BRIM MULTIFAMILY

PHILANTHROPIES' MOST PROMISING ENERGY EFFICIENCY APPROACHES IN THE BUILDING RETROFIT AND INDUSTRY MARKET

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Executive Summary

Six philanthropies are collaborating to see what they - and others - might do to rapidly increase the scale of the U.S. building energy efficiency retrofit market. This involves seizing the opportunities and addressing the barriers presented by this challenge. The philanthropies know there are, and indeed have sponsored, many excellent pilot programs that prove the market is ripe and viable. But this effort focuses on how we go to scale, with an emphasis on achieving "deep" retrofits. These philanthropies are the Doris Duke Charitable Foundation, Energy Foundation, Kresge Foundation, Living Cities, MacArthur Foundation and Rockefeller Foundation. Several other foundations are informally following the insights obtained from this effort.

This report is part of a larger process that included a roundtable of approximately one dozen multifamily industry experts,[1] a summary report describing the insights and recommendations of the roundtable participants, and structured interviews with additional industry experts.

The interviewees generally felt that the description of the multifamily market dynamics in the roundtable report captured most of the important influences, and did so in a way that resonated with their experiences. Although there was also general agreement about the value of the approaches discussed, there weren't any recommendations from the roundtable that garnered complete consensus. The major findings from this in-depth exploration of the roundtable recommendations are:

1. Establish a national network of centers of excellence with strong support for local expertise, but a central coordinating entity. The national center should focus on easing data acquisition (especially from utilities), data format consistency, and making aggregate data more readily available. The foundations should help to make sure that local experts are available, rather than seek to establish a single national source of expertise.
2. The foundations should pursue a suite of initiatives to improve the availability and affordability of financing for the multifamily retrofit market, by supporting research into some of the most influential issues, but not by allocating the foundations' resources to establish loan loss reserves or other types of credit enhancements. In particular, they should support creating a clear vision of what the transformed market looks like, and conduct research designed to clearly lay out what are the various market actors' values and drivers. Once these two steps are accomplished, remaining needs for addressing barriers to financing multifamily retrofits will be both easier to identify and easier to understand. It is not recommended that the foundations support the creation of another Energy Service Company (ESCO), even a special-purpose ESCO.
3. The foundations should foster research with a tenant focus to help the industry better understand what role tenants play in the demand for energy efficiency upgrades, how their behavior affects energy use, and what strategies (e.g., real-time energy use feedback, education, etc.) have a positive impact on their energy use.
4. The foundations should engage in a wide range of policy initiatives at the state and local level, and to a lesser degree, at the national level. Since many of the influences that affect the multifamily retrofit market are local or state-specific, the foundations can have the deepest impact by focusing more at the local level. Examples of local policy initiatives in which the foundations should invest include changing the focus on utility

[1] The foundations convened separate roundtables for each of five different building/occupancy types.

and local government programs for a measure based approach to a whole building approach, adoption of local or state mandates for benchmarking and disclosure, and support of local/state requirements for trained and certified building maintenance staff.

Each of these recommendations is described in greater detail in later sections, along with recommended considerations for selecting the best regions. The recommendations follow summary descriptions of input from the interviewed experts about the market dynamics, the range of approaches discussed at the roundtable, plus descriptions of specific approaches and considerations that the experts described.

Purpose and Process

More than 30% of the U.S. population live in multifamily buildings[2]. Yet most of the research, discussions, and program designs addressing possible energy efficiency improvements in the residential sector are based on an understanding of single-family homes. Multifamily buildings are tremendously more complex, with a wider range of equipment types, utility cost allocations, sizes, and even construction materials. The fact that one entity, a multifamily building owner can pay for *part* of the utility costs, while a large number of households occupy the building, each paying another part of the utility costs, creates the need for addressing many more questions when contemplating how to positively impact the demand for energy efficiency retrofits.

A good example of this complication is the fact that many of the major household appliances found in multifamily dwellings are the property of the building owner, not the households. Since the owner has little economic motivation for upgrading equipment when tenants pay the bills, appliances tend to be older and less efficient than in single-family homes.[3] The irony is that renters pay a higher share of their monthly income for utilities, and yet they are less able to directly affect the efficiency of their homes by making upgrades themselves. Only 14% of single-family homes are occupied by renters, while 88% of multifamily households are renters, and renter-household incomes are roughly half those of owner-households (approximately $31k/yr vs. $61k/yr)[4]. The fact that tenants are unable to upgrade appliances when they are owned by the landlord and are less able to afford upgrading the ones they own is even more disturbing when we recognize that low-income households spend nearly 20% of their monthly income on energy, compared to about 4% for the average household.[5]

In 2012, the foundations convened several roundtables with experts in specific building occupancy types: commercial office, commercial retail, single-family, multifamily, and health care. The team at each roundtable described the market dynamics that are at play in the sector on which that roundtable focused. Then they described a number of possible approaches that the foundations could take to help increase the number and depth of energy efficiency retrofits. These discussions were summarized in a report[6] that also explored possible synergies and

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[2] U.S Census Bureau

[3] See: http://www.realclearenergy.org/2012/12/21/why_renters_use_more_electricity_250738.html

[4] "Overlooked and Untapped: Unlocking the Energy-Efficiency Potential in Multifamily Housing." Benningfield Group. 2010.

[5] Benningfield Group. 2010

[6] *"Report on Expert Recommendations to Increase the ace and Scope of the Building Retrofit Market."* James Wolfe. October 1012.

commonalities between the different building sectors. The foundations then tapped one expert in each of the building types, who was not a part of the original roundtable, who conducted interviews with many market actors across professions and geographies – but with deep knowledge of and experience in the relevant sector.

This report is based on interviews with 19 multifamily subject matter experts and the recommendations within it are based on the synthesis of those interviews with the understanding and knowledge of multifamily buildings of the author.

Multifamily Market Dynamics

In brief, the initial BRIM report on the roundtable process and outcomes described the multifamily market dynamics in a way that raised few disagreements among the broader group of multifamily subject matter experts interviewed in December and January. Several experts offered clarifications or augmentations on some of the market dynamics listed. One particularly important point they made is that "multifamily" is not a homogeneous market and the importance or impact of various market dynamics play out very differently in the various subsectors. For example, the effect of short-term leases and desired payback on investment decisions may not pertain as much to the affordable housing subsector. In this subsector other issues and regulatory options and mechanisms may have a larger effect on these decisions. On the other hand, virtually all decisions in the market rate sectors are driven by economic considerations of return on investment or net operating income (NOI). This relates directly to the role of non-energy benefits, because increased NOI is the primary benefit driving decisions in this subsector.

Although the term, "non-energy benefits" is not generally used by decision-makers in the multifamily market, they are the strongest drivers for energy efficiency retrofits. Owners must consider the health impacts that their buildings and systems have on the tenants. For some of them, improving the indoor environmental quality can mean the difference between a profitable occupancy rate and one that drives net operating income negative. One owner also stated that liability concerns from indoor environmental quality drive some of his company's decisions on what are nominally energy efficiency renovations.

