

MULTIFAMILY

Journal of
Utility
management

THE LATEST RESEARCH AND MODELS FOR
OPTIMIZING UTILITY USAGE IN MULTIFAMILY
VOL. 11, ISSUE 2 • SUMMER 2021

MUST READS

THE VIRTUAL AWAKENING

LIVING YOUR BEST
CONNECTED LIFE

NEXT NORMAL: REMOTE
AND VIRTUAL ENERGY-
EFFICIENCY ASSESSMENTS

REALPAGE
REALWORLD2021
SPECIAL EDITION

Automation Changes Everything

journalofutilitymanagement.com

UMA DIRECTORS

Lori Hanson
Manager of Client Services
Greystar

Tim Haddon
Director of Strategic Business Serv.
PK Management

Gail Corder
Ancillary Services Manager
Fairfield Residential

Peter Chan
Director of Ancillary Services
Fairfield Residential

Annette Mendoza
Compliance Specialist
Fairfield Residential

Corinne Mateyak
Utility Management Advisory

Wes Winterstein
Utility Management Advisory VP

PUBLISHER

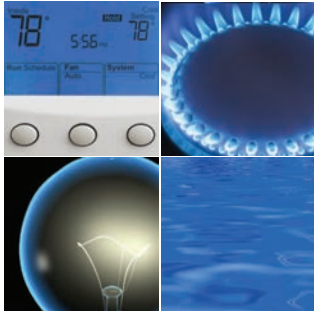
Mary Nitschke
mary.nitschke@journalofutilitymanagement.com

MANAGING EDITOR

Kevin Reid
kevin.reid@journalofutilitymanagement.com

DIGITAL STRATEGIST

Brian Rakowski
brian.rakowski@journalofutilitymanagement.com



SUBSCRIBE

journalofutilitymanagement.com

CONTENT LICENSING

reprints@journalofutilitymanagement.com

CHANGE OF ADDRESS

Circulation Desk
P.O. Box 1757, Zephyr Cove, NV 89448



6

Modern enterprise needs real-time data

Real-time data is key to managing property. Drones are the next emerging tool, monitoring systems and equipment.

4

The virtual awakening

The pandemic and the sudden shift to working remotely highlighted the need for automation in multifamily operations.

8

Choose a guidance, any guidance

Ongoing efforts to narrow down the definition of ESG (environmental, social, governance) assets have led to a stalemate.

10 Living your best connected life

The proliferation of IoT and better networks not only attracts more residents, but is helping track building health and performance in real time.

12 Next normal: Remote and virtual energy-efficiency assessments

While some safety inspections still require an on-site inspector, the virtual inspection for common energy-efficiency assessments are here to stay.

14 Greystar elevates sustainability and feeds the hungry

Sustainability comes in all shapes and sizes. Greystar's success with Move for Hunger shows that sustainability is more than energy efficiency upgrades, collecting more than 13 tons of food.

Preparing for what's next

What we have here is a failure to communicate, proclaimed the Captain to justify beating Cool Hand Luke (1967). The Captain of Road Prison 36 also advised Luke that he's wearing chains for his own good.

"Wish you'd stop being so good to me, Cap'n," the coy prisoner (Paul Newman) replied.

A kinder, gentler business model. Its been the fervent objective of many a business and customers for some time. It's a simple notion that business owners and operators intrinsically get: Do no harm to the market in which you conduct business.

It's when we get into the weeds of communicating, or defining, just what that harm is and how it lays against the drivers of business that things sometimes go sideways.

Fear not. The publication you are holding is the great communicator. Herein we point out those things that are important, gently lifting the needed knowledge from the noise and distraction of the world's chaos. There is a lot of dust out there.

I believe in simple. Distilling concepts down to the news you can use. It's my own personal exercise in automation.

ESG—a category that itself has many names—is catching the attention of just about everyone. Whether you recognize it by environmental, social, governance (ESG), responsible investing (RI), sustainability, or the category formerly known as green, recent developments in the space stand to challenge businesses just coming out of last year's pandemic storm.

ESG is fraught with challenges. The big three hurdles are communication, metrics and pay-off model.

One challenge is communicating the value of a given practice, in a clear and understandable way—like the nutrition label on your food.

We think we want it. We just don't want the calories or trans fats.

Recently, policy shifts have culminated in a series of climate change, racial equity and social justice executive orders. The SEC is working on rules requiring ESG disclosures for publicly-held companies. The Labor Department now allows ESG considerations in retirement plan investments. Thirty-seven states and D.C. now permit for-profit public benefit or social purpose corporations

that promote ESG values and other social benefits, and the list goes on. As with most things, desire is far ahead of the roadmap. The definitions of ESG, like its various naming conventions, are scattered, disparate and change by the day.

Organization will eventually follow, but how does a company operate in advance of clarity? Why now: Recent movement by large players in the apartment space, the financial success of energy management, and efficiencies from growing automation are drawing interest to green like never before. These compelling points of fiscal light behind green initiatives are effectively widening the market. Still, we must tackle the job of definitions and business expectations, and get to those values that build business.

