MULTI-FAMILY

Journal of Utility management

THE LATEST RESEARCH AND MODELS FOR OPTIMIZING UTILITY USAGE IN MULTIFAMILY

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REALPAGE

the power of connecting

ENERGY SUMMIT **2019**

SPECIAL EDITION

MUST READS

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CONNECTING WITH

The power of data

Data is everywhere. Everything we do with any consistency can be broken down into specific data points, then trended and analyzed. We see it every day. From our phones telling us how long it takes to get to work without our asking, to suggested Amazon purchases in our Facebook feeds, to cold calls and spam email—our actions become someone else's data point because our actions have become predictable. Apartment utility data is no different.

Apartment communities, like people, have routines. Consumption increases and decreases at certain times of the day and certain times of the year. When an apartment community falls out of its routine, breaks its normal cycle, there has to be an outside force impacting that community. Could be weather, or the market. Could be an increase in occupancy, or it could be a leak. To find out, you only have to look at the data.

How do you look at your utility data? If you grab a stack of bills and start leafing through, page by page, searching for discernable trends, you won't get far before deciding there has to be a better way. Having someone in your organization—or a few someones—reviewing the bills and logging key data points into a database where reports can be run against the data is one way to go. Outsourcing the process is another. In the interest of full disclosure, I've been an advocate for outsourced invoice processing for years. If I admit my bias upfront, hopefully you'll forgive me going forward.

Extracting data from your utility bills and placing it into a usable format is absolutely necessary in order to manage your utilities.

The data that exists on your utility bills is extremely powerful. Comparing it to occupancy data can reveal whether a spike in consumption was due to increased occupancy. It can also be used to pitch a cost saving retrofit. Every retrofit I've done started with an internal analysis of our utility data. Then that data was sent to a vendor to be used as the basis for their analysis.

Without such data, I would never have gotten any retrofit projects approved. My broker has access to my utility data as well. It's the basis of their cost benefit analyses that recommends when I should consider locking electric and gas rates.

EPA wants our data, too. Apartment communities across the country are entering their utility data into EPA's Portfolio Manager tool in order to score the energy efficiency of their property against similar product.

What does this all mean?

I think it means that data is powerful. Those who have easy access to their utility data can make impactful decisions quickly. Those who don't will waste precious time gathering information, rather than taking action. A wise person once told me that no one wants the haystack. Just give them the needle. Having access to the data enables you to do exactly that.

Timothy Haddon
Director of Strategic Business Services
PK Management

Connecting with value

The expression: "No one wants to be sold but everyone wants to buy," speaks volumes. We're a world oversold. It's become white noise in an echo chamber of too much.

Mark Jewell got it right (page 4). Not just about selling retrofits and energy conservation projects up stream in our operations, but also as a guide for life.

If we lead with value—to our residents, owners, lenders, anyone—the interaction shifts from selling to service.

Good business is the exchange of something of value—housing, automated billing systems, LED lighting retrofits—for some kind of return, usually monetary.

If we lead with value, being of service to our constituencies, from resident to boss to investor, it changes the framework, and usually the conversation, from negotiation to partnership. It shows empathy, alignment, intention—even respect for the person to whom we're presenting.

Next question, and this is a big one: how do we lock down a value model from the perspective of our owner, manager or investor?

In performance-driven operations, all roads lead to data. Energy especially is a moving, living thing. Its lifecycle travels through production, financial markets, consumption. It's a complex interaction with hundreds of data points. Capturing this data is the first step in quantifying risk and opportunity. Building complex data streams into consistent, easy-to-read summaries communicates important trends and future events.

It's this connection with the past that allows us to be responsive to the future. We do this through benchmarking and then setting metric-based goals for improvement.

As the largest repository of industry data, strongest bench of experts and provider of automated processes that deliver analysis at velocity, proving value is our highest purpose. It's not selling. It's partnership.

Jason Lindwall
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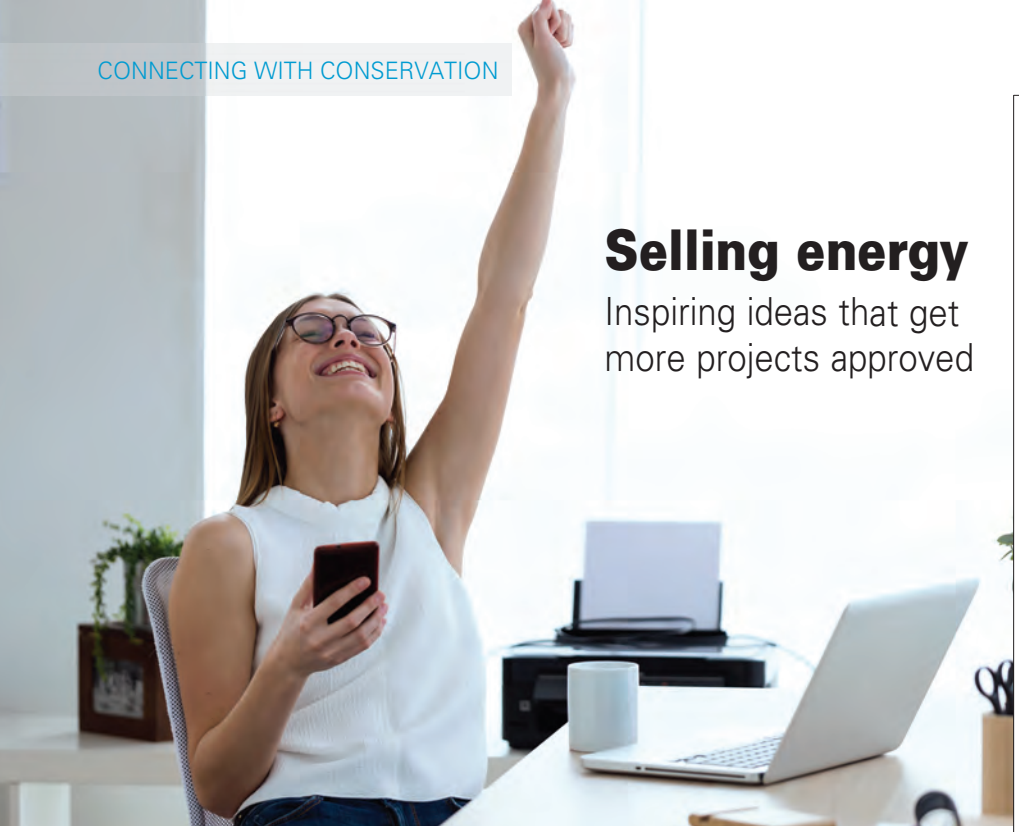

