

# **Swiftly and Massively: Moving 115,000 Units of Multifamily Affordable Housing to Higher Efficiency**

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## **ABSTRACT**

Fact: Utility costs are the largest controllable expense for multifamily building owners. Fact: Public subsidies for affordable housing have been steadily declining. So, what did Stewards of Affordable Housing for the Future (SAHF), an association of the country's largest nonprofit affordable housing providers, do to help its members put their portfolios on a more sustainable footing? It developed The Big Reach, which committed all members to lowering energy and water use throughout their portfolios. Big time.

SAHF's members own and operate more than 115,000 affordable housing units across the country. SAHF worked with Vermont Energy Investment Corporation to create an audacious program, committing each member to reduce energy and water use by at least 20 percent portfolio-wide, including energy paid by owners and residents. The portfolio-level thinking helped change organizational culture, moving members to identify systemic causes of high energy use, including operations and maintenance practices. The program offered multiple paths to meet members at different starting points.

Two years into implementation, the program has engendered high levels of savings. Members regularly share successful strategies and practices, building momentum for additional savings. Initial apprehension about big-data requirements was replaced by understanding the value of data. The focus on systems led Preservation of Affordable Housing to create a benchmarking protocol that uses work orders to identify efficiency opportunities.

SAHF and its members have used the experience to suggest policy changes to make subsidized housing retrofits easier and more effective. The rapid success offers lessons for scalability in this hard-to-reach market segment.

## **Introduction**

Stewards of Affordable Housing for the Future (SAHF) is a nonprofit affiliation organization of 11 of the largest, high-capacity nonprofit affordable housing developers in the country. This membership is brought together by the needs of portfolios that stretch across state boundaries. SAHF's membership owns more than 115,000 units of affordable housing in 49 states, the District of Columbia, and Puerto Rico.

SAHF and its members turned substantial attention to energy issues in 2007, based on an acknowledgement that energy and water costs were a significant share of operating costs and an opportunity to yield savings through data-driven, strategic management. Initial work focused on gathering owner-paid utility data and information on building configurations as well as property-level retrofits, often driven by opportunity, or small-scale demonstration projects. The impetus to organize work around a larger initiative, The Big Reach, came from a desire both to systematize internal efforts as well as to increase collaboration on energy and water reduction strategies.

Energy and water costs represent one of the largest parts of operating budgets for most affordable housing properties. Sustained or sudden increases can very quickly move net operating income for a property from positive to negative. Unlike market-rate housing, where rents can be adjusted to cover higher operating costs, most affordable housing providers are constrained in rent increases by funding covenants. While owners and managers can do little to reduce costs for financing, insurance, and personnel, there are many tested and proven ways to reduce energy and water costs. As energy and water costs continue to increase, with higher volatility and wider, unpredictable swings, reducing these costs in real and sustainable ways becomes an important part of mitigating future cost risk and an integral component of strategies to preserve affordable housing. The Big Reach was initiated as a strategy to (1) reduce operating costs; (2) reduce energy and water rate risk exposure; (3) promote change within affordable housing regulatory structures; (4) influence utility incentive programs; (5) change organizational cultures; and, (6) attract resources.

While reduction in operating costs was a high priority, it is useful to acknowledge that in subsidized affordable housing, “cost effectiveness,” as generally defined in the energy efficiency community, is less important. It is difficult to measure the cost effectiveness of reducing risks of future energy price increases and the deleterious effects that those could have on an affordable housing property.

SAHF undertook an extensive process to develop The Big Reach initiative. SAHF envisioned a numeric, time-constrained target related to energy and water efficiency, but the specific parameters of the initiative were developed in collaboration with the members and by examining similar programs.

## **Member Needs**

In order to understand better the opportunities and challenges for decreasing energy and water costs, SAHF commissioned Vermont Energy Investment Corporation (VEIC) to survey SAHF membership on energy issues and practices. VEIC is a nonprofit organization, founded in 1986 to reduce the economic and environmental costs of energy use, with a specific focus on serving low-income populations and the organizations that serve them.

The surveys were intended to elicit information regarding philosophies, approaches, portfolio attributes, and work to date that focused on resource efficiency and other “green” attributes. In particular, members were asked to self-report successes and challenges in work, ideas, and hopes for the sustainability of their portfolios in the future, and thoughts on the best role that SAHF could play to help in reducing energy and water costs.