A few also pointed out that for most owners, only those non-energy benefits that can be quantified monetarily matter. For example, a clear link to positive impacts on climate change will make little difference, while evidence of savings in maintenance costs can spur them to act. What owners want is low vacancy rates, low turnover rates, fire safety, mold mitigation, building durability, and other effects that lead to better NOI. How these influences affect owners' decisions varies greatly between the various subsectors of multifamily. For example, the 2011 average turnover rate for individually metered market-rate apartments was 53% compared to 31% for individually metered subsidized apartments. For master-metered apartments, the difference was even more dramatic, with market-rate and subsidized units having turnover rates of 49% and 21%, respectively.[7] Consequently, reducing turnover will have a larger effect on NOI in market-rate buildings than in those that are subsidized. Although an increase in asset value due to efficiency improvements was only mentioned by one expert, the potential for it to impact market-rate owners' decisions could be significant if and where the impact can be quantified.

[7] National Apartment Association 2012 Survey of Operating Income & Expenses in Rental Apartment Communities.

Some experts interviewed disagreed with the contention in the roundtable report that the efficiency process is too complex. One expert who handles the process for clients who are multifamily property owners said that it may seem too complex in states where "too many"[8] utility programs exist. Another expert who consults with property owners said that what may seem too complex in the single-family market is workable in the multifamily sector, because it has a higher tolerance for complexity and paperwork. However, there is clear consensus that making things easier for owners is always desirable.

The philanthropies may find that they have a naturally larger role in the affordable housing sectors- both subsidized and nominally market rate. Some of the drivers like turnover rates and a drive to improve NOI are less important in the affordable sector, but other drivers, like response to policy initiatives, are much stronger.

The roundtable report stated that there is a risk that rating and disclosure programs could make multifamily housing less affordable by highlighting the value of increased energy efficiency. Most experts interviewed were not concerned that would be a significant problem; in fact the majority of experts interviewed for this report had not even considered that it might be. One reason they are not worried is that owners' concern about reducing the costs of vacancies and turnovers is a larger driver than almost any other influence. Two of the top four strategies they employ to maximize tenant retention are (1) making desirable upgrades to apartments, and (2) reducing rents.[9] In fact, one expert questioned the basic underlying assumption that tenants *will* pay more for a more energy-efficient apartment, when there is no solid research data yet to support that contention. Anecdotes from the higher end of the spectrum in multifamily market provide some indication that verified green and efficient multifamily buildings may have a higher asset value – evidenced by the fact that buyers in Denver paid more for certified greener apartments.[10] Another expert pointed out that in the subsidized part of the multifamily market, rent plus utilities is capped at 30% of the tenants' income, preventing rents from increasing more than utility costs decrease.

Potential Philanthropic Approaches

Range of Approaches

The roundtable process developed several possible approaches that the foundations could consider to foster broader and deeper energy efficiency retrofits in existing multifamily buildings. During the follow-on process of gathering input from other subject matter experts, interviewees were asked whether they felt that the range of approaches highlighted was inclusive enough. The experts voiced less agreement about the range of possible approaches listed in the roundtable report than they did on the market dynamics.

Benchmarking and Disclosure

The general opinion is that benchmarking and disclosure could act as drivers for the uptake of energy efficiency retrofit projects, but there are a lot of important details to consider. Should a

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[8] Note that "too many" was the interviewee's perspective.

[9] US Census Bureau *Property Owners and Managers Survey,* September 30, 20111. http://www.census.gov/hhes/www/housing/poms/statrep4.html

[10] As one example Solera, a LEED gold apartment building in Denver, sold for the highest $/s.f. of any multifamily property in Colorado.

building be benchmarked against similar buildings in the region, the state, or the entire nation? Should a building's performance just be benchmarked against itself over time, instead of being compared to other multifamily buildings? How can the managers of the benchmark program ensure that analyses are based on consistently high quality data, and performed using consistent software? Or should all benchmarks simple be the tenants' aggregate billing data?

Because the multifamily market is so diverse across so many dimensions (e.g., size, age, tenants' income levels, ownership type, central versus individual systems, who is responsible for which bills, high-rise versus low-rise, etc.), it may be difficult to get enough data to make benchmarking valid for any particular building. Some experts felt that benchmarking just isn't appropriate for the multifamily sector, while others feel it is critical.

Several experts drew a contrast to the potential value of rating and disclosure in the single-family homes market. As long as the target audience of the disclosure is potential buyers of the multifamily property, it could have some usefulness in informing the potential buyer's decision, just as in the single-family market. But the more important impact may be the effect on the potential renter's decision, and that is where single-family and multifamily diverge. As noted above, one of the most important drivers for multifamily property owners is NOI, and one of the biggest factors affecting NOI is the vacancy rate. To the extent that disclosing a "good" benchmark can reduce vacancies and occupant turnover, it can reward an owner who made upgrades by reducing lost rent and expenses associated with "make ready" work.

In both markets one of the main desired impacts of a score is to influence the owner's decision to make upgrades. An audit can help the owner decide what upgrades to make – similar to the impact that a good audit has on a homeowner's decision to upgrade. However, for multifamily owners, a direct connection to operating costs and net operating income is needed. Many of the experts felt that the marketplace is not yet good at making that connection. One expert went so far as to say that benchmarking a multifamily building has value to the policy makers, but not to the property owner; at least not the way it works today.

Several experts expressed a serious concern about the current difficulty of obtaining the necessary data to make benchmarking effective. Until tenants' billing data can be more easily obtained, both accuracy and affordability of multifamily benchmarks will suffer. One expert posited that benchmarks could be confined to master metered buildings or just the common area end usages, so that only the owner's meter data would be needed. However, in the former case, that represents a further narrowing of the comparative building stock, which in turn impacts accuracy. In the latter case, it would ignore the bulk of the energy used on site. It would also negatively impact accuracy because common area loads are not uniform from one building to the next. One may have laundry facilities, common cooking kitchen, and day-care facilities, while another on the same block has none of those end uses. A couple of experts both posited that a benchmark given in the metric of energy dollars per square foot could potentially address most of these concerns.

Mandatory Sustainability Regulations

A few experts seized on mandatory sustainability regulations as described in the roundtable report as the best way to effect a lasting change to energy efficiency in this market. But the majority felt that it would be preferable to find other ways to make the market better recognize the value of energy efficiency. Still, others had no opinion on it. Opinions of those with experience in New York, where audits and benchmarking are required for buildings of a certain size, and where the state provides loans and other assistance to make upgrades, were just as

mixed. Some felt that New York proved this approach won't work. As one expert said, "Owners hate it, and the New York Building Department does not embrace it." Another said, "Mandatory anything in this market is counter-productive." Others felt that New York proved it does work. For example, "It is driving owners to participate in utility and NYSERDA[11] programs." Most stated they felt that it is important to keep the process, including the audit reports, as simple as possible and not add unnecessary requirements, so that owners will be able to understand them. The report format should be fashioned with owners in mind, not policy-makers or energy efficiency experts.

