and integrate these assessments, Pew Charitable Trust's Health Impact Project provides a [toolkit](#) of health impact assessments and other resources to support policies that consider health. Race Forward provides a [toolkit](#) for racial equity impact assessments.

Gaps in access to and benefits from energy efficiency programs manifest in many ways and vary for each state and community. Many groups have been [historically underserved](#) by energy efficiency programs. Some of those groups include BIPOC communities, low-income individuals, renters, youth, older adults, recently arrived immigrants, those isolated by language, and people with disabilities. [Black, Brown, and limited-income individuals](#) are more likely to occupy old buildings with deferred maintenance due to racist and discriminatory policies such as redlining, segregation, and income inequality. Finally, the "[rural efficiency gap](#)" exists in many rural communities, which have slower uptake of energy efficiency upgrades in homes because of barriers to access, even though their higher energy costs would make these improvements more cost-effective for participants than in urban environments.

An equity gap analysis for energy efficiency programs can provide an overview of inequities that currently exist in a state's energy policy by examining participation, market penetration of clean energy technologies, and/or areas with the highest energy burden. Equity gap analysis can examine distributional equity because it provides insight into whether programs and policies result in fair distributions of benefits and burdens across all segments of a community. The analysis can also serve to inform decisions that address structural equity because it identifies where program implementers should direct the most resources to fulfill areas of highest need. Policymakers and program implementers can then use the analysis to inform future program design by creating programs that seek to address identified gaps.

What Equity Gap Analysis Look Like

Conducting studies to measure existing impacts is a crucial step in understanding how programs have been underserving historically marginalized and/or excluded communities, and can help address issues of structural and distributional equity. To conduct this analysis, policymakers and program implementers should include these steps:



- 1. Establish the equity priorities of the jurisdiction and scope of the study alongside members of historically marginalized communities.** Members of historically marginalized and/or excluded communities should have input on the scope and goals of the equity gap analysis to ensure it reflects their experiences and concerns with the current program. Such feedback must be part of a robust community engagement process, building in accountability and trust. Policymakers and program implementers can also look to statewide equity-focused policy, such as legislation or regulatory actions, to inform the scope and goals of the study.
- 2. Identify the method(s) of data collection for the equity gap analysis.** Gap analysis studies can include both quantitative and qualitative methods. Quantitative methods provide baselines for metrics measured in dollars, kWh, or percentages of populations. Qualitative methods such as stakeholder outreach in surveys, focus groups, and interviews, with adequate provision of incentives and compensation (including for time, travel, and childcare) for participation, provide better understanding of specific barriers hindering access to certain technologies or participation in government assistance programs. Both types of methods are key for informing program administrators of ways to increase program efficacy and reach.
- 3. Use the equity gap analysis to inform the next program cycle and future program implementation.** It is important that policymakers and program administrators use the analysis to inform program design and implementation in current and future cycles. Using the study as a baseline to measure future success will allow for comparison and help to align energy efficiency programs with equity goals. Each new cycle of programs should include a renewed study that includes a meaningful stakeholder process before, during, and after scoping and drafting of the study. Policymakers and program administrators should use active efforts to solicit comments from new voices to ensure that the study can evolve and change over time to continue to serve historically marginalized and/or excluded communities.

Current Examples

In the energy efficiency space, conducting several types of gap analysis that thoroughly examine historical successes and shortfalls is an important step in understanding how programs can best serve their communities and identify areas in greatest need of attention. States have used different forms of equity gap analysis to identify barriers in access to program benefits and inform future program design through examining energy burden, geographic barriers, and participation gaps. The three examples detailed below provide useful models that other policymakers and program implementers may follow in conducting their own equity gap analyses.

Studying Energy Burden – Vermont

Vermont's [2016](#) and [2019](#) analysis studies focused a gap analysis of [energy burden](#) in the state, finding it a powerful metric to guide planning that can ensure the most vulnerable communities are prioritized. Both studies looked at patterns in energy expenditures throughout Vermont communities and studied how much Vermont residents pay for thermal energy, electricity, and transportation energy. Specifically, the state analyzed spatial patterns of energy expenditures (average dollars spent each year) and burden (spending as percent of income for a census block group). The [2016](#) study found distinct spending patterns showing that higher-income households can access and invest more easily in efficient technologies and home improvements.

In [2019](#), the study was conducted again to examine whether and how increasing availability of clean energy technologies impacted household energy spending. While there were no changes in basic patterns found from the first report, the second study changed the granularity of analysis from census block group to town level to improve the value of analysis for local planning. The study found that towns with the highest energy burden were the least likely to participate in programs, even though these were the communities that needed them the most.