Two survey instruments were developed, targeted to two different respondents: one for SAHF member senior executives (generally, but not always, the executive director), and one for members of the SAHF Energy Peer Group (EPG), a group that includes the primary person responsible for energy performance for each member.

One question for the EPG was to what extent energy use and costs related to owner-paid accounts were currently tracked. The responses are shown below. The initial survey results indicated that while most SAHF members tracked utility spending, only a few tracked their consumption (in terms of kWh, therms, gallons, etc.).

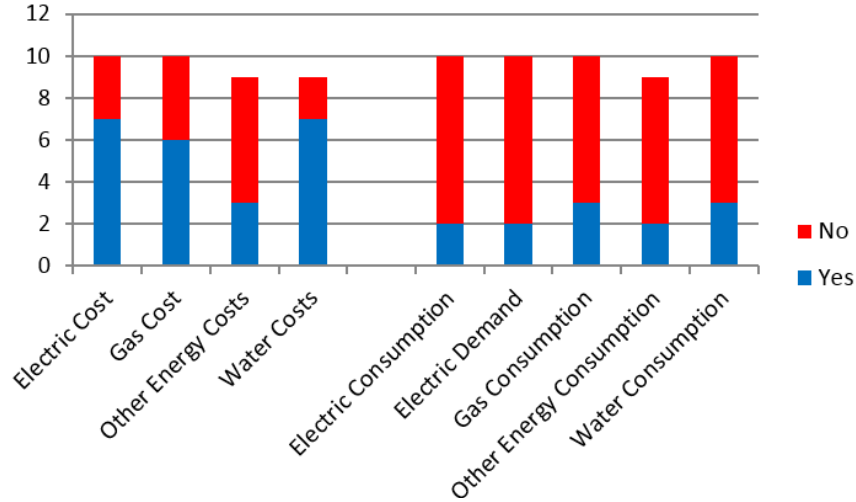


Figure 1. Tracking of energy and water use and costs, pre-Big Reach.

Each responding member provided an estimate of what percent of property operating costs are devoted to energy and water costs. Seven members responded, with estimates that ranged from a low of 12.5% to a high of 35%, with an average of 20.6%.

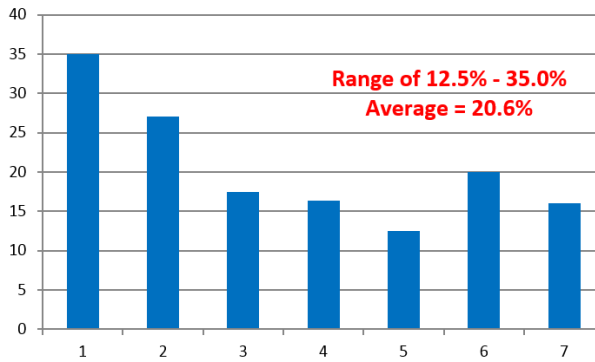


Figure 2. Energy and water costs as a percent of operating costs.

EPG members were asked what percent of their energy costs and use could be reduced if there were no constraints on resources. The low percentages given were 5% (cost) and 10% (use); the highest was 90% for both; most answers clustered in the 20-30% range. When asked if those costs were stable or increasing, six respondents reported moderate increases, three reported dramatic increases, and four reported stable or declining costs. Total responses on this question are higher than the number of respondents, because some broke out the answer with respect to water, electricity, and natural gas.

## The Big Reach Proposition

Ultimately, stakeholders agreed that The Big Reach should (1) be simple to understand and communicate; (2) be aggressive; (3) be doable; (4) focus on the whole building; (5) include

discretionary retrofit; (5) include staff and resident engagement; (6) encourage renewable installations; and (7) be able to attract resources.

Through the survey work and facilitated conversations with the EPG and SAHF's Board of Directors, SAHF established The Big Reach proposition:

*SAHF members will lead the industry in the long-term preservation of affordable housing by reducing energy and water use portfolio-wide by 20% by 2020, achieved through a mix of energy and water efficiency, energy and water conservation, and renewable energy.*

SAHF and its members took on this charge with the understanding that it was “audacious but achievable.” Yet at the start of The Big Reach, many members found it more audacious than achievable. Two early implementation activities – establishing the baseline and formulating work plans – helped to address whether The Big Reach was a bar that could be attained.