Center of Excellence

The center of excellence concept elicited a wide range of comments from our subject matter experts, perhaps because the concept, as characterized in the summary report, is so broad and fluid. The concept is characterized in the summary report as a 'one-stop shop' to house information on financing and technical information, designed to network on a regional level to accelerate the movement of the market.

Reasons given for supporting the idea of a center of excellence included the need for utility program managers and policy makers to have an unbiased source of deep information on what has been tried, what works, and what doesn't work. This concept is contingent on the ability to collect and house data on performance of projects that have undergone energy efficiency retrofits. Several experts see its potential to share authoritative information about best practices as the primary reason for having a center of excellence.

The credibility of such a center relies on the agency or entity that is managing and maintaining it. One oft-mentioned possibility is to house it at the Department of Energy (DOE). DOE already serves this function for single-family energy efficiency work, and already has fairly deep expertise in multifamily issues as well. In order to be effective, (1) it would have to be very well funded so that it could serve for the long haul, and (2) it would have to have a wide array of experts because multifamily is such a diverse market. DOE is seen as having the necessary resources both in terms of expertise and long-term funding. However, the frequency of annual budget battles in Washington, D.C. could trigger an occasional fight to preserve funding. Another option that would establish the kind of trust needed is for one or more of the foundations to act as the managing agency. It is important that it not be controlled by an impacted industry, trade association, or individual companies, due to conflict of interest issues.

Another recurrent recommendation from the experts is that the center be national, but with very strong ties to local practitioners such as Build it Green, Local Initiatives Support Corporation, California Housing Partnership Corporation, NYSERDA, etc. There is a body of expertise applicable to multifamily buildings that transcends regional differences. However, what worked in New York, Massachusetts or California may or may not work in Indiana, Texas, or Colorado. DOE already has strong working relationships with multifamily energy efficiency experts in most regions of the U.S.

There are also several reservations about the usefulness of establishing a center for excellence. There are already several entities currently publishing best practices in multifamily retrofits. Most are local with regionally appropriate information, but some have a more national outlook.

[11] New York State Energy Research and Development Agency (NYSERDA) is responsible for much of the energy efficiency program design and implementation in New York.

It is possible that pulling information and expertise together into a single center would only help those who do not have access to local or regional sources of information. One expert with a national focus felt "there is currently sufficient capacity and competency in the existing national intermediary network to accomplish many of the aims of the Center of Excellence." He had previously been party to trying to create a center of excellence but now feels like that effort is akin to "chasing unicorns." Besides the center of excellence being unattainable, he questioned the wisdom of it. Finally, he argues that working at the local level and understanding the local barriers and landscape would be much more effective than establishing a center of excellence. He felt that it would be better to support the currently active local innovators, rather than try to create a "one-stop shop." Nonetheless, all felt that the collection and dissemination of up-to-date, authoritative, and unbiased information is a critical need. In particular, the need for collecting and sharing monitored building performance data is great.

Non-Profit Energy Service Companies (ESCOs)

The attractiveness of this option rests on an understanding of the drawbacks in the basic approach of for-profit ESCOs. As profit-driven companies, their management has a fiduciary responsibility to maximize profits for shareholders. That in turn drives the ESCO to avoid smaller projects, projects involving multiple decision makers, or other projects where the transaction costs are relatively high. It also drives them to include only the most cost-effective measures with a short-term pay back. Consequently, for-profit ESCOs may be structurally inappropriate for seeking deep energy savings, or for working with any but the largest property owners. The roundtable participants suggested that if the foundations created a non-profit ESCO, they could structure it such that it could avoid those problems.

In the 1980s, several firms started out as non-profit ESCOs, but soon discovered that they could only survive by switching to the for-profit model. Examples include the Vermont Energy Investment Corporation and AmerEsco. More recently, Stewards for Affordable Housing for the Future (SAHF) created a non-profit ESCO model in response to a U.S. DOE solicitation, but DOE did not accept the proposal. In the following year's round of funding, HUD accepted it and it is currently being run as a pilot.[12]

One expert posited that the primary problem in the public and subsidized housing sector is not the question of profit potential, but rather the huge volume of regulations to which this sector is subject. He commented, "Without a companion effort at the federal level to address regulatory barriers, a non-profit ESCO won't solve anything." The quoted expert also felt that if the regulatory barriers were eliminated, the existing for-profit ESCOs could serve this sector quite well. This general sentiment was echoed by other experts.

Aggregating Multifamily Properties

Aggregating several multifamily buildings into one energy efficiency renovation project could reduce transaction costs and make upgrades more likely. However, there is not much agreement on how this could be done and what benefit it might provide. For example, one expert pointed out that if 50 buildings are going to go through energy efficiency retrofits, the proponent would currently have to perform 50 different building analyses, complete 50 different applications to utility programs, complete at least 50 different loan applications, and take several other steps for each project. Aggregation in this context makes sense. To make aggregation effective, we will need to find a way to eliminate some of the more time-consuming

[12] Reported by senior staff at HUD, but details were not independently investigated.

and expensive steps, such as performance models and economic analyses for each building. At the very least, aggregation of many projects into one package with a economic analysis for the package as a whole, even if individual analytical models are building-specific, would make for larger loan packages, interesting more potential lenders.

One expert from a large public housing authority stated that he aggregates several projects when he is looking for labor or materials bids. Some of the projects are owned by the housing authority, but others are privately owned affordable housing.

Others pointed out that the Rocky Mountain Institute is promoting aggregation of properties to affect large energy savings. Their focus is on aggregating projects within an owner's portfolio. Therefore, the applicability of their program may be limited to owners with significant numbers of properties.

Foundation Funding for Retrofits/Financing

Experts from virtually all perspectives agreed that one major need is better coordination between the many funding sources, financial instruments, and lenders' requirements. However, some did not feel that there was much of a role for the foundations in this particular effort. As stated by one expert, "The only real help needed here is to translate everything into the terms that lenders care about and the words they understand." Several others felt that the most useful thing that the foundations could do in the financing arena is research. For example:

- Identify the current gaps in the available financing milieu that other funding sources are not addressing. Identify how to fill those gaps.
- Research how loan loss reserves, private mortgage insurance, and other enhancements have impacted uptake of retrofits. Deeply describe what has worked and what hasn't worked.
- Research what regulations and other barriers have impacted retrofit uptake. Why have they acted as barriers? Which have been the biggest barriers?
- What are the most commonly used sources of funds?
- What is it going to take to get a large lender (think "Wall Street" company) to step in and start making these investments, or within the secondary market, taking them?

In other words, they felt that the foundations need to focus on research that is needed in this area more than on establishing or directly assisting any long-term financing programs. Still, there is a lot of interest in doing whatever it takes to expand the pool of available funds. Some feel that this is a critical step if we want to see energy efficiency retrofits significantly accelerate within the multifamily sector.

One idea that was supported was to reorder the process that most large renovation projects step through. Currently, practitioners all too often see proposals prepared before results from a thorough energy audit and analysis are presented. One stated that "Proposals are generated way before the real experts have had a chance to tell owners what they should be doing." This results in budgets being established before the key energy information is obtained.