That is, identify the most efficient business models behind the field of green dreams.

Count on us to sift through the noise and deliver to you the actionable data. It's our known superpower.

Mary Nitschke
Publisher



What matters

In 2020, 70 to 80 percent of small and medium businesses (SMBs) experienced a drop in revenue of between 30 and 50 percent, according to recent research by OECD. Well-capitalized giants performed better than cash-strapped SMBs.

This is important for two reasons. First, the multifamily housing sector is primarily SMBs—family, multi-generational, small to medium-sized businesses—making up over 94 percent of all apartment ownership and operations.

Second, it's important to note what made the difference in the SMBs that continued to perform.

Those higher-performing SMBs did so by mirroring business processes used in large companies, albeit on a smaller scale.

Higher-performing companies, regardless of size, had built financial resilience, organizational structure and strategic focus to not

only adapt, but to advance through the crisis.

Digitization, automation and operational efficiencies gave these businesses the agility needed to accommodate the shifting needs of their market and the required processes to maintain business continuity.

The top three indicators found in the best-performing businesses: Deep digital capability, remote/real life balance, and operational agility and resilience.

How do businesses accomplish this? By following success, emulating the processes of larger companies, and engaging providers who have perfected the needed craft.

Real estate is historically cyclical and the networked age has only accelerated market movement.

The networked age has also essentially leveled the playing field. Digitization, automation and remote operation are not just for mega-businesses anymore.

Suppliers abound and technology is maturing by the day. It's only good business practice to connect to a pipeline of knowledge and field experience.

The Utility Management Advisory is one such group that brings together the brain trust of the industry, sharing best practices, case studies and actionable ways to move businesses, of any size, toward greater profitability. This *Journal* is one by-product of the group's dedication to elevating multifamily businesses with information.

We're delighted to bring you the latest information to elevate utility management performance.



Lori Hanson Manager of Client Services for Greystar and *Journal* Guest Editor

The virtual awakening



The recent lockdowns drew a hard and fast line through the business of property management—especially across financial functions. Companies with manual and semi-manual processes faced challenges as financial reporting deadlines came due and staff were suddenly working from home with little or no advanced warning or preparation. Billing, AR and other daily functions were also disrupted as property operators scrambled to adapt their operations to the new business environment.

Paper-less profitability

Legacy processes and non-automated workflows rely on collaboration, spreadsheets and repetitive reconciliation in the hunt for human error. Such legacy processes have always slowed period-end closings, but virtual collaboration with remote employees added a new layer of time and risk. The rush to meet filing deadlines, along with new communication channels like video conferencing and other unsecured platforms, opened new exposure to proprietary data.

Conversely, those with fully automated accounting systems encountered very little disruption. Lockdowns provided valuable lessons on business continuity and the importance of resiliency in property management operations. Automation, once thought to be merely a time saver, became a necessity as businesses made the shift from physical to virtual operations. Even then,

closing out the books and filing deadlines only scratched the surface of the full value of automation to multifamily operations.

A page from history

Printing has been around for over five centuries. Society has grown accustomed to, and even comforted by, the hard copy. The demand for virgin (unrecycled) paper is growing. Yet, the use of paper is often considered to be a bad habit that Americans have long wished to break.

Growing paper use, like increasing oil consumption, corresponds with economic growth and its regulation constricts gross domestic product (GDP). Ironically, despite the rise of the internet and email supplanting paper mail, U.S. paper consumption has more than doubled over the last 20 years—from 92 million to 208 million tons—a rise of 126 percent, according to EPA.

The paperless office was predicted as early as the 19th century when Thomas Edison thought that office memos would be replaced by recordings on his wax cylinders. In 1975, an article in *Business Week* postulated that by 1990 record-handling would be electronic. In the same article George E. Pake, Xerox's head of research, predicted that a TV display with a keyboard would replace paper.

Today, China produces over a quarter of the world's paper; the U.S., long the global leader in paper production, fell to second place in 2009, according to the Environmental Paper Network. The greatest end use of paper is packaging—an application fueled by the rise of the Networked Age and the shift to online commerce, according to *Pulp and Paper International*.

An environmentally dirty industry

Paper manufacturing is the world's top polluter, the fifth largest consumer of energy, and uses more water than any other production process (nearly 3 gallons of water per sheet of paper). Paper pulping and bleaching are chemically intensive, but technology that might provide energy and water efficiency, while also reducing toxicity, is costly.

By 2018, the U.S. recycled 68.2 percent of its paper, making it the world's leading paper recycler. Still, virgin paper represents about 80 to 85 percent of copier and offset print stock because it's cheaper, better quality and in higher demand. Recycled paper must be collected, sorted, and processed to remove ink, polymers and other foreign materials. However, even with additional

processing and bleaching, recycled paper is far less environmentally impactful than virgin paper. Recycled paper requires zero trees, redirects landfill waste, and requires less energy and water to process.

All paper is not equal

The economic-environmental analysis of paper must consider its social benefit. A reduction in paper use is not always environmentally beneficial, on balance. Paper towels in restrooms, for example, are more energy-efficient than hot-air dryers. Legal papers, passports, money and sanitary paper are of high immediate value or have long-term usefulness. They also are a less significant part of total paper consumption than printing or packaging paper.