## **Establishing the Baseline**

Members had expressed a strong preference that The Big Reach not require benchmarking of their full portfolios. The initial survey results, as referenced above, indicated that most did not have sufficient records of energy consumption necessary for a calculated baseline. Members preferred to use staff resources to improve energy performance rather than gathering past energy records. Additionally, the costs of such portfolio benchmarking are not allowable under most U.S. Department of Housing and Urban Development (HUD) funding, providing additional disincentive for benchmarking.

Members preferred to rely instead on a combination of historical data on their owner-paid utilities and publicly available data on national averages for multifamily housing to set their baseline. The Energy Information Administration Residential Energy Consumption Survey (EIA RECS) reports national averages across all multifamily buildings. RECS data from 2009 indicate the average annual energy use per household for units in buildings with 5 or more units is 46.3 million British thermal units (MMBtu).

That figure closely mirrored data from an earlier SAHF effort in which members had collected cost and consumption data for 548 properties with 41,511 units from the period 2009-2010. Those data were principally comprised of owner-paid utilities but included 152 master-metered properties with 11,572 units. Analysis of these properties in Bright Power's Energy Scorecards benchmarking tool showed that the master-metered buildings in the SAHF portfolio had average energy use of 44.6 MMBtu per unit per year.

SAHF adopted baseline energy use between these two very close figures, using 45 MMBtu per unit. Using publicly available national averages for water use reported by the National Multifamily Housing Council, but without corroborating usage data from its own portfolio, SAHF adopted 52 gallons per person per day as baseline water use. (Per person figures are then translated into per unit figures via well-accepted norms of numbers of persons per bedroom used in affordable housing.)

The primary advantages of these baselines are simplicity and the fact that additional data-collection resources were not required to establish the baseline. The 2010 baseline also served the purpose of allowing members to benefit from their recent energy and water efficiency efforts. There was no need to adjust baselines for occupancy as no significant change in occupancy,

positive or negative, was anticipated from activities associated with The Big Reach. The primary concerns that had been expressed by members, through the member surveys and at EPG meetings, were the inability to address regional variation and prior energy reduction activities. Either of these two concerns can be addressed at the member's option. Should a member opt to provide data that shows its per unit starting point is substantially different than the SAHF and national averages, then that baseline can be used as the starting point. The data to establish such a revised baseline would need to include both owner- and resident-paid utilities for a significant and representative portion of a member's portfolio.

With the scale of the portfolio participating in The Big Reach, a 20% savings against this baseline means that in 2020, the SAHF members will have saved an estimated 1,000,000 MMBtus of energy and 700,000 kilogallons of water.

## **Formulating Work Plans**

The member surveys and the EPG both emphasized the importance of flexibility in ways to achieve The Big Reach goal. This is necessary as there are significant differences among members in portfolio characteristics, new development activities, access to utility programs, etc. Multiple paths were developed to reduce energy and water use, and under The Big Reach members can choose the most appropriate set of activities for their respective organizations. Each member worked with SAHF to create a work plan that incorporates the member's choice of the paths listed below. The pathways provided a framework for each member to outline a way to reach 20% reduction against baseline.

- Improved O&M / Retro-commissioning – Engage O&M personnel, whether in-house or contracted, to deepen energy savings through continuous energy improvement, including retro-commissioning.
- Resident Engagement – Engage residents in meaningful and ongoing ways to deepen energy savings through efficiency and conservation, whether those savings accrue to residents or owners.
- Appliance / Equipment Upgrade at Time of Purchase – When replacing appliances or equipment that use energy or water, purchasing the most efficient cost-effective appliance or equipment available.
- Deep Efficiency at Acquisition / New Construction / Major Rehabilitation – Targeting 50% greater energy efficiency than the average existing unit. Includes all cost-effective improvements at the time of a major rehabilitation or in new construction, with a strong emphasis on building shell (air sealing and insulation) and all major mechanical systems.
- Deep Efficiency Discretionary Building Retrofits - Targeting 20-40% savings through deep retrofits (can be combined with moderate rehabilitation). Includes replacing major mechanical systems and significant building shell improvements.
- Medium Efficiency Discretionary Building Retrofits – Targeting 10-20% savings through retrofits that may include replacing major mechanical systems or building shell but generally not both.
- Light Efficiency Discretionary Building Retrofits – Targeting low levels of savings through retrofits that address quick payback measures such as lighting, low-cost water saving measures, or select appliances. Frequently driven by available utility incentives or other energy programs.