Data Warehouse and Analysis Center

Every one of the experts who spoke to this potential approach agreed that we need better data, more data, and better access to it. However, there are sharp differences of opinion as to how to

best structure this effort. Some felt that the more active states are already doing this, and unless the foundations' efforts were very carefully coordinated with the states, having a national data repository could be counterproductive. Some felt that it should start with a focus on affordable housing, and then expand out to the rest of the multifamily market. Small owners might derive the greatest benefit from a data center because they cannot access aggregate data on their own, and they don't know where to turn for unbiased information and advice.

It is also important to judiciously address what kind of data would be warehoused, and what kind of analysis would be performed. The data center should be able to provide unbiased analysis to support policy decisions, but it should also have a market-facing element. For example, it could help define important drivers for obtaining positive participation of the real estate, appraisal, and financing communities, as well as defining what specific drivers motivate those owners who do engage in energy efficiency retrofits. A range of experts felt that it is of paramount importance that the energy efficiency community, policy-makers, and program managers understand all of the other relevant professions' needs, and to put the results of analysis into the terms that those professions understand. Data analytics can inform this understanding.

The most useful data to be warehoused is billing data from before and after retrofits. Several experts felt this was critical and one even said it may be the most important thing the foundations could do. A couple of experts felt that more projects should implement long-term or ongoing monitoring, and that housing, analyzing, making it available, and viewing those data would help everyone understand what measures and techniques work, what doesn't, and how buildings operate in 'real time'. It would also point to anomalies such as equipment failures, changes in occupancy or behavior, or even maintenance staff over-riding equipment controls. Other data the warehouse could collect and house include:

- Measure impacts across multifamily building types and regions
- Regional incremental costs
- Data on factors that affect energy usage
- Data on details affecting investment decisions

Because of stability, trust, and conflict of interest issues, some experts recommended that this effort be coordinated by DOE. Others suggested that a foundation launch and manage this effort, but do so in partnership with DOE and local partners. A couple of experts opined that there are many players in this market who have an interest in learning lessons, but a financial interest in keeping the lessons to themselves.

It is worth noting that one of the very knowledgeable experts felt that a data warehouse was crucial, but did not see it as part of a center of excellence. He felt that energy efficiency retrofits are delivered through decentralized and diverse networks and that data and lessons should be shared on a more local level in response to local conditions.

Case Studies

Every expert interviewed agreed that development and distribution of case studies are important for encouraging owners to take action. Some even felt this might be the most important step that foundations could take. Suggestions for performing an effective case study include:

- Make sure that the case studies compare the subject property to a like property.

- Be honest about the trials and pitfalls of a project, rather than just presenting a case "sunny side up."
- Keep the focus of case studies local.
- Get companies who are owners or property management firms to publish the case studies, to make maximum use of the power of peer-to-peer credibility.
- Ensure that the case studies are readable by property owners; use their language, tell the story in their values, and provide pictures and illustrations.
- Create case studies for an audience of lenders, appraisers, and real estate professionals, and monetize all of the benefits discussed.
- Consider how case studies can be used as training tools.

State Policy Roadmaps

Reaction to the proposal that foundations develop state policy roadmaps ran the gamut from, "It would be detrimental" to "I love these. They are so important." Multiple experts felt that while policy roadmaps can be useful, this might not be a worthwhile approach for the foundations to take. The two primary reasons for drawing that conclusion are that (1) DOE handles the State Energy Program (SEP) funds that they provide to states, so they already help states develop policy roadmaps, and (2) one of the outcomes of the infusion of the American Recovery and Reinvestment Act (ARRA) funds over the past few years has been development of policy directions at the state and local level.

One crucial point that these arguments miss is that there is still relatively too little focus on the multifamily market in those states where the energy efficiency community is not very mature, and even among the most active states. The broad energy efficiency policy plans adopted by most states do not adequately address the issues in this market. Roadmaps need to include mechanisms to synchronize policy proposals with relevant market conditions. In addition, actions outlined in a roadmap need to be based in a thorough understanding of what drives the relevant local industries. Foundations can support providing the appropriate expertise to help local policy makers set policy goals, and can even draft legislation to help accomplish those goals, but the state and local policy makers and stakeholders need to be in charge.

Other Options

Beyond the approaches discussed in the BRIM roundtable report, there are several other options that should be considered. One promising idea is the definition and execution of a suite of research, policy, and programmatic efforts focused on tenants, with the goal of lowering households' energy burden. In justification, some noted that the energy burden for low-income households is five times larger, as a percentage of household income, than that for single-family home owners. The foundations could establish a tenant-focused effort that would include at a minimum:

- Piloting model programs that provide incentives for tenants to take action
- Engaging in tenant advocacy during energy efficiency policy discussions
- Providing policy analysis and policy formation in support of better recognition in utility allowances of investments in efficiency retrofits
- Developing a means for providing meaningful, understandable energy consumption feedback to renters

There were several other policy and program approaches that some of the experts thought the foundations should consider. These include:

1. Informed policy work at the national level such as to change tax policy so that energy efficiency multifamily retrofits get adequate tax credit recognition
2. Develop policy recommendations for ensuring that owners are allowed to get benefits from engaging in deep retrofit projects
3. Advocate for best practices, statutes, legislation, qualified investment plans, incentive portfolios, and other tools to increase energy efficiency retrofits at the local level
4. Explore policies that would encourage inclusion of more solar in multifamily retrofits
5. Work on making energy efficiency mandatory for receipt of any federal funds for affordable housing
6. Promote continuous monitoring as a requirement of energy efficiency programs and financing structures
7. Document experiences of industries in response to mandates[13]
8. Provide background research and analysis to change the conversation about split incentives into one about demonstrating tangible economic benefits to owners such as reduced vacancy and turnover rates
9. Develop comparative metrics that are meaningful to the real estate industry, such as energy costs in dollars per square foot
10. Analyze and document how various implementations of HUD's Energy Innovation Fund worked, particularly the tenant-behavior-focused efforts
11. Document how community-focused efforts such as community aggregation in utility programs have driven improvements in multifamily energy efficiency
12. Foster development and delivery of role-based training for building operators and retrofit contractors
13. Provide gap funding for energy efficiency measures that are not included in existing programs
14. Develop locally-appropriate lists of the "twenty best things to do" in a multifamily energy efficiency retrofit, to make it easier for owners to take action without high transaction costs[14]
15. Provide policy guidance to better link energy efficiency retrofit support with triggers that include non-energy retrofits, including identifying means of detecting and targeting properties that need other kinds of renovation work

[13] The expert's contention is that stakeholders create a lot of noise when a mandatory requirement will affect them, but when the dust settles industry steps up and brings the costs of compliance down. This particular expert does a lot of work in Germany and points to the European requirements for energy audits and upgrades as proof that mandates are not as disruptive as industry generally argues (before the fact) that they will be.

[14] Conversely, other experts stated that such lists would not be useful because even within one jurisdiction, there is such a wide range of multifamily building types, equipment configurations, ownership structures, and energy cost responsibility structures (who pays which bill?).