Selling energy

Inspiring ideas that get more projects approved

A casual observer would assume that *vendors* and *contractors* sell energy projects to multifamily building owners. In reality, the energy managers and other internal champions connected to those buildings wind up doing most of the selling.

MARK JEWELL

They're the ones who lobby to gain consensus among their peers in property management, facilities and engineering, persuade senior management to prioritize the initiative, and ultimately convince capital budgeting to approve the needed funds. And if the residents' cooperation is needed to make the proposed initiative a success, those residents need to be sold on the idea as well.

With all of this *selling* going on, energy managers are smart to embrace two winning strategies commonly seen among the world's top sales professionals. The first is understanding all of the benefits of your proposed initiative and then expressing them in ways that resonate with your prospect. The second is ensuring that all communication with your prospect is both compelling and concise.

Let's talk about benefits. First, understand all of the benefits your proposed initiative could provide: utility-cost financial, non-utility-cost financial, and non-financial. While utility-cost financial benefits may be the most obvious, they are rarely the most compelling.

Non-utility-cost financial benefits include improved resident retention or attraction, higher rental rates, lower capitalization rates, and/or higher asset value—all of which are factors that handily trump energy savings. This is especially true in situations where residents are submetered for a large portion of the building's energy use and would receive the lion's share of any savings.

Moreover, some seemingly non-financial benefits (that is, securing a high Energy Star score as a result of improved energy performance, or seeing a rise in resident satisfaction as a result of improved thermal comfort or better lighting quality) can drive additional non-utility-cost financial benefits (that is, improved resident attraction/retention).

Take the time to explore these types of interactions between benefit categories. Fortunately, there are plenty of case studies where energy-efficiency and other sustainability initiatives have produced a wide variety of benefits beyond utility-cost financial savings. Compiling the evidence you need for your proposal should be fairly easy once you start looking.

In all things, communicate value

There is a second important dimension of sales professionalism that energy managers would do well to embrace: ensuring that each and every value proposition is communicated in a compelling and concise way. Have the benefits of your proposed initiative been reframed so that they can be measured with the yardsticks that your decision-maker is already using to measure success?

For example, could you equate your project's annual energy and maintenance savings to a number of additional rental months, or a certain percentage increase in rental rate, at the subject property?

Of course, no matter how compelling your proposal is, if no one reads it, project approval will remain elusive. Given the ever-shrinking attention span of today's decision-makers, your value proposition must be communicated in a single-page narrative combined with a one-page financial analysis. The narrative should have a compelling headline, quantitative targets that will be met if the initiative is approved, and a rationale for change that focuses on the *why* rather than the *what, how, how much and when*.

The one-page narrative should also include a high-level summary of projected costs and benefits; the steps taken so far to advance this initiative; and, one or more specific action steps that the reader is being asked to take. All of these points need to fit on a single page, blank on the back, that can be read in less than four minutes.

The financial analysis should also fit on a single page. It should feature all of the cash inflows and outflows over the analysis term. It should clearly list both the *popular* metrics (simple payback, return on investment and internal rate of return) and the *proper* metrics (net present value, modified internal rate of return, and savings-to-investment ratio).

Keep in mind, while the popular metrics are very commonly requested, they typically lead to suboptimal decisions, particularly when you're proposing higher-first-cost, longer-lived, premium-efficiency solutions. For that reason, both the one-page narrative and any oral presentation of the proposal should migrate the discussion away from the popular metrics and toward the proper ones in order to support the wisest decision.

Take the time to delineate the various benefits. Reframe those benefits so they genuinely resonate with decision-makers. And finally, use one-page narratives and one-page financial analyses to make your case. Remember, if your proposal isn't read, it can't be approved. And if it is read, and if your prospect can easily understand how your initiative would make the subject property easier to manage and/or more valuable, your chances of securing approval are greatly improved.

Author Mark Jewell is a best-selling author, speaker and nationally recognized energy efficiency expert.

(counter-clockwise) Rooftop solar panels heat the community pool. Solar PV need only light to generate energy. Japanese snow monkeys enjoy the benefits of geothermal energy, and finally, wind turbines in California.

Onsite energy generation and weather

A friend of mine and I were chatting about on-site energy generation and what to do when the seasons change. Specifically, solar pool heating.

"I turn my system off in the winter," he said. As we are in California and our climate is very mild, I was surprised.

"Why? What kind of system do you have?"

"It doesn't matter, he replied. "Solar only works in the summer."

Although his assumption was incorrect, he did get me thinking about the connection between the efficacy of onsite generation systems and weather.

Are some onsite generations only effective in certain climates and temperatures? Is there ever a temperature or time of year that requires you to turn that system off? The answer depends on the type of system that you have.

In the spirit of our ever-changing weather, let's look at a few systems and when they are optimal to produce energy, and if or when to shut them down.

Solar hot water systems

These systems are typically designed for the climate zone they are in. If you are in a freezing climate, these systems are typically designed and built with a non-toxic antifreeze mixture (not water) circulating in the collector, which heats the water in the tank. That means you can run it effectively in colder states. Granted, if your panels are coated with snow, you may not see a benefit, but if your system is designed for your climate, it should not need to be turned off in the winter.