- Solar Domestic Hot Water – Applying high level screens (e.g., properties with central hot water in jurisdictions with favorable tax or renewable energy credits) across portfolios, with detailed assessments where appropriate, and installations where cost effective.
- Solar Photovoltaic – Applying high level screens (e.g., properties in jurisdictions with favorable tax or renewable energy credits or where power purchase agreements are available) across the portfolio, following up with detailed assessments where appropriate, and installation where cost effective.

For the work plan template, SAHF worked with VEIC to estimate what percentage savings it would be reasonable to achieve on a per unit basis from each pathway. The table below shows the average projected energy and water savings for each pathway.

Table 1. Estimated savings per unit and percent of units reached

Big Reach pathway	Energy savings	Water savings	Percent of units
Improved O&M / retrocommissioning	4%	2%	100%
Resident engagement	2%	1%	100%
Appliance / equipment upgrades	1%	20%	25%
Deep efficiency @ construction / rehab	50%	33%	15%
Deep efficiency retrofit	30%	20%	2%
Medium efficiency retrofit	15%	5%	15%
Light efficiency retrofit	4%	5%	20%
Solar DHW	20%		10%
Solar PV	9%		10%

The Percent of units column provides the estimate of the percentage of units across all portfolios that would be subject to each activity. The table above is an illustrative example of the mix of activities that would achieve a 20% portfolio-wide savings. Through the work plan process each member identified its own level of activity for each pathway. To develop work plans, each member gathered a team of senior employees within their organization to map utilization of these different pathways, based on the characteristics of their existing portfolios and expected acquisitions or major new construction. For the smaller SAHF members, this was a fairly granular analysis, identifying likely interventions on a property-by-property basis. The members with larger portfolios took a more broad-brush approach, thinking through historic patterns and expected trends.

## Work Plan Results

The work plans generated increased confidence that the 20% savings goal was achievable. All members formulated and adopted plans that generated at least 20% savings, with many members exceeding the 20% goal. One member with a particularly aggressive plan for expanding and rehabilitating its portfolio put together a plan for 45% energy savings. The unit-weighted average savings across all portfolios was estimated at 28% savings. Work plans for water proved to be more of a challenge. While the average for the SAHF members as a whole was 21%, three members finalized their plans with expected savings of less than 20%. The estimate of less than 20% was not a cause to be satisfied with lower savings levels but rather pointed to the need for improved technologies or additional approaches to saving water.

The aggregated work plans provide a view of which pathways are expected to provide the greatest savings. The chart below shows the share that each pathway is expected to contribute to the total energy savings, with the three levels of retrofit consolidated into one category.

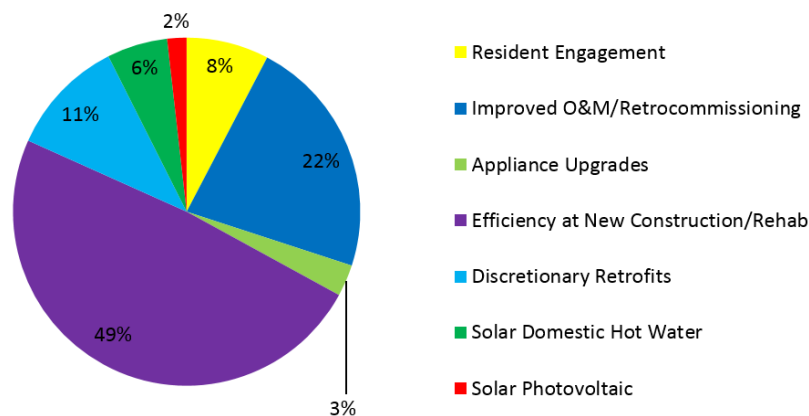


Figure 3. Share of expected savings by pathway.

