



DEEP SAVINGS IN EXISTING BUILDINGS

SUMMIT SNAPSHOT

This is a brief overview of the working group's facilitator notes on Deep Energy Retrofits (DER) from the September Summit in Boulder, Colorado. NBI is working with the full event notes, input and participant feedback to produce a full Summit Summary by mid-late November.

Running Themes throughout the Summit.

- Existing buildings are the critical market opportunity now for significant energy savings.
- Distinct needs exist between large and small/medium (<50k sf) buildings.
- Scale and typology matter. Large buildings may have on-site building operators and require different offerings than those smaller buildings typically operated by service providers (if at all).
- Small/medium buildings represent half the savings potential, but have a more complicated process due to the huge volume of buildings and divisions of ownership (for commercial, buildings $\leq 50,000$ sf are 45% of floorspace / 95% of all buildings).
- Timing and savings opportunities differ by building status: a) As is - no planned improvements, b) Plan in Place - equipment and maintenance regularly assessed and upgraded, and c) Major Renovation—large scale changes, often structural, in use, tenant or multiple systems.
- Prescribed, third-party, and turnkey models are key solutions to unlocking small markets.
- Strategies that address technical and financial issues are needed in one package.
- Building owners need financing that is (ideally) off individual and corporate balance sheets.
- Energy is not the core business of building owners. Removing the hassle factor is especially important for small building retrofits.

SNAPSHOTS FROM WORKING GROUPS

Repeatable, Scalable Solutions. A significant number of strategies are applicable to a wide range of project types in a relatively predictable (repeatable) way. These represent an opportunity for a scalable prescriptive solution set for broad application. However, specific applicability depends on a range of factors or filters that must be used to guide decisions about how best to apply these strategies and in what order and combination. The filters must also identify those projects that should be using more detailed, individual analysis tools. A number of repeatable performance strategies focus not on physical building upgrades but on maintenance, operation and tenancy. These strategies must be an integral part of any performance upgrade; they also represent vast opportunities for more modest, low-cost performance upgrades across the building stock.

Delivery Approaches. Aggregation models and third-party delivery of full energy solutions and financing were discussed as priority ways to prime the market for deep energy retrofits in existing buildings, particularly small and medium buildings. Benefits of these approaches include: a) reduced transaction cost, owner time and hassle, b) delivery of deeper efficiency solutions and incentives through a single contact, c) provision of capital and business logic to decision makers and d) a repeatable model of delivery that makes smaller projects attractive. Programs and policies must make the gathering and delivering of energy savings (at as deep a level as is technically and fiscally feasible) good business for the private sector. New models need pilot programs that package a range of buildings into a single delivery effort and provide access to low-interest or off-books capital for financing.

Information Flow. Determining the right information at the right time is necessary to create market demand and implement deep retrofits. Class A office space requires LEED, but LEED does not require 50% energy savings. We need to do a better job of identifying who benefits (not just the owner) from deeper savings and why. A trusted advisor is the best way to access many stakeholders. Trade associations, community organizations, online media/courses, continuing education courses, standards and retrofit roadmaps can all be used to disseminate information. Owners and developers have high leverage for enabling deep retrofits, but so do utilities/regulators and tenants. There is a question in how to monetize public benefits of energy retrofits.

Information Needs. There is a difference between the data required for any kind of statistical characterization of the building stock and the information needed by the project team working on an individual building. Confusing the two can lead to an inefficient and resource-intensive effort to gather building stock data or guidance for an individual building that inadequately serves the needs of the project team. When looking at the most critical pieces of information, there is a high level of consistency across building types. However, those pieces of information must take different forms.

Policy. The cost of energy has great potential to drive deep retrofits. Wholesale rate hikes are unlikely to survive public outcry and can have unintended consequences; a tiered-rate schedule could balance the two concerns. Energy code requirements that apply to the entire building stock can be a powerful driver, setting a low energy use bar below which no building could fall with compliance triggered through a performance standard at market transaction, etc. This creates an opportunity for utility programs to incent retrofits that go beyond the low bar of the existing building code. Short-term goals can often sabotage long-term gains. Energy policies and state energy plans need to promote long-term strategies that justify the typically longer pay-back periods of deep energy-saving retrofits.

Education. Training must be appropriately tailored based on scale and typology. Certain typologies, such as Main Street, may provide distinct opportunities that can be capitalized upon. An owner-occupied building requires a unique education approach. Small building owners need a turnkey approach. Education is no exception. Look for existing opportunities. Ask “Where do owners/managers currently go for their education?” Working with associations such as BOMA, IFMA and IREM, as well as local business and industry associations, is essential to getting your message heard.

Utility Program Strategies. Tools like on-bill financing, resource conservation manager programs and other financing strategies could work well for customers or in an aggregator model. Programs should focus on repositioning assets into a higher performance class. This implies both an investment at key times in the buildings market cycle and support for the market awareness of building performance values. Incentives should be scaled to reflect the level of effort. The kWh savings should be much more valuable at 50% improvement than at 30%. Low levels of improvement should not be incentivized as these programs deter subsequent investment in deep retrofits.

Urban Strategies. *Regulatory Powers:* Cities are uniquely poised to pioneer on public disclosure; those that pilot this will have data no one else has. City-wide benchmarking data will allow cities to identify their worst performers as one kind of “portfolio” they could tackle with targeted programs. City data may also start to provide benchmarks for the smaller buildings not addressed by ENERGYSTAR. Because cities regulate building standards and land use, they can create incentives and mandates for DER-like fee-bates or density bonuses. *District Opportunities:* Cities should integrate energy efficiency into neighborhood planning and encourage communities to build on existing mechanisms for district organizing and financing. This can include urban renewal districts to LIDS, BIDS, BIAs and Main Street programs and would attract ESCos. Look at existing models and leverage related organizational efforts. *Aggregation:* Encourage crossing property lines with retrofits and financing. Build aggregated energy models for building clusters to see how 1) adjacent buildings perform differently than stand-alone ones (e.g. Living City Block) and 2) determine their potential to share solutions or become energy farms. Insert DER thinking into other city policy silos. Cities are broke and have depleted bonding capacity, but they can finance options.

Some Participant Comments.

- Create a roadmap and or strategic plans with all stakeholders and strategies specific to building types, highlighting what is needed to make the deep energy retrofit possible.
- Big savings from deep savings is the market right now, need a well-documented white paper.
- Need better packaged tools and toolkits to address financing and risk management challenges.
- Must craft clear messaging targeted to specific audiences, building types and owners. Need to support an attitude of client “investment” thinking rather than “expense.”
- Recognize the desire of owners/operators/designers to out-compete their peers; competition should be incorporated as a driver into more projects and messaging.
- Continue to share the typologies work presented under development, and the progress on packaged solution sets for this market. Need to combine these with clear cost and financial impacts to be useful to practitioners.
- Keep the Dialogue Going—webinars, group website, Linked-in, NW Conduit, ET3, Old Buildings Institute. Engage related organizations. Maintain momentum within this group and interested experts.

Thank you to our Additional Summit Sponsors:

*BetterBricks/NEEA, ComEd, Doris Duke Charitable Foundation, Kresge Foundation, National Grid, NYSERDA
Office of the Future Consortium, Rocky Mountain Institute, Southern California Edison*