Solar photovoltaic (aka, solar PV)

Photovoltaic systems require light to make energy and can operate all year long. While solar PV systems need light, they become less efficient in warmer temperatures. The colder the climate, the more energy the PV system creates. So solar PV systems certainly don't need to be turned off in colder climates. They work better.

Geothermal energy

Geothermal uses heat from the upper 10 feet of the earth that maintains temperatures between 50 and 60 degrees Fahrenheit all year long. Geothermal systems use this resource to heat and cool buildings, and there is no need to turn off these systems for any season.

Wind energy

Of all renewables, wind is the most contingent upon weather and can be impeded by temperature. Rain creates a drag on the propellers and hot temperatures cause low air density, both of which cause lower production. Also, extremely cold temperatures can cause parts to freeze, requiring the system to be shut down to avoid damage. That said, some turbines are designed to operate at temperatures as low as -22 degrees Fahrenheit.

I think that covers it. Now let's go for a dip in that solar-heated pool.

Mary Nitschke is the first president of the Utility Management Advisory Board, holds an Energy Resource Management Certificate from UC Davis, two BAs from UC Berkeley and is Director of Ancillary Services for Prometheus Real Estate Group, Inc. California.

Feeling good inside

The multifamily industry impacts millions of lives every day. As such, it is in society's best interest that multifamily professionals do what they can to create healthy indoor environments within their communities. Residents receiving the full benefit of healthy indoor air is a win for everyone.

Residents benefit when apartment communities in deregulated energy markets make responsible decisions—like procuring utilities from energy providers who value the environment. Industry experts exist to help multifamily operators identify and engage clean energy providers at competitive prices. This benefits the owner, resident and the environment. These services often include options that are not only affordable, but typically net cost savings and efficient billing processes such as *continuous service agreements*.

Resident utility billing service providers assist the multifamily industry by encouraging conservation by giving residents the opportunity to pay for consumption while recovering utility-related costs for the community operators and owners. Partnering with utility billing services reduces financial and legal risks and allows for accurate utility-related income and expense forecasts. This is a positive impact to everyone's bottom-line.

Multifamily operators should call on experts to assess lighting needs in order to limit light pollution. It is in the operator, owner, and resident's best interest to use the most efficient lighting available. This will address security concerns, while saving energy and money. Hiring lighting experts to audit apartment community lighting is most often a quick return on investment as project benefits and returns are easily quantifiable.

Highly-efficient HVAC systems that include smart thermostats are becoming standard within the multifamily industry. These efficient systems save energy and provide individualized options for comfort. Residents get the opportunity to pay for their comfort at the level they deem appropriate.

Developing a proactive mindset to resident health through integrated and supportive community operations is a great opportunity for the multifamily industry to continue to pursue. To do this most effectively, partnering with experts in these areas while setting up processes best suited for your organization will net excellent results for the residents, owners and operators.

Wes Winterstein has managed utility billing and expense management for tens of thousands of apartments. He specializes in conservation initiatives, procurement strategies in deregulated markets, and solid waste and recycling performance.

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Air flow

Inside air can be as much as five times more polluted than the air outdoors, according to EPA. Limited fresh air during the day can negatively impact mood, sleep and performance. Bad air is a health risk. It can irritate eyes, nose and throat, cause headaches, dizziness, fatigue, respiratory conditions, heart disease and cancer. Small steps, like adding potted plants known to purify air, can improve your indoor environments.

Circadian rhythm

Circadian rhythms influence sleep-wake cycles, hormone release, eating habits and digestion, body temperature and more. Exposure to natural light improves overall health and prevents disease.

Anti-allergen surfaces

The root of many health problems is inflammation. Triggers include allergens from pollen, pet dander, dust mite matter and more. These can be eliminated with hard flooring surfaces. The newest polymer materials not only look like real wood, but wear longer, clean better and can be more cost effective than replacing carpet.

We are indoors over 90 percent of our lives, according to EPA. This makes built environments a critical part of our sense of well-being and directly correlative to our health.

An apartment home is not only shelter and a safe haven, but an extension of our state of health. Stainless steel and open concept now blend seamlessly with science, research, behavioral data, microprocessors and sensors, and software programming. Well-designed and efficiently-operated apartments are ecosystems of living well. An apartment is home, but it's also an experience.

It's as much a state of mind as it is a lifestyle. We are only just beginning to learn that well-managed apartments lead to healthy residents.

In a good place

What goes into a healthy apartment? Here are just a few things that make an apartment space healthier and happier for residents.

MATERIALS Well-designed ventilation systems promote good indoor air quality

LIGHT is optimized with generous access to sunlight and healthy electrical lighting