There are two pathways that contribute the largest share to expected savings, and different factors are driving each. Efficiency at New Construction / Rehab has a very high share largely because of the very large per unit savings that this pathway delivers. While the original estimate was that 15% of all units would be addressed via this path, when work plans were created, with known new development plans, one-third of the portfolio will be touched with these deep savings, making it the largest contributor of savings. In contrast, the pathway contributing the second largest share of savings –Improved O&M – draws its power not from a high level of expected savings per unit but rather from its widespread implementation. Each member has committed to making improvements in its O&M practices, which will be driven by organizational policy and protocol and reach across all units. By committing to an activity that is expected to generate only 4% energy savings, but doing it *across entire portfolios*, O&M became the second most important savings pathway in The Big Reach.

While the work plans gave members comfort that the 20% goal is achievable, they also drove home the need to achieve high savings when undertaking these different pathways. This was brought into focus particularly for energy efficiency at new construction or major rehab, for which an ambitious level of savings from each property was included. The overall energy savings of 28% drops rapidly if the level of savings achieved from that one pathway is reduced.

The aggregated work plans revealed another strength of The Big Reach: the power of moving from project-based to portfolio-based planning and commitment. Although not every property will achieve a 20% reduction, it is expected that the vast majority of properties will participate in The Big Reach through more than one of the savings pathways. Indeed, looking at the total number of interventions compared to the total number of units in the 2020 portfolio, each unit will receive approximately four interventions under The Big Reach.

### Implementation – What the Numbers Say

After formulating work plans, SAHF turned its attention to tracking the activities contributing to The Big Reach savings goal. The tracking was organized around a similar but slightly different model than the work plans. For tracking purposes, members were not interested in tracking routine activities such as O&M, resident engagement, and appliance replacements at

the property level. For these pathways, members track changes related to organization-wide policies and practices or special initiatives, such as when they update procurement policies or hire new staff who support The Big Reach. The savings for such organization-level activity are not “captured” quite as readily as the estimated savings for efficiency measures based on the installation of products or equipment. The other less frequent and more capital intensive pathways, are tracked at the property level. Eventually all savings will be captured via pre and post consumption data for those properties that collect full consumption.

Each member shares information with SAHF quarterly on a standard template, which includes basic information about work completed and, as available, more detailed information on the costs, sources of funding, implementation partners, and the projected consumption and cost savings. The extent to which these data are available varies by data point, as well as by pathway and by member. Installation cost is the most widely available data point, available for 75% of records. Projected cost and consumption savings are available for about half of all records, and all of these fields are available for only a third of all records. Cost and savings data are more readily available for the discretionary retrofit pathway, with the majority of these records having all three data points. For major rehabilitation projects, cost is widely available, but projected savings are not. Less data are available for other pathways.

Members began tracking in 2014, and there is now more than a year’s worth of data available for analysis. Although the work plan and tracking categories do not fully match, combining certain categories allows a comparison between how the work to date compares to the levels laid out in the work plans. The charts below show relative shares for the different pathways, as predicted in the work plan and as actualized in reporting to date.

Through the end of 2015, a total of 23,845 units (21% of all portfolios) have been addressed with at least one energy or water saving measure. This work encompasses 273 different properties (17% of portfolios). While data on cost are not comprehensive, it is clear that the largest cost share is borne by capital events (nearly 65%) such as new acquisition or refinancing. The second largest funding source is utility incentives at 12.5% of total costs. Other sources of funding include property reserves, operations, and grants.