16. Work to change the temporal focus of multifamily program managers (utilities and others) from activities that take place in a 3-12 month time frame to at least a 2-3 year frame, or ideally, to a series of retrofits over a decade or more
17. Research and clarify the total risks and total benefits of energy efficiency retrofits over the lifetime of ownership, and in terms that resonate with owners as investors

Top Three Potential Approaches

The vast majority of experts with whom we spoke support the roundtable's three recommendations: (1) establishing a center of excellence with data warehousing, (2) a suite of financial initiatives, including a non-profit ESCO, and (3) documenting and supporting rating and disclosure programs. But there were some important refinements offered and even a few noteworthy disagreements with the recommended approaches.

Although several of the subject matter experts (SMEs) felt that rating and disclosure may be helpful in the multifamily market, it does not hold as much promise as it does for the single family market, nor did many feel that it ought to be among the top approaches to which the foundations should allocate their resources. If the disclosure were targeted to potential buyers, it would not offer as much impact as it would in the single-family market because multifamily owners already incorporate much of the value of energy efficiency in their more sophisticated approach to analyzing a potential purchase. Further, if the disclosure were voluntary, it is not likely that it would be widely used by any but those who already know they are going to achieve a "good score," significantly degrading the ability to compare against other buildings and skewing the range.

If the disclosure were designed to spur current owners to engage in energy efficiency retrofits even if they are not trying to sell, it leaves too many more impactful barriers in place. Without addressing the other barriers, disclosure may cause little to happen, but it would have value as part of a package of efforts. It would have to be dynamic (not a one-time rating), and would need to include all of the building's energy uses.

If it were designed to better inform potential renters in their deliberations about in which apartment building they want to live, then it should include health and comfort metrics in addition to direct (utility) costs. Utilities are the second largest cost of maintaining a household, yet utility bills are small enough that purported savings from energy efficiency will not be as big of a driver for many as health and comfort.

The Institute for Market Transformation recently researched the potential impact of disclosing a multifamily building's relative energy performance as a driver for owners investing in energy efficiency upgrades.[15] Their report lays out the needed policies and activities necessary for a multifamily energy disclosure program, and points to some activities in which they felt it would be helpful for philanthropies to engage.

There were also several experts who either felt that disclosure is not one of the right approaches for the multifamily sector, or that it is needed but is the purview of the federal, state and local governments – not the foundations. Another concern is that although benchmarking and disclosure could increase the value of more efficient properties, it could also lower the value of less efficient properties, making it more difficult for them to access capital to make the necessary

[15] *Energy Transparency in the Multifamily Housing Sector*. December 2012. IMT.

improvements. Since the foundation of benchmarking is good data, some worry that pushing benchmarking and disclosure before there is more widespread access to billing data could create unnecessary confusion, and if the result of that is large enough, there could even a backlash that would set benchmarking back significantly.[16]

Specific recommendations for shaping this particular effort, should the foundations choose to pursue it, included:

- Make it mandatory
- Wait until the billing data access issue is adequately addressed
- Track buildings over time, with the tenants in place
- Do not try to implement it, but support government implementation
- Include health and comfort ratings useful to tenants

Again, the majority of SMEs support the concept of foundations helping to establish a center of excellence (COE), most had recommendations for its structure, and a few did not feel that it was among the most promising approaches for philanthropies to pursue. Among the most often mentioned details to get right is "ownership" of the COE. A few SMEs said they could not support the idea unless it was entirely independent of the ESCOs or any other organization with a financial stake in some part of the process of energy efficiency retrofits. If it is created, it should be housed either at DOE or within a non-profit that is distinctly separate from any trade association. Interestingly, a couple others recommended that it not be housed at DOE or any federal agency. There is consensus that a COE has to have both local and national presence. Many of the issues that drive, enable, or act as barriers to energy efficiency retrofits have very local roots and dimensions, so COE staff would have to at least have strong local connections, and may even need to have local or regional offices. Conversely, since owners of many of the largest portfolios of multifamily buildings cover several different regions, the COE should have a national center.

Although the concept of a non-profit ESCO received support from about half of the SMEs, the support was tepid in all but two cases. Even the majority of experts who thought it a good idea, mentioned other tweaks needed in the market before the non-profit ESCO would work. Two of the most experienced experts felt like it would simply not be possible to fix the structural problems that currently impels ESCOs to only serve very large projects and focus just on the most cost effective measures – the low hanging fruit. The problems do not stem from the fact that ESCOs are focused on profit; even a non-profit entity needs to make sure the costs of delivering a project are no more than the income/funding they receive for doing it. Solving the problems that would make a non-profit ESCO function well in this market would likely fix the problem for the for-profit ESCO too.

A few experts are not convinced that lack of financing is really an important barrier in this market right now, but most feel that it is, and that the foundations can and should work on this set of barriers. Several thought it ought to be at the top of their list. There were enough suggestions for modifications of the roundtable recommendation to support another complete report. In summary, the two most important recommendations are to improve the ability of the financial community to understand the underlying value generated by improved energy efficiency, and develop a better understanding of the size and nature of the risk associated with loans for retrofits.

[16] One interviewee pointed to EPA's benchmarking efforts as evidence of this problem.

Several interviewees also felt that some of the specific financial assistance contemplated in the roundtable report (e.g., loan loss reserves, interest buy-down, etc.) are appropriate uses for foundations' funds. They agreed that the focus should be on supporting the private market and not trying to make foundation-funding a long term solution.

Some experts wanted to see other kinds of support included as part of the foundations' suite of financial initiatives. A couple of experts suggested working on a tax credit for multifamily retrofits, similar to LIHTCs for construction and preservation of affordable housing. Another suggested work with Fannie Mae so that there would be a reduction (e.g., 10%) in FannieMae's take-out costs if the property meets an energy efficiency threshold.

Research Needs

The experts interviewed generally support the research needs that were listed in the roundtable report. However, several other research needs emerged during the interviews with multifamily experts. In rough order of the interviewees' perceived importance, these include studies for:

1) Non-energy benefits; both the range and importance of benefits to each different stakeholder, defining drivers for the various players
2) Comprehensive study of all of the financing models in the multifamily market
   a) What works or doesn't work [17]
   b) Why
   c) Local differences
   d) Regulatory impediments
   e) What it is going to take to get a "Wall Street" firm (large lender) engaged in this market
3) Deep, unbiased, and robust research into regulatory barriers (particularly at the federal level) impeding the growth of the multifamily retrofit industry
4) Impact of current training and certification of contractors and building operators,
5) Tenants' actions and motives affecting energy use
   a) Impact of energy data on tenant behavior
   b) Impact of multifamily living on household energy use
6) Basic multifamily building science and emerging technologies that are promising in this market
7) Potential policies to support more local and specialized energy efficiency talent
8) The role of healthy buildings in the lives of the tenants, and in fostering the growth of energy efficiency retrofit industry in this sector

The most emphasis was placed on the need for research into how to make obtaining, tracking and understanding tenants' utility data easier, faster and more time-efficient. The other highly important research is that which leads to standard methods for quantifying the effects of non-

[17] Note that this is not the same as the research discussed in the roundtable report. That research was to be in support of whatever intervention the Foundations might attempt in the financing landscape for multifamily buildings. The recommendation from parties in this research is to develop a really thorough and unbiased understanding of what has been tried, why some things worked, what didn't and why; and was not based on a belief that the Foundations necessarily have much of a role in actually filling the finance gaps themselves.

energy benefits provided by retrofits. That research should seek to define what is valued by each of the market actors and how to best provide an incentive or analytics to achieve that desired result.