BEDROOMS that promote sleep and relaxation and respond to circadian rhythms

SYSTEMS energy-efficient, low-emission heating, cooling, ventilation

SOUND INSULATION and dual-paned windows to promote quiet indoors

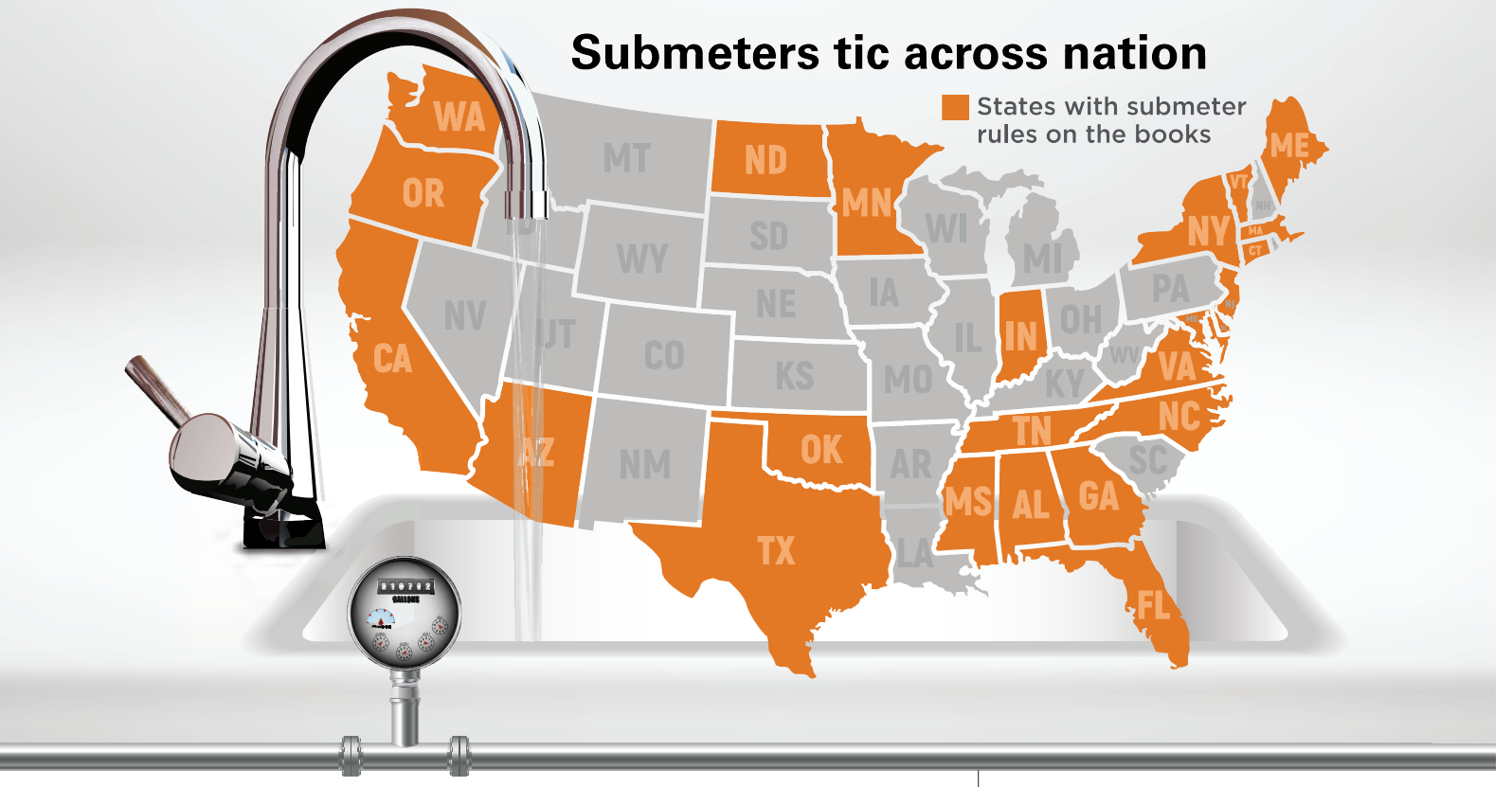
CONNECTED to local amenities, public transportation, pedestrian paths for walkability

LIVING SPACES suited for social engagement, relaxation, other activities

HARD SURFACE FLOORING easier to clean, longer lifespan, less allergens

COLORS that promote balance, well-being and relieve stress

SOURCE: WORLD GREEN BUILDING COUNCIL



Submeters in the balance

A little more than a year into California's mandate of submetering on all new apartments, water conservation continues to be a hot topic.

Effective Jan. 1, 2018, California SB-7 took effect and dashed the future of master metering. All new apartments are now required to meter individual consumption and provide billing on each unit. The law is part of an ongoing effort to monitor usage in a state that has been battling drought off and on for nearly a decade.

No official data has been released on the impact of submetering of multifamily, and its effectiveness may have been clouded by another year of taxation on water usage resulting from the drought.

While it had no specific apartment data, the California State Water Resources Control Board said that, of 88 percent of suppliers reporting, more than 291 billion gallons were saved in 2018 compared to the consumption in the pre-drought benchmark year of 2013. In December 2018, statewide potable water savings reached 18.4 percent compared to December 2013 potable water production for the 360 suppliers reporting.

But daily residential use (including indoor and outdoor) in 2018 was an average of 91 gallons per capita, slightly above 2017 usage. Overall consumption spiked in Southern California early in the year, and the state's total reservoir storage was down compared to the end of 2017, according to the U.S. Department of Agriculture's Natural Resources Conservation Service.

According to the USGS, California uses more water than any other state. Each Californian uses 181 gallons of water per day.

Last year lawmakers tightened the spigots even more, some of it aimed at multifamily.

In January, a code change from water conservation measure Senate Bill 407 went into effect to enforce the use of water-efficient plumbing fixtures—toilets, faucets, showerheads. If original fixtures are in place for apartments built before 1993, operators could face big fines.

By summer a law was signed that, effective in 2022, limits individual water consumption to 55 gallons per day; in 2030 it will fall to a limit of 50 gallons per day. Water districts that don't comply can face up to a $10,000 daily fine.

For more detail on submetering law in your state, log on to utilitysmartpro.com/submeter

Submetering is widely regarded as raising consumer awareness which leads to conservation and dramatically reduces consumption.

Industry veterans say that submetering is not only beneficial for water conservation in California but it can reduce utility costs and enhance the resident experience in any part of the country.

Submetering provides a rich set of data that can be translated back to the apartment operator and resident, identifying potential waste or leaks. Success stories where apartment operators have cut the total water consumption of their properties by 50 percent by switching from master metering to submetering are not uncommon.

That kind of success creates submetering evangelists who actively spread the word on the savings to be had to other owners and operators seeking efficiency improvements.

Water usage in apartments will remain in focus, at least in California. The State Water Resources Control Board is considering mandatory monthly reporting and has begun streamlining the reporting process. The board also plans to draft regulations for water loss control.

Author Tim Blackwell

Journal of Utility management

Why water rates **KEEP RISING**

52,000

MOST AMERICANS GET WATER FROM ONE OF 52,000 MUNI WATER UTILITIES (GOVERNMENT, INDEPENDENT, PUBLIC AGENCIES). ABOUT 15 PERCENT ARE PRIVATE OPERATORS.