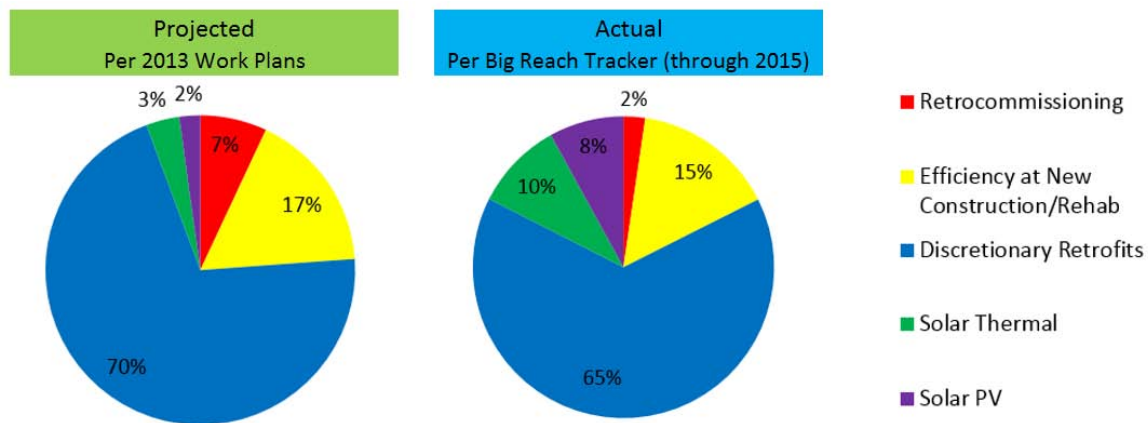


Figure 4. Projected and actual percent of units served, by Big Reach pathway.

On the basis of units served, discretionary retrofit leads by far, both in planning (70% of units) and implementation to date (65%). This tends to have the lowest cost, especially when utility incentives are available. Two pathways are being implemented on a greater number of



units than planned: Solar PV (3% planned; 10% actual) and Solar Thermal (2% planned; 8% actual). This larger-than-expected share is largely driven by policies in two jurisdictions. California’s commitment to installation of solar on affordable housing was evidenced recently with a dramatic increase in funding of the Multifamily Affordable Solar Homes program. Washington, D.C., supports the market through generous Solar Renewable Energy Credits.

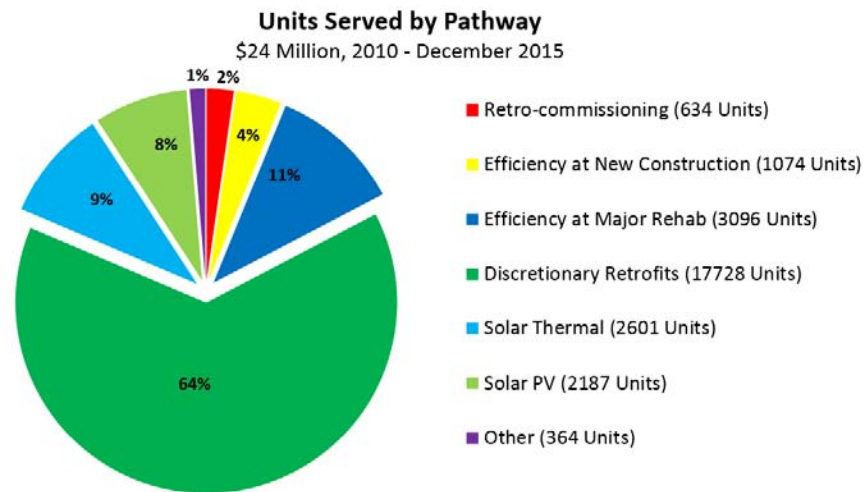


Figure 5. Units served, by pathway, 2010 - 2015.

## Implementation – The Influence of People

Energy and water conservation isn’t all about tapping into utility programs, installing solar, or even net zero design at new construction. Variances between projects or units are often driven by the actions of the people who work and live there. In taking on The Big Reach, SAHF members committed to addressing the behavioral elements of energy and water efficiency.

The work plans point to improved O&M practices as the second largest potential source of savings. SAHF has developed a multifamily energy savings toolkit that focuses on O&M practices. The heart of the toolkit is checklists. O&M is an everyday activity; the routine inspection of building systems to identify and eliminate waste is highly conducive to a checklist approach. The toolkit is an extensive resource for what to monitor, along with when and how, and includes flags for what conditions require follow up.

While the toolkit has resources that are applicable to any multifamily building, not all of the resources are applicable to all properties. Additionally, most properties already have existing systems in place to address some issues. The toolkit provides a means to evaluate and improve existing practices and policies. Reviewing existing checklists against those provided in the toolkit to identify key areas for improvement was one of the activities certain SAHF members undertook as part of a wider effort to improve O&M practices. In *O&M Roadmaps* individualized to the needs of each organization, SAHF members identified resources needed to support O&M goals. Developing these resources was supported through HUD technical assistance in support of the Better Buildings Challenge. SAHF members worked with the New York based consulting firm Bright Power to develop resources that included revised contracts with third-party maintenance providers, troubleshooting guides for certain common central HVAC systems, and analysis tools for using work order data to identify savings opportunities.