Common Themes and Synergies with Other Building Sectors

There was little sense within the multifamily community that there is much to be gained by trying to build off of synergies between the multifamily market and other markets. This seems to be tied to the fact that the multifamily market is so different from other building sectors. The multifamily building portfolio owners are generally not the same ones as in other sectors. Rating cannot be done the same way as for single family homes, and has a very different set of issues, relying on mostly different actors than in the commercial building sector. If a large quantity of loans for individual multifamily retrofit projects could be aggregated into a large enough bundle that banks and other lenders would be interested, then there may be some synergies to exploit, but the identification and mitigation of risk in the multifamily sector will still be very different. Even the role of utilities is different enough in the multifamily sector that it needs to be addressed separately.

One area in which some of the issues and solutions in the multifamily sector may be applicable is that set of issues that arise from buildings owned by small "mom and pop" owners. What has been termed the "Mom-and-Pop effect" is influential across building sectors, and where initiatives are found to work with small owners in one market, the technique should be tried in others. Regardless of whether the small owner has multifamily properties, commercial real estate, or rental single-family housing, they will have a more difficult time complying with rating and disclosure requirements, obtaining financing, complying with regulations, coordinating with local programs, or even dealing with their local utilities to obtain energy usage data.

Recommendations

The following recommendations are based primarily on input from the 19 industry experts who were interviewed for this project, but are also heavily influenced by Benningfield Group staff's experiences in the multifamily marketplace over the past three decades. In most cases, their recommendations can be fairly characterized as approaching consensus. However, (a) there was no single question or detail about which the experts were in complete agreement, and (b) some recommendations represent the thinking of a small percentage of the full panel of experts, but are, in the author's perspective, among the most valuable of recommendations. When the recommendation is not representative of the majority of SMEs who addressed it, the text notes that fact so that the reader can make a more informed assessment of the kind of support behind it.

Although the first recommendation focuses on *how* rather than *what*, it is one of the most uniformly supported recommendations we can make about the philanthropies' potential efforts to increase energy efficiency renovations in the multifamily market: that is, to go deep rather than wide. The most pertinent element of the recommendation focuses on the foundations' choice of locations for designing and launching pilots.

Geographic Considerations for Pilot Design

It is critical to make sure that pilot implementers (1) understand the needs and conditions in a defined region, (2) design a pilot that accounts for and meshes with the local needs and conditions, (3) implement the pilot locally, and then (4) take time to fully understand its impact in that local market. In the words of Jim Collins, author of Good to Great, "*Failure is not the biggest danger for [an enterprise]. It is success without knowing why*."

Repeating pilots in separate regions, or running a few simultaneously in different regions, should provide insights into what local conditions are important to success, and indicate what program designs and processes best address regional and market or design-specific concerns. The choice of which localities are ripe for the pilots will depend upon which particular approach(es) the foundations decide to pursue, but consider the following overarching recommendations:

- Stick with regions where most of the infrastructure and human capital is already in place, such as New York, Chicago, Massachusetts, California, Wisconsin, or Oregon
- Focus on regions with the most turnover (highest volume, not the fastest rate) in terms of either sales of buildings or leases of dwelling units [see table below]
- When running multiple pilots, include a mix of geography types such as urban-suburban-rural, economically vibrant vs. semi-depressed
- Focus on regions with relatively dense concentrations of multifamily buildings
- Find areas where Community Development Financial Institutions (CDFI)[18] funded projects are showing successes

The National Apartment Association conducts an annual survey of apartment building owners and one of the data points they collect is turnover rate. These data suggest that the Southeast, South, and the region from the South Midwest through the Mountain States may be among the *most* promising, but the data in the survey summary indicate both that turnover varies by regions and over time. While Regions II, IV, and V had the highest turnover rates in 2011, (a) the rates are constantly in flux, and (b) these regional data may mask significant intra-regional differences, and cities with much higher rates. For example, in 2010 Colorado Springs, CO (Region V) and Charleston, SC (Region II) both had turnover rates of 74%.[19]

Regions		***2010***	***2011***	***Decrease***
Region I	**Northeast**	48%	47%	2.1%
Region II	**Southeast**	59%	55%	6.8%
Region III	**No. Midwest**	51%	49%	3.9%
Region IV	**South**	59%	57%	3.4%
Region V	**Mountain/So. Midwest**	59%	57%	3.4%
Region VI	**Pacific**	60%	52%	13.3%

[18] The CDFI Funds locally based programs that help achieve the goals of affordable housing, economic development and community development financial services. See http://www.cdfifund.gov for more information.
[19] National Apartment Association 2012 Survey of Operating Income & Expenses in Rental Apartment Communities.

Recommended Approaches

Of the leading recommendations about what the six philanthropic foundations should do to support an increase of energy efficiency renovations in the multifamily market, two are versions of approaches listed in the roundtable report and two emerged during the interviews. In brief, we recommend that the foundations (1) support establishment of the *activities* that the roundtable report suggested a center of excellence would accomplish, but not necessarily with a Center of Excellence, (2) support some of the financing elements described in the roundtable report, and take on an additional activity supporting financing, but not foster creation of an ESCO nor establish any back-stop financing funds, (3) focus primarily on advancing supportive policies at the state and local level, and national policies that support state and local efforts, and (4) support research focused on understanding the role of tenants in our pursuit of multifamily energy efficiency. Each of these is discussed in greater detail below. There was fair agreement that the foundations should not create a new ESCO, and though there may be a role for the foundations in fostering benchmarking and disclosure programs, that is not among the top recommendations.

Centers of Excellence

There is a sense that a center of excellence would be valuable, but with some very important distinctions. The foundations need to know and understand what is being done along these lines at the local and state level, and support those efforts. A national center of excellence has little appeal except as a small coordinating and unifying entity with deep connections to local centers, where the bulk of data sharing and advising on best practices needs to take place. The primary value of a national center is to help assure that data are being collected and warehoused in a consistent fashion. There may be little value in a substantial center comprised of national experts, because most of the measures, systems, programs, and even regulatory frames that impact multifamily energy efficiency are so strongly influenced by local conditions. A large part of the role of the national network of centers of excellence needs to be improving access to the data that are needed for an understanding of effective measures and strategies. Most of that data is in the hands of local utilities, so much of the discussion during interviews focused on the utilities' role.