Billions

COST OF EPA'S CLEAN WATER ACT LIMITING SEWAGE DISCHARGED INTO WATERWAYS. THIS MEANS CITIES MUST SPEND TYPICALLY BILLIONS TO UPGRADE.

$655B

WHAT THE COUNTRY MUST SPEND IN THE NEXT 20 YEARS TO UPGRADE WATER AND SEWER SYSTEMS

$2.6B

IN LOST DRINKING WATER DUE TO AN AVERAGE 240,000 WATER MAIN BREAKS A YEAR, BY EPA ESTIMATES

5.5%

ANNUAL INCREASE IN WATER BILLS—3X THE RATE OF INFLATION OVER THE LAST DECADE

4%

U.S. GOVERNMENT'S CONTRIBUTION TO COST OF LOCAL UTILITIES. REMAINDER IS BORNE BY CONSUMERS.

Water an EPA priority

Clean water is a serious environmental threat, according to recent statements by Environmental Protection Agency administrator Andrew Wheeler. The nation has also been battling an aging infrastructure for decades.

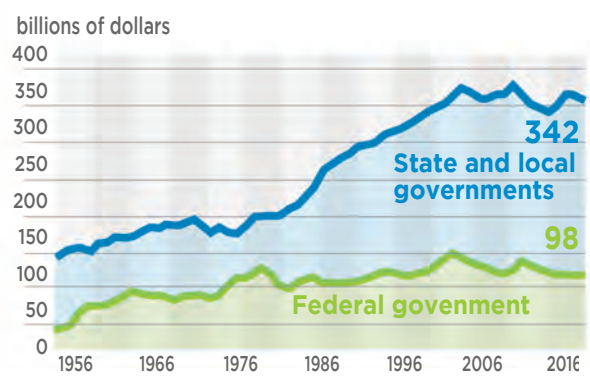
Bluefield Research projects that capital expenditures on U.S. municipal water, wastewater and stormwater infrastructure will rise 11 percent in the next decade, exceeding $683 billion by 2027.

Of spending, over half is planned for pipes, pumps and waterways that create collection and distribution networks. As utilities implement more sophisticated data-driven technology, including smart pumps and electric drives, operational efficiency will increase, but so will up-front cost.

SOURCE: US CONGRESSIONAL BUDGET OFFICE, 2017, BLUEFIELD RESEARCH, US LABOR DEPARTMENT, ENVIRONMENTAL PROTECTION AGENCY

Transportation, water infrastructure

spending by level of government



Public spending on transportation and water infrastructure is 2.3 percent of gross domestic product, below the 3.0 percent peak in 1959.

The digital life

eBills are no longer a new idea or technology, and the statistics back it up. Payment processor Fiserv reports that over 50 percent of Americans receive some bills electronically, and 78 percent of households are receptive to the idea. In fact, the majority of consumers receive at least a mix of paper and paperless bills. The clear conclusion: Paperless billing is here to stay.

The impact on the environment is even greater. For every person who switches to online billing, six pounds of paper and 23 pounds of wood are saved annually. And this is important to consumers. Sixty percent say that environmental impact played a part in their decision to move to electronic billing.

Paper billing, alternatively, has a much different fiscal model. The cost to a business (where most of the cost in creating paper bills usually lands) has continued to grow in the background, creating yet another rising overhead expense.

Every paper bill created and sent costs, on average, an estimated $1, according to a *New York Times* article. While that might be considered the cost of doing business, it is also lost revenue. A dollar for every bill, times every customer, adds up when the number of customers reaches the millions.

Where should the cost of paper bills land? During the Great Recession, some businesses began passing this cost forward, charging customers for the privilege of receiving a paper bill in the mail. This caused, not unexpectedly, a market recoil.

Suddenly charging customers for something they have received free for decades—especially in the form of a request for payment, doesn't connect well. Social media can be a harsh way to learn the consequences of such a decision.

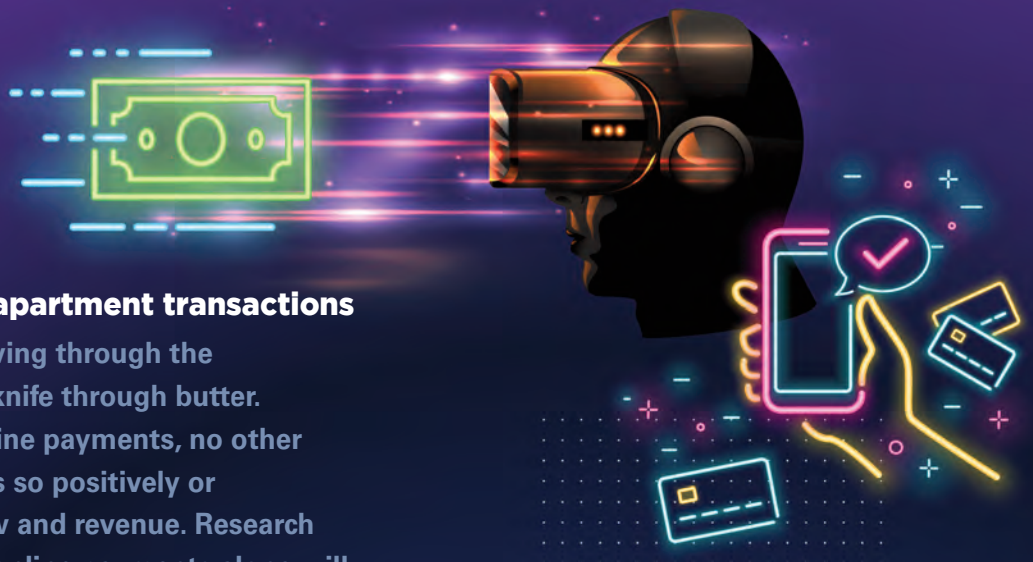
What approach should multifamily take? First, present eBilling to residents as the win-win that it is. Extoll the benefits of eBilling from quick bill delivery, to the set-it-and-forget-it of autopay, to the potential for fewer late fees and a better environment. Remind residents that big physical file folders virtually disappear if they choose eBill—replaced by a new space-friendly virtual file folder on their PC.