## **The Big Reach: Increasing Energy Management Capacity**

The Big Reach is reducing energy and water savings while also prompting expanded capacity for managing utility consumption at the portfolio level. A common first step is collecting utility data. For a large portfolio of multifamily properties, though, these data often prove elusive. A multi-state portfolio might encompass thousands of accounts across hundreds of energy and water utilities, each with its own tariff structure and billing. Processing utility bills has historically been decentralized with each property responsible for tracking and paying its own bills, making portfolio-level energy management difficult.

The Big Reach has prompted members to invest in the capacity to centralize the collection and analysis of utility data. Nearly all SAHF members have hired dedicated energy staff and established plans to implement data collection and portfolio benchmarking. In a survey from June 2015, seven members indicated that owner-paid utility consumption data is organized and available to them *on a consistent basis*. This is a significant increase over data availability before The Big Reach, when only three members were tracking energy consumption.

SAHF members report positive early returns on these investments, including identifying conservation opportunities, tracking current efficiency efforts, and even some non-energy benefits like reduced utility late fees. There have also been increased network benefits as energy staff share data and practices with their peers and expand best practices and new approaches.

This new energy management capacity extends beyond utility analysis to include analysis of work orders as a way to identify savings opportunities. Analysis at one property, for example, turned up a high number of work orders for bathroom lightbulb replacements. This prompted a change from fluorescent to LED fixtures, resulting in energy and maintenance savings.

Despite the positive early Big Reach returns, challenges remain. It has proven particularly difficult to find a scalable approach to the regular collection of tenant-paid utility data. Obstacles include inconsistent utility data privacy requirements, a lack of clear operational savings as a result of tenant conservation, and the sheer volume of tenant utility data generated by a large portfolio. Without tenant data, a whole-building picture of energy use remains elusive.

Though progress has been made increasing resources available for energy management, it occupies a humble position in each organization's hierarchy. A survey of member energy managers indicates frustration about the level of commitment to conservation. Some of this is attributable to the newness of this function, but there is work to do to move energy management up the list of organizational priorities. Continued success in reducing energy and water consumption and costs will go a long way toward advancing the importance of these efforts.

## **Member Perspective on The Big Reach: Preservation of Affordable Housing**

Preservation of Affordable Housing (POAH) is a SAHF member with a portfolio of close to nine thousand affordable apartments in ten states. Joining The Big Reach was a natural extension of POAH's ongoing conservation efforts. Participation in The Big Reach has not radically altered POAH's approach to conservation, but it has imposed necessary structure and raised the profile of these efforts within the organization.

As mentioned, POAH has pursued energy and water savings for some time, but mainly focused on installation of equipment in existing properties. Many of the other pathways to conservation emphasized by The Big Reach had been neglected, including O&M and Resident Engagement. The Big Reach has prompted POAH to actively pursue savings in these neglected

areas, including work to develop metrics to measure O&M performance. POAH is embarking on a preventive maintenance pilot that targets both conservation and the extension of useful life of critical building systems that impact energy and water consumption. POAH's energy staff recently presented opportunities for resident energy engagement at a series of meetings for property staff hosted by POAH's Resident Services department. The increased profile of energy work in the O&M and Resident Services groups is a consequence of Big Reach participation.

The Big Reach has impacted POAH's property development. In the past POAH incorporated efficiency into new construction and rehabilitation, but often neglected to set savings targets. Because energy efficiency at the time of property development is a major pillar of The Big Reach, POAH development staff has been encouraged to set property baselines and expectations for savings associated with the investments in energy efficiency made during the development process. For several new construction projects, POAH has worked with vendors to model building energy consumption. The process is not yet perfect and the savings projections provided by vendors vary in accuracy, but The Big Reach has prompted POAH to evaluate both the expectations and performance of these significant investments.

From a practical standpoint, Big Reach reporting requirements are quite manageable. The quarterly reporting cycle provides adequate opportunity to record progress on key Big Reach activities and imposes discipline on several organizational activities that, in the past, went undocumented. The reporting form becomes a valuable record of expected savings and serves as a reference for post-project evaluation of realized energy and water savings.