A study by the Environmental Paper Network refers to this usefulness as “utility” in a loose reference to economic principles:

Some paper applications have considerable social benefits, and therefore high utility. Other applications have either no social benefits, a highly limited lifespan or much more durable alternatives. They are therefore deemed to be low utility.

Considering such metrics reveals great potential for cost savings to business. Low-utility paper usage is a large part of today’s business operations and represents over a quarter of the nation’s paper consumption. U.S. businesses use nearly 3.7 million tons of paper each year, according to efficiency expert K.J. McCorry. Ironically, nearly half of the paper printed is discarded the same day it is printed, according to a Xerox study. Remediating this low-utility waste, generally a consequence of habit, not only saves material expense, but can also improve operational productivity through automation.

Automating out waste

The negative impact of paper consumption is only part of the waste and inefficiency created by manual business processes, yet still significant.

Paper usage runs deep in our psyche. Business owners understand the importance of records keeping and, in today’s race for productivity, workers often move by muscle memory with the intention of saving time.

In fact, given the choice of digital or print, workers still navigate to paper 89 percent of the time, according to *The Myth of the Paperless Office*, by Abigail Sellen and Richard Haper. Forging new behavioral habits is challenging but the payoffs are great and setting simple processes are the key. Paper is not only a waste of resources and space, it represents a security risk and significant cost in labor.

The case for automating low-utility paper in today’s business environment, especially in apartment operations, is fiscally and competitively compelling. Billing, statements and accounting documents all have limited lifespans with low, short-range utility to both property managers and residents.

The networked world has shown in dramatic and relatively abrupt fashion that the value of documents is found in their content, not in their form. Paper use is an impediment to the ability of landlords to operate efficiently and to compete. The greatest aggregated value of document data is in its ability to spur useful action in the service and convenience of residents and property operators, and to meet operations requirements.

Digitization offers secure access to, and storage of, data and enables real time analysis in ways that paper can never provide. Yet, S-corps spend over \$120 billion a year on printed forms that are outdated within three months. At least 70 percent of these businesses would also fail within weeks if they suffered the loss of their paper records through a catastrophic fire or flood (Record’s Nation).

Going forward

The recent lockdowns accelerated apartment owners’ drive toward automation.

Adaptation became mandatory and many property owners saw the shift as an opportunity to upgrade their processes.

Centralized data management allowed offices that were locked down to continue operations unabated. Suddenly reducing waste and lowering costs became an afterthought as business survival became the central consideration.

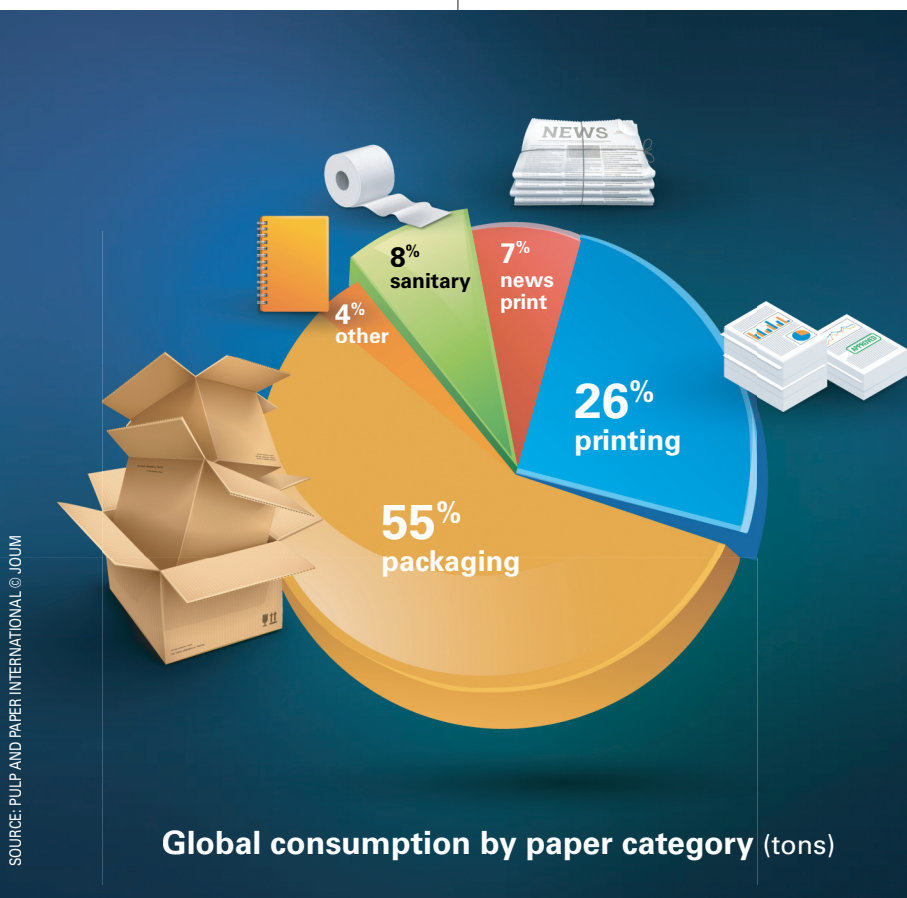
Automation made it possible to move and share data, while continuing to bill and collect rents online or via touchless processes.