Or, if they choose, they can forgo the process of physical filing altogether. Many providers keep a record of customer billing activity for at least a year, available and viewable at any time. It makes light work of billing questions, payment activity and other financial record keeping when everyone can easily compare information from the same location. It also means better transparency and greater retention.

Consumers have already embraced technology in virtually every facet of life. It's time to fully embrace eBilling.

Author Brett Moneta

What's **NEXT?**



Automation transforms apartment transactions

Digital transformation is moving through the multifamily world like a hot knife through butter. From paperless billing to online payments, no other process in known history has so positively or profoundly affected cash flow and revenue. Research firm McKinsey projects that online payments alone will be a $3 trillion business by 2023. The U.S. continues to lead the way as the first in the world to execute more than half of its transactions online in 2017—450 electronic transactions annually per capita. Forty-eight percent of those transactions were mobile.

15 billion

TOTAL U.S. BILL-PAY TRANSACTIONS IN 2018

CONSUMERS WHO RECEIVE ONLY DIGITAL BILLS **25%**

2020

THE YEAR MOBILE WALLETS ARE EXPECTED TO SURPASS THE USE OF CREDIT AND DEBIT CARDS

21% CONSUMERS WHO RECEIVE ONLY PAPER BILLS

U.S. UTILITY CUSTOMERS WHO HAVE SIGNED UP FOR MONTHLY BILL ALERTS **66%**

36% OF ALL AGES, HAVE USED A PAYMENT APP

MILLENNIALS WHO HAVE USED A PAYMENT APP **60%**

CONSUMERS WHO RECEIVE BOTH PAPER AND DIGITAL BILLS **54%**

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SOURCES: CREDITCARDS.COM, GOOGLE, J.D. POWER, FISERV, MCKINSEY

Energy market update

U.S. Energy Information Administration Administrator Linda Capuano told the Energy and Water Development Appropriations Subcommittee in the U.S. House of Representatives in February that the U.S. energy industry is in a transformational time. She punctuated that statement by noting that, for the first time in almost 70 years, the U.S. will be exporting more energy than it imports by the end of 2020.

In its Annual Energy Outlook 2019, EIA projects the U.S. will remain a net energy exporter through 2050. U.S. energy export growth is driven largely by petroleum exports, including crude oil and products, and by additional liquefied natural gas exports.

In two years, America will export 1.2 million barrels of crude a day, more than will be coming into the country, according to EIA.

Capuano said the trends have become clearly established and that they will continue for the next few years before slowing and stabilizing. The U.S. produced almost 11 million barrels per day of crude oil in 2018, exceeding the previous 1970 record of 9.6 million barrels per day. EIA expects that U.S. crude oil production will rise above 14 million barrels per day and remain there through 2040.

"The United States has become the largest producer of crude oil in the world, and growth in domestic oil, natural gas, and renewable energy production is quickly establishing the U.S. as a strong global energy producer for the foreseeable future" said Capuano.

While it is expected to become a net energy exporter, the U.S. will rely on heavy and medium crude oil imports, the report says. The U.S. will mostly produce light and sweet (low-sulfur) crude oils, but refineries along the Gulf Coast are geared for heavy, sour (high-sulfur) crude oil grades.

EIA noted the impact of sustained low natural gas prices and declining costs of renewables on the electricity generation fuel mix. Natural gas will maintain its leading share of electricity generation and will continue to grow, increasing 5 percent over the next 30 years. Electricity generation from renewable sources is expected to nearly double in share from 18 percent in 2018, to 31 percent in 2050.

Aligning to protect your interest

It's making more sense for rental housing properties to work with a utility management provider to stay on top of a constantly changing energy market. In a recent webcast, RealPage Vice President Jason Lindwall noted that significant changes are happening in the energy sector that impact multifamily housing.

A big advantage of working with a third-party provider is having someone on your side as conditions change. Lindwall noted that Duke Energy's proposed 12 percent increase in South Carolina and Pacific Gas & Electric's

bankruptcy are creating market volatility.

Last fall Duke Energy proposed to the Public Service Commission of South Carolina to increase residential customers' rates by 12.1 percent and commercial and industrial rates by 8.3 percent. The company justified the rate increases, which would take effect in June 2019, to pay for power plant modernizations and improve reliability and service enhancements, as well as to manage coal ash responsibly.

The company expects to get the commission's decision in the spring.

PG&E, based in San Francisco, filed for voluntary reorganization Jan. 29 in the wake of the devastating wildfires that have blazed through California in the last two years. At issue is $30 billion or more in expected costs related to the wildfires.

The company said on its website that the filing doesn't mean that it's going out of business and that bankruptcy won't impact electric or gas service for customers. That may be the good news. Said AARP Advocacy Director Blanca Castor to NBC news affiliate KCRA, "The fact that PG&E is filing for bankruptcy is not good for anybody. It's not good for consumers. It's not good for the state. So, it's bad all around."

Castor fears that rates will go up and burden Californians on fixed incomes.

Market watch

The Federal Energy Regulatory Commission (FERC) opened an investigation in February and ordered hearings into three interstate natural gas companies to determine if the companies may be substantially over-recovering their costs of service, resulting in unjust and unreasonable rates.

FERC also found that nine gas companies have complied with the filing requirements of Order No. 849 and terminated their FERC Form 501-G proceedings without any further action.