The 2016 and 2019 Energy Burden studies allowed the state to target its areas of greatest need for improvement, refocusing and redesigning programs to alleviate energy burdens for the most vulnerable populations in the most cost-effective ways. The results of the analysis informed the creation of a new suite of programs focused on community-wide engagement and tailored to target the needs of Vermonters with high energy burdens. These initiatives include:

- Collaborations with Vermont Agency of Commerce and Community Development (ACCD) to offer enhanced incentives to businesses;
- Increased incentives for moderate-income Vermonters to weatherize their homes;
- The launch of a new Targeted Communities Program in partnership with ACCD to bring enhanced incentives and door-to-door outreach to the state's designated downtowns;
- Complete redesign of a program that provides free appliance and heating equipment to low-income Vermonters with high energy usage; and
- Renewed focus on helping rental property owners complete upgrades.

Studying the Rural Efficiency Gap Barriers – Alaska, Maine, New Hampshire, Vermont

A geographically-based gap analysis enables state design of more effective and accessible programs for households with difficulty accessing public resources by opening lines of communication, outreach, and collaboration. An urban/rural energy efficiency gap has been studied in Alaska, Maine, New Hampshire, and Vermont. The Island Institute conducted a study, "[Bridging the Rural Efficiency Gap](#)," that found that the percentage of household income spent on energy bills is 33 percent higher in rural areas and participation in energy efficiency financing and rebate programs can be significantly lower.

The study identified three buckets of barriers to rural energy efficiency programs and potential solutions, as follows:

Geographic	
Barriers	Solutions
<ul style="list-style-type: none"> • Geographic isolation (physical distance, lack of economies of scale in infrastructure) • Lack of skilled workforce availability 	<ul style="list-style-type: none"> • Setting equitable implementation goals • Aggregate demand and purchasing to overcome lack of economies of scale • Community partnerships with local organizations and local workforces
Financial	
Barriers	Solutions
<ul style="list-style-type: none"> • High upfront costs • Higher energy burdens • Unwillingness acquire debt for efficiency, limiting participation in standard loan program availability 	<ul style="list-style-type: none"> • Flexible program designs with staged upgrades • Support from third parties for co-pay, and do-it-yourself incentives • Innovative financing structures involving on-bill financing for thermal efficiency measures
Awareness and Access	
Barriers	Solutions
<ul style="list-style-type: none"> • Traditional marketing channels may not reach rural residents and rural residents may be skeptical of whether programs will help 	<ul style="list-style-type: none"> • Education and leverage of community-based organizations • Convening stakeholders to share information and resources • Cross-sector collaboration with public health and building stock

Studying Barriers to Participation – Massachusetts and Rhode Island

Studies of customer profiles and barriers give states insight into which populations are being underrepresented in program participation and an understanding of how to reach them more effectively so that historical inequities in access can be redressed. These studies have been conducted in both Massachusetts and Rhode Island. In 2021, Rhode Island conducted a “Participation and Multifamily Census Study” and a “Nonparticipant Market Barriers Study”, which informed the recommendations of the [2021 Rhode Island Energy Efficiency Equity Working Group](#).

In Massachusetts, program administrators commissioned three gap analyses to understand barriers in the energy efficiency market and to inform program design for the 2022-24 energy efficiency program. These studies included [the Residential Non-Participant Customer Profile Study](#), [the Residential Non-Participant Market Characterization and Barriers Study](#), and [the Commercial and Industrial Small Business Non-Participant Customer Profile Study](#). Together, these studies analyzed the percentage of participation across different populations and found the greatest difference between renters and homeowners, at a 10 percentage-point difference. Using this data, program administrators concluded

that successful efforts must address both financial and non-financial barriers, and introduced program enhancements to increase equity. These included an enhanced community partnership program, enhanced incentives for moderate-income customers, environmental justice community-targeted programs, increased accessibility via addressing language barriers, and increased outreach to renters.

Resources

- “Commercial and Industrial Small Business Nonparticipant Customer Profile Study.” DNV GL for the Massachusetts Program Administrators and Energy Efficiency Advisory Council, Apr 2020. https://ma-eeac.org/wp-content/uploads/Final-MA19X11_B_SBNONPART-Report-20200415-1.pdf
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<https://www.energy.gov/sites/default/files/2019/01/f58/bridging-rural-efficiency-gap.pdf>