The lockdowns changed renters, too. Residents migrated in greater numbers to paperless and online rent payments, preferring automated and touchless transactions. Online payments are projected to reach \$18 billion by 2027, a 24 percent growth over 6 years (Fortune Business Insights report).

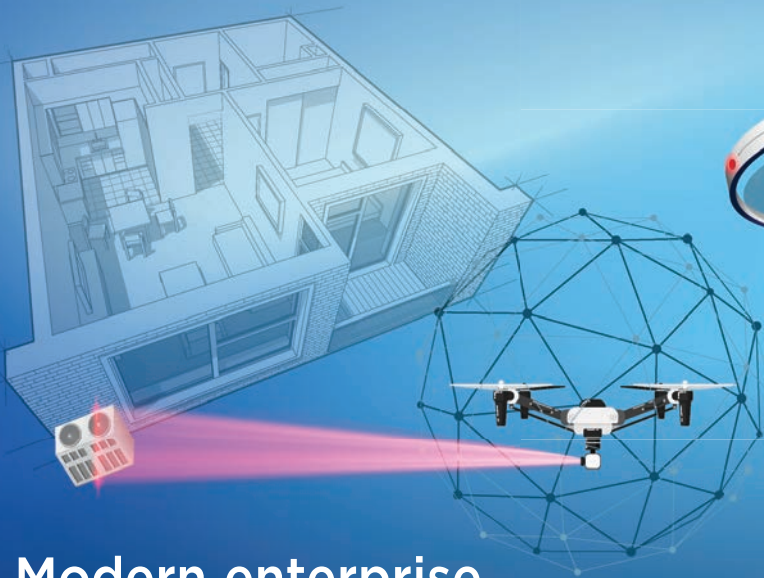
Office automation will continue to gain traction as many companies struggle with worker shortages.

Accounting automation and procure-to-pay processes—central to any business—have gained momentum as staff work from home or are still unable to get into offices (Finextra).

Once, automation simply reduced cost and improved operational efficiency by eliminating tedious or repetitive manual labor and reducing human error. Today it’s essential to operational continuity. ⚙️



Apartment properties capitalize on drones



28% INDUSTRIAL INSPECTION
17% INSURANCE
4% AGRICULTURE
3% STATE AND LOCAL GOVERNMENT

SOURCE: FAA AEROSPACE FORECAST,
FISCAL YEARS 2018–2038, APRIL 11, 2018

Modern enterprise needs real-time data

Drones have created quite a buzz. Visual inspections are just one of many field advantages UAVs (unmanned aerial vehicles) deliver. Drones mean greater operational efficiency and new streams of data for property owners, managers and maintenance teams. A drone can be sent into remote locations and hard-to-access places without ladders, scaffolding or harnesses. Drones are not only more efficient, but can be equipped with special sensors or thermal cameras to identify where heat is leaking from a building and more.

Virtual inspections lead the way

Multifamily businesses adopt technology in increments. It starts simple like automating repetitive back office or accounting processes. With earned trust, these typically build into other measurable, quick-return investments like facilities IoT, energy management and smart equipment. The common thread in today's prop tech is that it leverages data into greater insights, which leads to operational efficiency, which leads to profitability. Like any value add, prop tech must yield measurable ROI. And the data indicate it does.

Businesses that rely on data to make decisions are 58 percent more likely to beat revenue goals compared to non-data driven companies reports Forrester. Yet data is not even considered in 43 percent of today's operations.

Apartment businesses have long mined data to attract and retain residents (market-facing), and manage risk (facilities-facing). Machine learning and AI have energized data usefulness delivering greater granularity on property performance, predictive analytics and market context.

Real-time data is now writing the next chapter in managing properties, buildings and equipment—a trend greatly accelerated over the last year.

Lockdowns expose weakness

Lockdowns proved an unintended case study on the value of remote facility monitoring, maintenance, repairs and more. In some cases, data and automation became the only visibility owners and operators had on millions of dollars of

assets in parts of the country.

Real time data enabled teams to operate in varying degrees of local and state restrictions. Property operators had to quickly adapt to increased time spent by residents in their apartments, and a new level of property traffic from increased package and food deliveries. Community infrastructures were suddenly and greatly impacted as utility consumption, appliance and equipment use and trash generation began to rise to unprecedented levels. Maintenance requests soon followed.

Property managers fortunate to have automated systems, were suddenly and solely reliant on these systems to conduct business, handle daily transactions, and monitor and maintain facility operations at full and continuous operational capacity. The impact of lockdowns on apartment businesses was unprecedented and unlike that for any other industry.