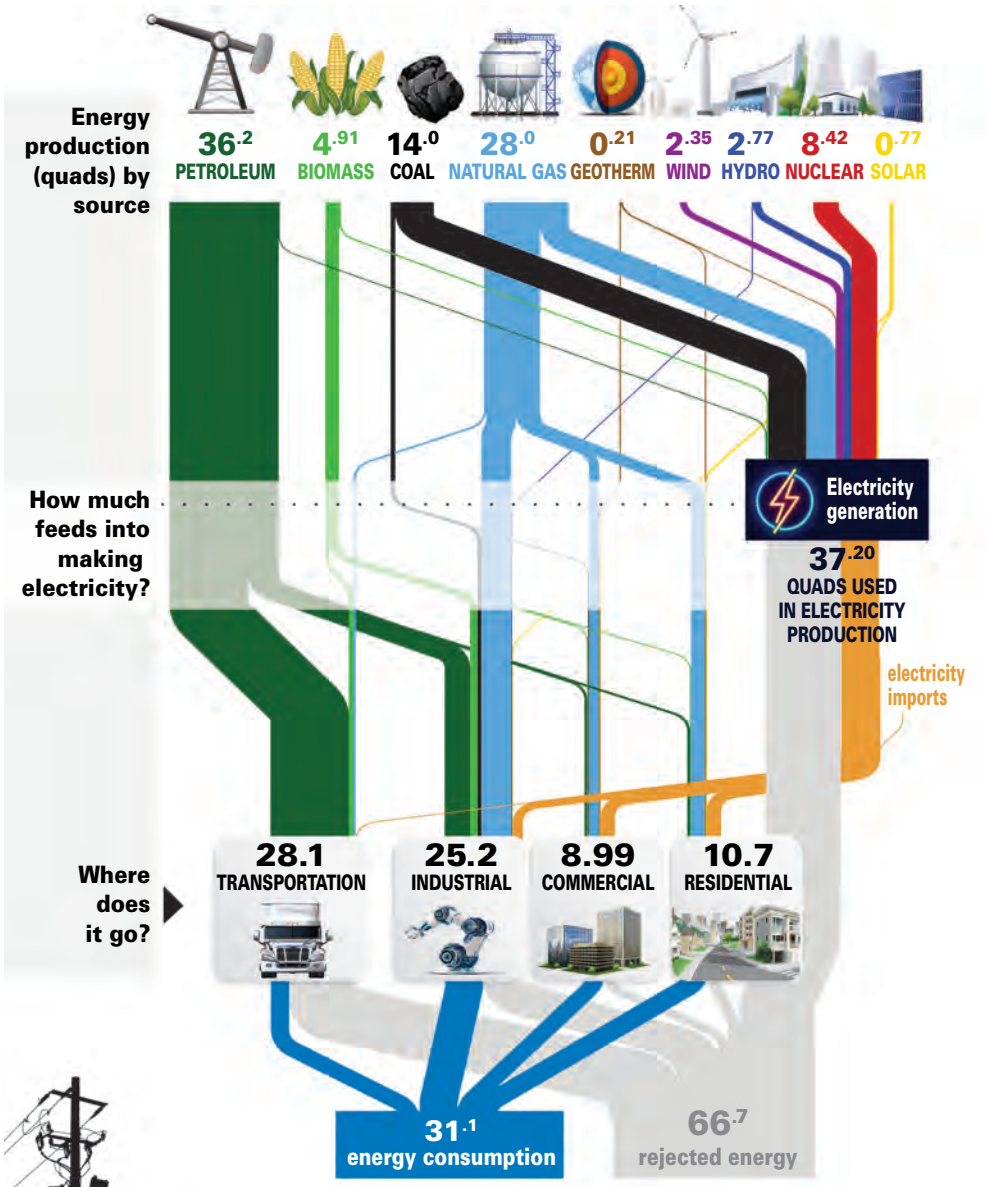
FERC is concerned that the level of earnings for each company may exceed their actual costs of service, including a reasonable rate of return on equity.

The investigations and hearings will determine whether the existing rates are just and reasonable in accordance with section 5 of the Natural Gas Act (NGA). The Commission has not yet determined a just and reasonable return on equity for each company, and therefore set this issue, among others, for hearings before FERC's administrative law judges. FERC directed each pipeline to file a cost and revenue study for the latest available 12-month period within 75 days of the issuance of its order.

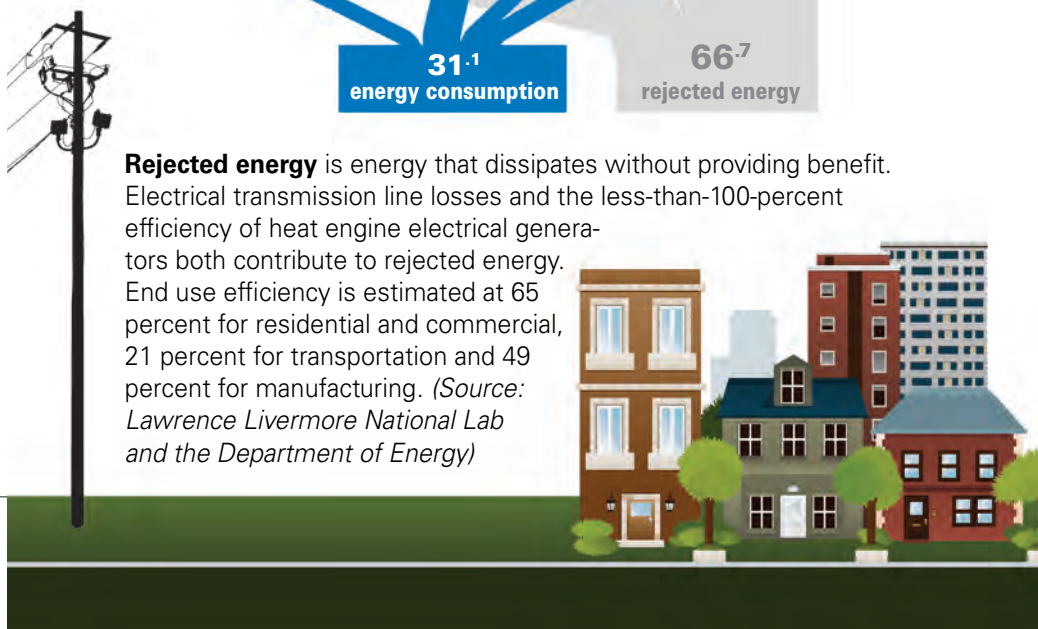
Author Tim Blackwell

U.S. energy consumption

A quad is one quadrillion BTUs. It represents over 8 billion gallons of gasoline, over 293 billion kilowatt-hours of electricity, 36 million metric tons of coal, 970 billion cubic feet of natural gas, or over 25 million metric tons of oil. U.S. energy consumption has remained relatively steady since 2000. **In 2017, 97.7 quads were consumed.** Here are the sources of our energy, and where it goes.