## **Breaking Down Barriers, Raising the Stakes – Policy Changes**

When SAHF members took on The Big Reach, part of the rationale was that having a numeric goal would help to change internal organizational cultures in ways that supported broader and deeper efficiency initiatives. At the same time, past experience pursuing energy and water efficiency clearly demonstrated that this work also faces external barriers. The 20% goal required mobilizing for policy changes that would expand the horizon of what was possible.

A breakthrough came early. Amid the many actors who influence efficiency in affordable housing, HUD plays a leading role. The Big Reach was intended to draw its attention and generate policy change, and a move in that direction came quickly. The Department of Energy's Better Buildings Challenge (BBC) to date had addressed only commercial and industrial partners. Seeing SAHF members commit to 20% savings at the portfolio level helped convince HUD to partner with DOE. In December 2013, seven months after the launch of The Big Reach, HUD and DOE announced the expansion of the BBC to multifamily housing. The SAHF members were eleven of the fifty inaugural Multifamily Partners to the BBC.

The DOE BBC has provided a forum for collaboration and a venue for HUD to test certain "policy flexibilities" that could help owners realize savings. SAHF had met with HUD to discuss regulatory changes that could help owners of HUD-assisted housing improve the efficiency of their buildings. With the launch of the BBC for multifamily buildings, HUD announced its intention to develop policy incentives for BBC Multifamily Partners. These were:

- A management add-on fee to help cover the cost of certain energy management activities
- Expedited review of requests to use replacement reserves for certain energy measures
- An incentive for properties with Project Rental Assistance Contracts (PRAC) to generate utility savings through retrofits

- A new way for properties that had participated in HUD’s Mark-to-Market program to access that program’s Incentive Performance Fee
- A policy for allowing properties to participate in on-bill finance / repayment programs
- Increased distributions for Section 8 properties

The first four of the above-listed incentives are available at the time of this writing, and the first two have had the greatest impact. Allowing a management add-on fee has proved helpful as an incentive for green O&M, resident engagement, data collection, and data analysis. It is an incentive and a guide as to what activities are considered key to strategic energy management. Similarly, the value of the replacement reserve incentive goes beyond its benefits for moving transactions along; the list of activities eligible for incentive provides guidance on measures eligible for use of reserves. The PRAC incentive has great potential in overcoming the split incentive between owners and HUD for some properties, but its implementation has been slow as owners work through the intricacies of how to implement the policy.

These incentives will inevitably interact with other influencers of how successful The Big Reach will be in achieving deep reductions in energy and water consumption in the HUD-assisted portfolio, but HUD’s leadership in this realm creates real opportunities and sets a tone for policymakers and housing providers who have not yet taken on a reduction commitment.

## **Lessons Learned**

SAHF’s Big Reach has been a powerful catalyst to reducing energy and water consumption and costs in multifamily housing. The Big Reach has organized energy and water reduction efforts to drive change at specific properties and at the organizational level.

Since launching The Big Reach, SAHF members are increasing their capacity to manage energy and water by hiring new personnel, investing in data management, and adopting portfolio-level tools and standards. Energy managers have to engage colleagues throughout their organizations’ many departments and work with them to make progress toward the ambitious Big Reach goals. As a consequence, conservation gets woven into the process, from property development, to ongoing operations and maintenance and resident engagement.

The quarterly reporting requirements help impose discipline on the participating organizations and encourage them to consider how to best collect and manage the data from conservation activities. The reporting also reveals the importance of allowing flexibility within a program like the Big Reach. Although certain activities such as accessing utility programs are widespread, each member assesses the various savings opportunities at different levels to create their own trajectory to the 20% savings goal.

The model can be used by other similar associations, which can play a powerful role in setting sectoral goals, identifying and addressing barriers through tools and / or partnerships, and establishing performance standards. Being part of a group working toward a shared goal also provides valuable opportunities for peer exchange and fosters healthy competition among peers. SAHF facilitates this peer exchange and competition through regular meetings of energy managers and progress reports to senior leadership.

SAHF engages with policymakers to expand the horizon of what is possible for housing providers. A successful Big Reach will amass significant levels of energy and water savings with concomitant cost savings, and will stretch the capacity of those who serve this industry so that targeting deep, broad savings is less audacious and even more achievable.