Prior to the pandemic, real time monitoring—already used to audit utility consumption, monitor water pipes, HVAC equipment and more—had matured from simple data collection to AI-enabled skills like machine-to-machine maintenance and real-time status alerts.

Such technology may be the apartment industry's simplest path to building operational continuity and resiliency into the future. Smart facilities monitoring, inventory control, and equipment repair, has been an integral part of manufacturing and warehousing for



1,782,469

drones registered in
the U.S. by the FAA

71%
recreational
drone use

27%
commercial
drone use

The number of
commercial drones
is expected to
double
by 2024 (FAA)

\$6.30 billion

total value of the
commercial drone
market by 2026
(Fortune Business Insights)

construction

sector uses more drones
than any other segment
(Research and
Markets, 2019)

over a decade. Borrowing from its success in these complex environments, this tech is now transferring into the apartment space with great success.

Threats to business continuity will continue to present risks to multifamily operations. Now is a good time to step back, assess and prepare. Multifamily has long borrowed from hospitality tech in the area of energy management, security and creating experiences. It makes sense to seek the best examples of plant management and maintenance, and draw from those proven advancements as well.

The speed of business

What exactly is real-time data? Sixty-nine percent of companies think that real-time data is information collected one second or more from its creation, according to KX research. However, thirty-one percent of decision makers are already thinking at the sub-second level. If we're talking about a burst water pipe, a gas leak or a power outage taking down a network, it's easy to see how even sub-seconds could equate to costly disruptions.

Utility and facilities management, security access and package handling are examples where real-time data is used in apartment communities today. Yet adoption remains sluggish. Two-thirds of organizations agree that real-time data is needed for better decision making (KX), yet still face unintegrated, channeled sources of data.

Maximizing real-time data in today's operations will create exciting opportunities—as innovation always does. But it will also require systems integrations in order to truly reap the full benefit of its application.

One of the newest streams of real-time data is coming into apartment operations from the use of commercial drones for virtual physical audits, property inspections, site surveys and more. While the apartment industry is not known as early adopters, the use of UAVs, more commonly known as drones, may be an exception.

Automation 2.0

Nearly three million commercial drones are projected to fill the skies by 2022. Construction management, surveys, marketing and other applications have placed real estate ahead of all other industries in capitalizing on this newest tech. In fact, nearly half of all drones are used in real estate, particularly commercial and property management.

Drones allow for more frequent inspections and visibility into hard-to-reach or dangerous places—while capturing more accurate data. As with all automation, the point is to free humans to address higher-value points of operation that require logic and reason. Drones are far more efficient for mundane, repetitive tasks.

Equipment maintenance is just one application where a cost-benefit analysis supports the

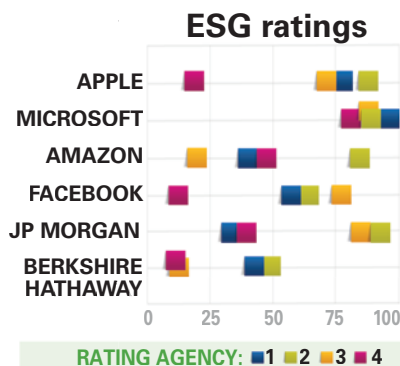
use of drones on properties. Inspections are the first step in the maintenance process, sometimes followed by needed maintenance.

In fact, only 10 to 20 percent of inspections find a problem needing repair, according to fly-ability.com. That means 80 to 90 percent of inspections do not result in a repair and do not require a maintenance person. Automating inspections could result in thousands of dollars in savings and free maintenance teams to focus on repairs.

Given the declining cost of drones, many properties perform more frequent drone inspections than they would manual inspections, meaning problems are addressed more quickly.

Drones also deliver better data and asset history over the life of the equipment, which can be used to trigger automated responses. Some property assets that can benefit from drone inspections: roofs; buildings and other structures; land, construction; fencing, walls and other barriers; chimneys; and solar panels.

As the technology improves, drones will continue to change how the industry does business. A recent study by PwC found that drone-enabled property audits were completed 85 percent faster than manual audits. Drones provide more data, as well as a permanent record of maintenance throughout the site lifecycle. And good data is key for property operations looking to manage their building assets. ⚙️



Choose a guidance, any guidance

From buzzword to mainstream, global ESG (environmental, social, governance) assets could reach \$53 trillion by 2025, according to Bloomberg Intelligence. The U.S. is expected to dominate the category by 2022. Still, the ESG space has yet to standardize green metrics—measurements, governance or results. That hasn't stopped a significant swath of investors seeking to tie their money to ESG-branded real estate.

As pay-off models and key performance indicators crystallize, the ESG movement continues to grow in commercial real estate—including apartments.

In the world of utilities, efficiency naturally feeds sustainability. And so energy management long ago became many apartment owners' gateway to green operations—driven mostly by trackable return.

When the FHA gave sustainability a push with green lending, financing became another stepping stone on the path to sustainability—again following a line of sight on pay-off through loan servicing.

In the same spirit, a number of large apartment owners and institutional investors are betting big that the green movement will convert to green premiums.