Rejected energy is energy that dissipates without providing benefit. Electrical transmission line losses and the less-than-100-percent efficiency of heat engine electrical generators both contribute to rejected energy. End use efficiency is estimated at 65 percent for residential and commercial, 21 percent for transportation and 49 percent for manufacturing. *(Source: Lawrence Livermore National Lab and the Department of Energy)*



The benefits of **benchmarking** building energy

1 PROVIDES VALUABLE INFORMATION

2 INCREASES AWARENESS

3 PRIORITIZES CAPITAL IMPROVEMENTS

4 IDENTIFIES BEST PRACTICES

5 ESTABLISHES DATA POINTS

6 CREATES METRICS FOR STRATEGY

7 SAVES ENERGY AND EXPENSE

Benchmarking consumption

Over the last few years, the multifamily industry has been exposed to terms like benchmarking, sustainability and Energy Star Portfolio Manager (ESPM). These terms may be familiar to some with exposure to other markets, but they are alien to many of us in multifamily.

To add more fuel to the fire, several cities, a couple of states and a few institutions like Fannie Mae and Freddie Mac offer different interpretations and standards for individual utility benchmarking initiatives.

There are entire organizations with a sole focus on creating and maintaining benchmarking standards and tools. The most popular for the energy management industry is EPA's Energy Star Portfolio Manager, first launched as an energy usage rating tool for the office building industry. Based on the successful launch and adaptation of ESPM in the office building industry, several additional groups followed, such as manufacturing, data centers and institutions like hospitals, schools and universities—just to name a few. Yet, a major energy user was not included in the group—multifamily residential properties.

The multifamily industry presented some challenges for ESPM. One challenge was the diversity of multifamily properties with varying categories like high-rise, mid-rise, garden, garage structure, surface parking, underground parking, amenities, open hallways and enclosed hallways.

The biggest challenge, though, was presented by the utility metering layout. How would it be possible to collect consistent whole-building energy data from properties with central HVAC equipment, but individually metered apartments for electricity? Or central, natural gas metering with individual HVAC equipment and electric meters in each apartment?

The utilities, in general, were not cooperating with aggregate usage data distribution due to privacy laws and their inability to do so. EPA could not enforce utilities to cooperate, but cities could—and did. New York City mandated multifamily building benchmarking and forced the serving utilities to provide whole-building aggregate energy data.

This mandate allowed the utilization of ESPM as a reporting tool and the genesis of a

Mandatory benchmarking

Multifamily energy disclosure requirements

Benchmarking policy enacted for

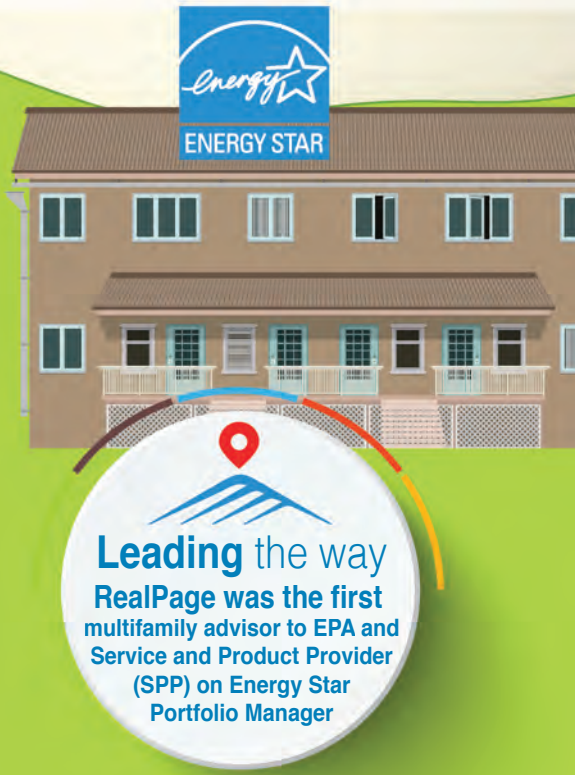
- Performance and other requirements
- Public, commercial and multifamily buildings
- Public and commercial buildings

reliable benchmarking process for multifamily properties. Large cities like Seattle, Denver, Washington, D.C., Boston, Atlanta, Orlando, Chicago and Los Angeles followed. And the number continues to grow today. The latest addition is the entire state of California. Finally, benchmarking for the multifamily industry has taken a strong foothold. Moreover, it is expected to continue this growth in the future.

Why is broad adoption of utility benchmarking so important to Multifamily? Utility expenses tend to be the second or third largest expense to a property, and being able to identify waste, improve energy and water efficiency and monitor improvements are important to a property's performance. They assist in the reduction of operating expenses, increase of NOI and overall property value. For example, at a 5 percent cap rate, every dollar saved on utility expenses adds $20 to a property's value. Additionally, these positive results are sustainable and repeatable, year after year.

Benchmarking standards are not necessarily a constant base. As properties improve their overall utility efficiency, the standards will adjust accordingly. On-going improvements, solid operational procedures and monitoring are essential as well for overall success and continued performance.

Dimitris Kapsis is VP Energy Management, RealPage Utility Management. Dimitris joined RealPage in 2017, bringing over 15 years of energy expertise and leadership. Before joining RealPage, Dimitris served as Chief Energy Officer for AUM. He and his team of energy experts helped AUM become the premier energy management provider to the multifamily industry. Dimitris previously served as Director of Energy Management for Archstone, a Denver-based property ownership and management firm.



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