Practical Evaluation Advice for Program Planners from Two Recent NMR Studies

Action Plan for Measuring Market Effects & Residential New Construction Passive House Assessment

Generating & Measuring Market Effects

Over the last few years, there's been a lot of buzz about the prospects for leveraging resource acquisition programs to produce market effects and for market transformation. Market effects are difficult to measure for a variety of reasons – but this doesn't mean they can't be measured, only that program administrators need to establish and carry out plans for measuring them early on. In 2019, NMR developed market effects planning and measurement guidance for the Massachusetts Program Administrators. A brief document aimed at program staff, the Action Plan for Measuring Market Effects explains how to design resource acquisition programs that are likely to generate market effects worth measuring, how programs can prepare for that measurement, and what the measurement is likely to entail.

Why measure market effects?

Market effects are sustained increases in the adoption and penetration of energy-efficient technologies and practices that result from structural changes in the market and in behaviors of market actors that are induced by a market. Market effects can be difficult to measure because their reach goes far beyond program participants. The cumulative impact of influencing an entire market may be large and sustained over time, so it can be worthwhile to measure market effects that are likely to be substantial. Doing this effectively requires advance planning to maximize market effects and increase the likelihood of being able to quantify them.

How to Measure Market Effects

1. Identify appropriate target markets
2. Characterize the market and identify baselines
3. Develop a program theory and indicators of market effects
4. Decide on a method for measuring net savings
5. When enough time has passed, quantify the savings

Residential New Construction Passive House Assessment

Recently, NMR conducted research for the Massachusetts Program Administrators to support design of a new Passive House offering for the Mass Save Residential New Construction Program, which includes multifamily buildings with five or more units. This included comparing tools to model the energy use of various types of passive homes and conducting in-depth interviews with market actors to better understand the opportunities, barriers, incremental costs, and incentive issues associated with the offering.

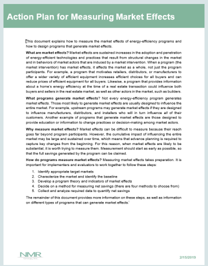
Key Areas of Focus

Model Comparison. Not every energy modeling tool is equally capable of handling the inputs and detail associated with Passive House construction, nor are they equally capable of modeling the baseline conditions for calculating program savings. The Team conducted a detailed comparison of three energy modeling tools for passive multifamily high-rise buildings and four tools for passive single- and multifamily low-rise buildings.

Preliminary Potential Savings. To assess the potential that passive design holds for adding to the program's energy savings, The Team derived the average energy savings of the Passive House models from each of the modeling software results and combined these into one overall average savings value for each building type, by end-use. The results showed that the modeled homes meeting passive design standards saved considerably more than the program's current as-built energy models.

In-depth Interviews. The Team interviewed 25 market actors that have experience with Passive House projects. A primary purpose of the interviews was to inform the amount, distribution points, and incentive allocation requirements for promoting Passive House-levels of new construction in the residential market. The interviews also explored the incremental costs associated with building Passive House-certified projects, which provided valuable insight into the percentage cost increase a Passive House project might present compared to typical new construction practices.

Read the Full Reports



Action Plan for Measuring Market Effects

This document explains how to measure the market effects of energy-efficiency programs and how to design programs that generate market effects.

What are market effects? Market effects are sustained increases in the adoption and penetration of energy-efficient technologies and practices that result from structural changes in the market and in behaviors of market actors that are induced by a market intervention. When a program (the market intervention) has market effects, it affects the market as a whole, not just the program participants. For example, a program that motivates retailers, distributors, or manufacturers to offer a wider variety of efficient equipment increases efficient choices for all buyers and can reduce prices of efficient equipment for all buyers. Likewise, a program that provides information about a home's energy efficiency at the time of a real estate transaction could influence both buyers and sellers in the real estate market, as well as other actors in the market, such as builders.

What programs generate market effects? Not every energy-efficiency program generates market effects. Those most likely to generate market effects are usually *designed* to influence the entire market. For example, upstream programs may generate market effects if they are designed to influence manufacturers, distributors, and installers who will in turn influence *all* of their customers. Another example of programs that generate market effects are those designed to provide education or information to change practices or decision-making among market actors.

Why measure market effects? Market effects can be difficult to measure because their reach goes far beyond program participants. However, the cumulative impact of influencing the entire market may be large and sustained over time, which means that advance planning is required to capture key changes from the beginning. For this reason, when market effects are likely to be substantial, it is worth trying to measure them. Measurement should start as early as possible, so that the full savings generated by the program can be claimed.

How do programs measure market effects? Measuring market effects takes preparation. It is important for implementers and evaluators to work together to follow these steps:

1. Identify appropriate target markets
2. Characterize the market and identify the baseline
3. Develop a program theory and indicators of market effects
4. Decide on a method for measuring net savings (there are four methods to choose from)
5. Collect and analyze required data to quantify net savings

The remainder of this document provides more information on these steps, as well as information on different types of programs that can generate market effects.[i]

2/15/2019

Market Effects

MA19R05: Residential New Construction Passive House Assessment – Overall Report – Final

Final Report

January 6, 2020

SUBMITTED TO:
The Massachusetts Electric and Gas Program Administrators

SUBMITTED BY:
NMR Group, Inc.

Passive House

Action Plan Report