One notable player in apartment real estate is New York City-based Blackrock. The company is the world's largest asset manager with over \$9 trillion in assets. In addition to large stakes in Apple, Microsoft, Amazon, Google, Facebook, Wells Fargo and JP Morgan Chase, Blackrock has significant holdings in commercial real estate with a history of rapid growth.

Blackstone acquired over 27,000 apartment units in recent years at a cost of over \$4.7 billion. Units span California, Florida, New York, Washington, Boston and D.C.

In May, Blackrock announced plans to raise \$1.5 billion for its U.S. real estate debt

fund. The firm is positioning itself for refinancing opportunities as an estimated \$2 trillion of U.S. real estate debt matures over the next five years. ESG is a highly publicized part of the Blackrock strategy.

At the beginning of 2020, Blackrock CEO and Chairman Larry Fink pledged to double ESG offerings, screening out those investments using fossil fuels, palm oil, for-profit prisons and weapons, to name a few.

Blackrock's market share affords an undeniable influence on the market.

In the beginning: The U.N. and Davos

The trillion dollar question is *what is ESG*. It was first mentioned in the 2006 United Nation's *Principles for Responsible Investing*, which provided broad objectives for U.N. member organizations.

Davos Manifesto 2020: The universal purpose of a company in the Fourth Industrial Revolution promised to clarify ESG expectations. The ensuing 45-page report is a collaboration of the World Economic Forum, the International Business Council, Deloitte, PwC, KPMG and Ernst & Young, and sets broadly defined objectives across 22 categories.

Today there are scores of green consultancies setting Balkanized definitions and ESG guidance that assess and score the green initiatives of U.S. business. Lack of unification and clarification, as well as

extremely fluid metrics and categories, have created market confusion and accusations of "greenwashing."

Recent analysis by the *Wall Street Journal* attempted to quantify the performance of ESG companies, with mixed results. A study group of 494 companies, using three rating companies, were impossible to align due to differing rating sources and procedures. Many of the companies were assigned greatly different market rankings just across the three ranking agencies.

Defining ESG is clearly the greatest challenge facing the fledgling industry, as definitions span everything from fossil fuel use to hotly debated social issues.

"The strong disagreement in the market does not allow the ESG relevance to be understood by the market," Monica Billio, professor, Ca' Foscari Univ. told *The Journal*.

Subjectivity is only one bias

The correlation across ESG rating agencies is mathematically weak. Research by Berg, Kolbel and Rigobon found that ESG rating agency metrics correlated 0.40. In comparison, credit rating agency metrics are 0.90.

Unified scoring would simplify the metrics, but it's nearly impossible to equalize variant business operations (big, small, local, regional, national, international, affordable, market, student and more). Then there's the inequity of ESG issues.

In accounting, expense is judged by its direct or indirect impact on the bottom line. Many ESG indicators are subjective assessments without a clear line to return.

Some agencies consider government lobbying detrimental to good governance, while others do not. Others weight social initiatives higher than environmental action. Larger, multi-national companies, and European companies have higher ESG scores showing certain intrinsic bias in scoring as well.

ESG guidance has now garnered the attention of the Securities and Exchange Commission, intent on regulating the nearly \$17 trillion industry (2020).

Even as key performance indicators, historic basis and quantitative results remain murky, it is clear that certain segments of U.S. businesses, including big influencers like Blackrock, see ESG as the next frontier.

Former Blackrock executive Brian Deese, recently head of ESG promotion at Blackrock, is now the director of President Biden's National Economic Council. Sorting through the economics of ESG will be a focus for at least the next several years. ⚙️

ESG: Soft science challenge



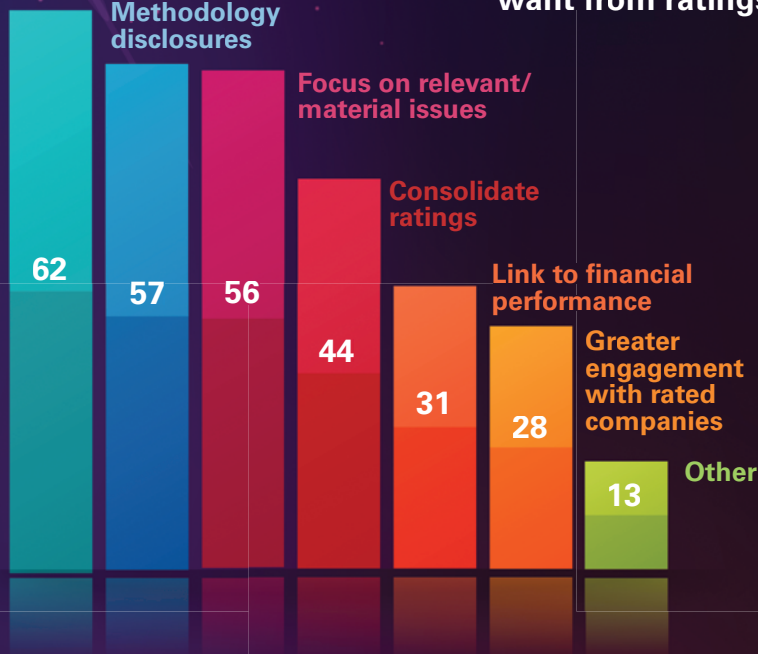
33%
investors surveyed
feel they have
insufficient knowledge
to assess ESG issues