Utility Company Involvement

The utilities have an important role in providing access to meter data at the apartment or building level. This is fertile ground for the foundations' efforts. A system that can supply data to researchers, practitioners, and program managers easier, faster and at lower cost is needed. At a minimum, the foundations can support research and policy work which will make the case for policymakers and address the valid privacy concerns that utilities express.[20] But there is significantly more that the foundations should do to improve the availability of energy use data. Almost everything else in the multifamily retrofit market that could be done by the foundations rests on easier, faster, cheaper access to billing data. For multifamily buildings, the most meaningful disclosure is based on energy costs – utility bills. For case studies to be convincing they need to include actual utility costs savings based on billing data. A center of excellence cannot provide the best advice on what works and what doesn't unless they have good data on

[20] One SME said it is worthwhile to ask how making your utility bills available to the building owner and his/her agents, actually constitutes a privacy concern for a household.

utility bill impacts in real retrofit projects.[21] Coordination across programs supporting efficiency retrofits would be easier if the supporting analysis is grounded in real-world impact data. In fact, some owners matter-of-factly state that they do not include tenant spaces in their energy efficiency retrofits unless the building is master-metered, because the cost and hassle of obtaining tenants' billing data is "too much work" with essentially no payback.

Foundations could help facilitate access to utility data that would be housed in a data repository or repositories. Some utilities would see less risk in making their customers' data available to a non-profit than they would to a party with a potential financial or marketing interest in the building or the retrofit project. The next best option for the repository appears to be DOE, again largely because of trust, but also because of DOE's embedded competencies. Whatever the final form of the initiative, wherever the data is housed, the ultimate goal is to dramatically decrease the transaction costs of gaining the data.

Initiatives to Address Financing Needs

Support for a focus on financing needs is mixed within the community of experts. The recommendation in this report is for the foundations to take steps in support of solving a number of the barriers in financing, but those steps do not include establishing gap funding. One of the elements in the financing suite that was recommended in the roundtable report, establishing a special-purpose ESCO, is not among the recommendations in this report. The primary role that the foundations should support is research, analysis, and outreach on certain significant barriers. One relatively small effort that should be pursued first, and which would help set the stage for subsequent steps, is to get greater clarity about what the future we are trying to bring about looks like. Likewise, the next step should be to gain an understanding of the drivers that motivate all the various stakeholders in the energy efficiency financing process, in the terms and language that the other stakeholders speak. These two steps need to precede any others.

Define a Specific Set of Outcomes that Characterize the Future

Since we are trying to understand which possible efforts could bring about a more active and efficient market for energy efficiency retrofits among multifamily owners, and what initiatives philanthropic foundations should pursue to address barriers in that market, we would be served by defining and referencing what we think the transformed future should look like. Before building roads to a distant city, let's identify the city by name. The foundations should engage in a process to envision a future world (of/for multifamily energy efficiency retrofits), where the current barriers have been reduced, eliminated or otherwise mitigated.[22] Then the foundations can make more informed decisions about how to get there. Similar to an integrated project design process in progressive construction projects, taking a small step back to understand how

[21] Just having the billing data will not be sufficient, especially before the data set is large enough that the impact can be reliably attributed to the energy saving measures. Bill savings could be significantly less than expected due to a concurrent change in lifestyle, including additional electronics. Until there is a dataset large enough that cases like this do not distort the analysis, definitive analysis is not possible.

[22] The process should involve a smaller number of experts (4-6) than either the roundtable or the follow-on interviews. They should all have significant experience in the multifamily energy efficiency market, and their combined experience should include all of the relevant perspectives. A professionally facilitated visioning process should initially require no more than 2-3 days of the experts' time, followed by another day or two of collaborative work. From start to end, the process to draft a vision of the future should take about a month.

the players in a well-functioning retrofit market would interact, and why, may add cost and time at the front end, but could save grief and funds during implementation.

Improve Financing Mechanisms Based on Market Actor Perspective

There is a disconnect between what information the lending community needs in order to increase the volume of loans for multifamily retrofits, and what those involved in audits, analysis, policy work and program design currently make available, or even think should be made available. Owners generally focus on the business metrics, such as return on investment and net operating income. Lenders want to know what the risks are, what can be done to minimize the risks, and how much equity there is in the asset. Energy Consultants want to know how the building will perform given a set of features. Managers want to know how to best keep their properties rented and maintenance-free.

Once the value of the renovations to each decision-maker is understood, all are better prepared to make the decision that is in their best interest. Many times these variables differ between various subsectors (e.g., subsidized, low- to moderate-income market rate, and high-end market rate) and may need a slightly different rule-set. Based on the interviews, there appear to be sharp differences between drivers, values, and even language in the various multifamily market subsectors, all of which need to be better defined, understood and documented.

In fact, this type of understanding and translation is also needed to be able to better respond to needs of all of the stakeholders, including government agencies like HUD and DOE, utilities and their regulators, the real estate community, building operations and management people, and even the foundations themselves. Paraphrasing one expert, intentions to increase the uptake for energy efficiency retrofits will only find fruition when we understand how to drive the demand for it, and much of that rests on understanding the values of each of the players and the language they use. So in addition to translating the value of energy efficiency into the language of the finance community, the foundations' support should include translating the needs and values of the lending community in the various languages and values of the other stakeholders, including policy-makers at every level. It is only after making this effort that the foundations should invest in other targeted interventions aimed at tackling specific barriers in financing.

We recommend that the foundations not invest in providing a loan loss reserve or other credit enhancement, at least in the near term. It is not clear that such efforts would have a significant impact on the depth or rate of energy efficiency upgrades. There is plenty of financing available for those multifamily borrowers who qualify, and qualifying has more to do with the owner's equity, repayment history, and pre-existing relationships with lenders, than on any evidence of the expected stream of savings from the upgrade. In the most extreme characterization of this, one expert said, "If the expected utility bill savings from an energy efficiency upgrade were the only thing making an applicant credit-worthy, no lender would be interested." Even if the foundations were to establish a fund to support financing, it would not be nearly enough. Some of the reasons can be summarized as there are bigger problems, and the rest can be summarized

as the foundations may not have enough money to do this right. These other efforts should not be permanently taken off the table, but the first step in an action plan that could have them as latter steps, is to align the values of the principal parties by first understanding those values, and then using appropriate language to communicate the value.

Non-Profit Energy Service Company (ESCO)

Although some SMEs recommended the foundations pursue a non-profit ESCO model, and some even made suggestions for how to structure it, the arguments against this approach are more convincing. The caliber and experience of those on both sides of this question are relatively at the same high level, so it should be clear that there is weight to both the pro and con considerations. However, it was tried thirty years ago and every surviving ESCO that started out as a non-profit is now a for-profit corporation. Perhaps an even more compelling argument is that the experiment is already being tried again under a HUD contract with Living Cities and SAHF. The foundations do not need to dedicate any of their resources to test whether the non-profit ESCO approach will work in today's environment, because HUD is funding that experiment.