3X
ESG y/y
investments
tripled in 2020

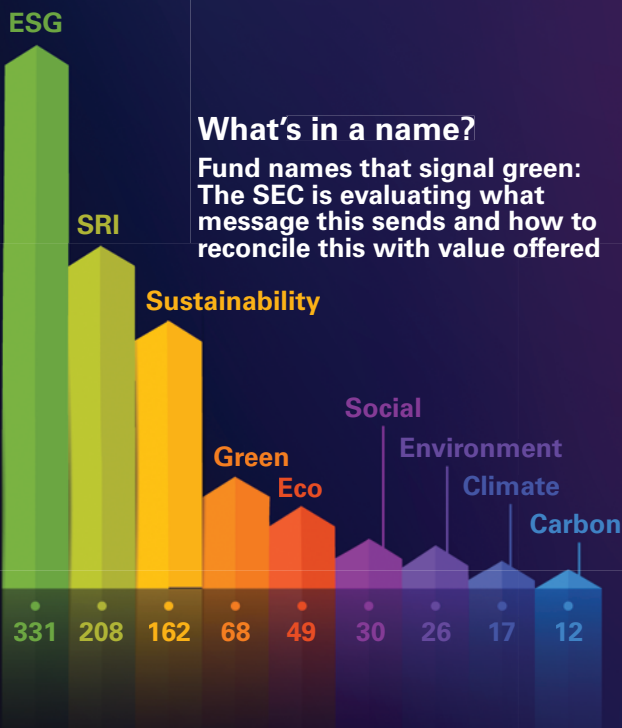


Rating methodology consistency

Methodology disclosures

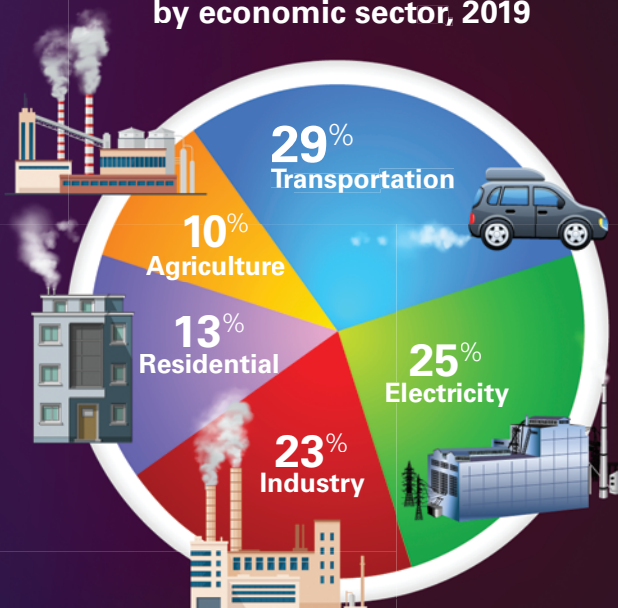


What ESG investors want from ratings



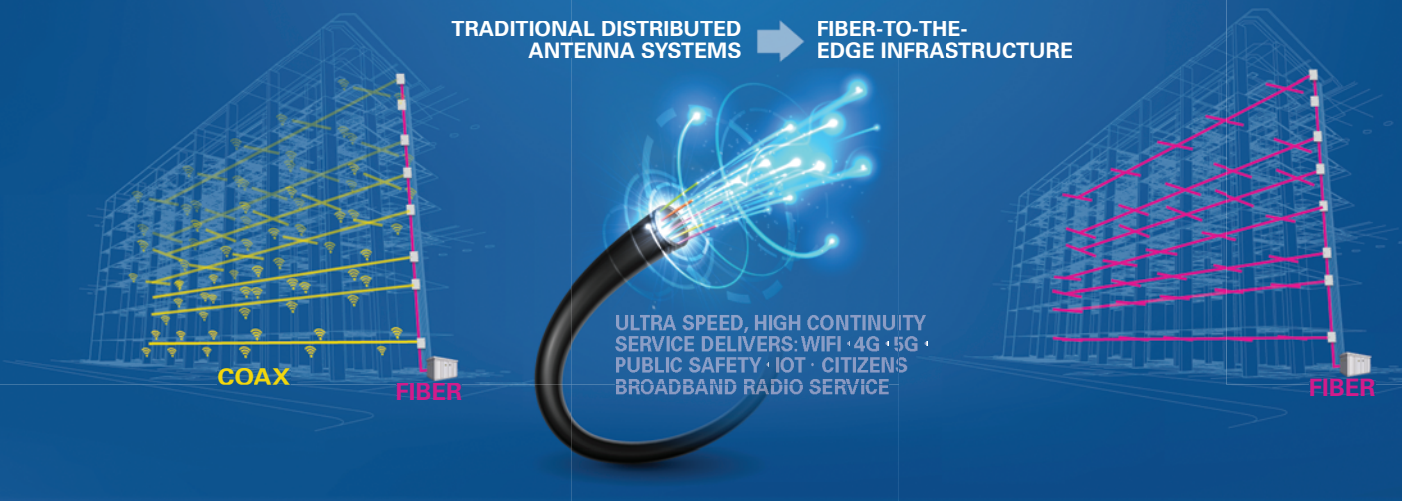
What's in a name?
Fund names that signal green:
The SEC is evaluating what
message this sends and how to
reconcile this with value offered