In addition to the facts that (1) it has been tried unsuccessfully in the past, and (2) it is already being tested again, there is a third persuasive argument that the problems preventing a faster uptake of multifamily energy efficiency retrofits are not solved by creating a new ESCO. Conversely, most of the "problems" with the structure or the nature of current ESCOs that makes them incompatible with deep retrofits and small multifamily projects are not solved by an ESCO having a non-profit corporate structure. A non-profit ESCO would still have to pursue cost effective measures, it would still have to wade through the same regulatory barriers, and it would still need to sell its loans to the secondary market, meaning they would need the same (currently unavailable) evidence that efficiency gains increase an owner's ability to service debt.

Tenant Focus

One of the most respected voices in the multifamily energy efficiency community recommended that the foundations develop a set of initiatives designed to develop a better understanding of tenant issues. He proposes working to determine their influence on the uptake of energy efficiency retrofits. To do this, the foundations may need to make one of the goals be to find out how to reduce tenant utility costs to the same percentage of income (4%) that single-family home owners pay. Questions that the philanthropy should address include:

- What do tenants care about? (e.g., comfort, indoor environmental quality, stable energy bills, shrinking energy bills, third-party assurances, etc.), How much do they care?
- What messages, incentives, activities or information changes tenant behavior?
- What inertial tenant behaviors are most critical to an understanding of energy efficiency retrofits in multifamily buildings?
- How does multifamily living affect tenant behavior? Do people use energy differently if they are apartment dwellers instead of home owners?

The tenants' perspective is often not adequately addressed in the design of energy efficiency initiatives because it is the building owner, not the tenant who makes the decision whether or not to engage in a retrofit. Because that has traditionally been the case, there may be powerful influences that are not well understood, and which could be tapped to create greater demand for energy efficiency. Just as likely, there may be tenants' attitudes and preferences that currently

act as barriers, but which could be effectively addressed if they were better understood. Engaging the tenant in a responsive way presents a new opportunity to decrease energy use.

Policy Work

Most of the recommendations for foundation activities that were not covered in one of the top three approaches in the roundtable report can be characterized as development and support of policy changes. One expert even recommended that the foundations focus just on policy work and not get involved in the launch of any programs. While that is not the recommendation in this report, the industry does want to see the foundations take on several policy initiatives. Policies that the foundations should pursue include:

- Work toward adoption of minimum energy efficiency thresholds for access to local, state and federal funds, such as tax credits,
- Support adoption at the state level of some initiatives that the roundtable report highlighted, such as mandatory benchmarking,
- Work on state and local policies to change the focus of programs, incentives, and analyses from a one-event opportunity to a multi-year upgrade process, and show the value of the long-term approach through comparative analyses,
- Research into and identification of the regulatory barriers, such as rent subsidy formulations (e.g., inclusion of utilities in rent costs), utility allowances, access to receipts, asset management requirements, housing quality standards, and tax policies, that inhibit implementation of energy efficiency retrofits, especially in the affordable housing sector,
- Develop locally appropriate outreach to and training for brokers and lenders to help them better understand the risks, benefits, and potential value of energy efficiency retrofits, and
- Support training and certification programs for building operators, including fostering adoption of state and local requirements for maintenance/operator certifications.

Promising Leaders to Implement Approaches

As noted in the previous section, one of the potentially most effective approaches that the foundations could take to support the growth of energy efficiency retrofits in the multifamily market is to develop an understanding of what the values and drivers are for each of the stakeholders in the process, and to translate them into the languages that each of the other stakeholders use. To effectively accomplish that will take a team with a range of backgrounds, including a social psychology researcher. Virtually any of those interviewed for this report would also be a positive contributor to the team.

For the remainder of the efforts recommended, the most promising people with whom the foundations should work are the local agencies and companies who are already involved in many of these activities. For example, New York, Washington DC, and Seattle all require benchmarking of multifamily buildings, using the U.S. Environmental Protection Agency's (EPA's) Portfolio Manager, and it will be important to involve those cities and the EPA in efforts to collect and warehouse data on multifamily building performance.

The state and local governments in Denver, CO are very supportive of Zocalo's efforts to monetize efficiency into terms owners of multifamily buildings recognize, such as impact on $/sf lease rates and net operating income, so Denver would be a good location for scaling up efforts to bridge that language gap.

For efforts focused on affordable housing, Dan Auer from King County Housing Authority (Seattle, WA), and Lisa Baker from Yolo County Housing Authority (Woodland, CA) are excellent potential partners for pilots since the local housing authorities are already innovating with programs for increasing energy efficiency in the affordable sector.

Appendix A: Interviewee List

Dan Auer
King County Housing Authority

Adam Cohen
Structures Design/Build

Michael Colgrove
New York State Energy Research and Development Authority

Sachu Constantine
California Center for Sustainable Energy

Lisa Michelle Galley
Galley Eco Capital

Kevin Hemstreet
South Coast Commercial, Inc.

Dave Hepinstall
The Associate for Energy Affordability, Inc.

Peter Hoyle
Related

Don Hynek
State of Wisconsin Energy Department

Mark Johnson
Gerding Edlen

Scott Muldavin
Green Building Finance Consortium

Ron Nickson
National Multi Housing Council

Andy Padian
The Community Preservation Corporation

Matt Pesce
Facilities Strategy Group

Jennifer Somers
U.S. DOE

Martin Sprang
AIMCO

Wayne Waite
U.S. HUD

Bill Zoeller
Steven Winter Associates

David Zucker
Zocalo Community Development

Appendix B: References Recommended by Interviewees

HUD's Multifamily Green Retrofit Program

http://portal.hud.gov/hudportal/HUD?src=/recovery/programs/green

PIH Competitive Capital Fund Program
http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/ph/capfund/recovcomp

HUD's Energy Innovation Fund
http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfh/presrv/energy

New York Disclosure Law (Local Law 84) -
http://www.nyc.gov/html/gbee/html/plan/ll84_scores.shtml

National Center for Health –
http://www.nchh.org/

Energy Star Portfolio Manager -
https://www.energystar.gov/istar/pmpam/

CEM Certified Energy Manager -
http://www.aeecenter.org/i4a/pages/index.cfm?pageID=3351

WeGoWise -
https://www.wegowise.com/home#home

Green Button -
http://www.greenbuttondata.org/

CDFI Community Development Financial Institutions Fund -
http://www.cdfifund.gov/what_we_do/programs_id.asp?programid=9

NMHC –
http://www.nmhc.org/

San Diego Airport Noise Abatement Program -
http://www.san.org/sdcraa/airport_initiatives/noise/anac.aspx

MF Buildings Conference Chicago, importance of national dataset -
http://homeenergypros.lbl.gov/group/multifamilybuildings/forum/topics/multifamily-buildings

DSIRE database -
http://www.dsireusa.org/

New Jersey On-bill financing program: SaveGreen
http://www.savegreenproject.com/

New York's Greener, Greater Buildings Plan
http://www.nyc.gov/html/gbee/downloads/pdf/greener_greater_buildings_plan.pdf

Deutsche Bank Study recognizes energy efficiency benefits in multifamily housing
https://www.db.com/usa/content/en/ee_in_multifamily_underwriting.html

Bright Power in Minnesota
http://www.brightpower.com

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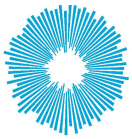

Living Cities

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