CO₂ emissions by economic sector, 2019



5G impact on multifamily properties transitioning to fiber-to-the-edge

TRADITIONAL DISTRIBUTED ANTENNA SYSTEMS → FIBER-TO-THE-EDGE INFRASTRUCTURE



Living your best connected life

Today's apartments are about experience. Onsite amenities, chic fixtures and smart appliances continue to permeate the market, but connectivity determines how well they function into a whole experience.

Smart facilities management delivers an attractive return on operational efficiency, while a great resident experience translates to better effective rents. Advances in connectivity greatly elevate both.

The competition for renters is fierce and growing. On its face, the number of renters continues to outstrip inventory. And if it were just about filling units—at any rent level—owners would simply sit back and collect the profits. But the market is complicated, and growing more so by the day.

Work from home means that prospects have a greater radius of choice. For owners, this means that a property's competition has widened geographically.

How well a property performs in its class, demographic and location begins with physical structure, but even structure builds into the whole experience. Today, that experience includes more and more unseen benefits carefully curated to elevate not only the resident's lifestyle, but also their health and well-being.

Especially in the wake of COVID, healthy apartment buildings have become a social priority and a point of market competition.

Technology has afforded a direct means to measure and monitor the quality of indoor air, reducing moisture issues and even

encouraging resident fitness.

For plant operation, today's tech delivers real-time data on HVAC, utility and energy performance, going as far as performing regular system diagnostics and alerting owners to potential issues in advance of failure.

Advancements in smart equipment and plant operations continue apace, meaning greater and timely visibility into asset and equipment performance.

The arrival of 5G networks will greatly improve apartment operators' real-time visibility into apartment operations, amplifying building automation, smart solutions and predictive maintenance applications. This will further reduce the time and cost of equipment and machine upkeep, and control site expenses, like utility consumption.

Such internet of things (IoT) applications sometimes require higher speeds, but the larger issue is the continuity of the data stream. Instant connection and stabilized service is the game changer that will propel IoT, machine-to-machine (M2M) learning and other facilities management functions to greater returns.

Most IoT, M2M learning and similar tech brings an increased sensitivity to delay, delay variation and packet loss. Lack of service con-

tinuity means data loss or operational interruption. The more advanced 5G connectivity improves reliability for monitoring energy, utility and system performance in real time.

Better buildings, better quality of life

Building health is nothing new for the commercial space, but it is gaining traction in the apartment industry.

Healthy apartments and clubhouses not only attract health-conscious residents, but also those interested in sustainability. Properties designed to promote physical activity, maintain occupant safety, instill well-being, even provide healthy food options, also create communities that feel better physically.

Many new apartments include built-in systems to prevent mold and moisture, monitor and calibrate clean air and water, avoid exposure to toxic chemicals, encourage fitness and support healthy circadian rhythms.

Building healthy properties also improves sustainability and energy management. Regular maintenance supports continued clean air and hygienic surfaces, and assures residents that wellness is a priority.

Better buildings, better performance

Through energy reporting and benchmarking, operators can determine if a building, equipment or process is functioning at peak performance.

Building health automation operates best with ultra speed bandwidth, enabling AI to provide data in real time. G.fast, also known as fiber-to-the-distribution point (FTTdp), is a silent game-changer in multifamily. It lets property owners bring gigabit-class

bandwidth to a property and to individual units without disruption to the premises.

With the ultra fast speeds and greater reliability of 5G, measuring and monitoring property performance will see another huge leap in ease of process. This will cascade into a cleaner line of sight on achieving building health designations. Participating in such benchmarking programs are becoming mandated by more local, state and federal legislatures, but also resonate with many residents keen on sustainability.

Fitwel or WELL Building Standard designations—similar to the green building rating system, LEED—help multifamily owners achieve healthy building status, as well as market to residents preferring fit homes.

Multifamily buildings earn designations through well-building programs by meeting certain criteria that promote good health—like clean air and water—as well as elevate healthy environments in other ways.

Amenities and proximity to opportunities for exercise, healthy eating and other wellness practices play a role in determining the building's health rating. For instance, a property within a walkable community scores higher than one that is not.

Fitwel's certification focuses on 12 key

areas to evaluate the evidence-based design and operational strategies that support human health in multifamily buildings. The WELL Standard focuses on health categories that directly impact residents, including air, water, light, fitness, nourishment, comfort, and mind.

Both programs tell residents that the property operator is seeking to create healthy spaces, as much of the general population spends more time indoors.

5G: faster connectivity for residents

Reliable, secure, fast connectivity continues to play a dynamic role for residents who own multiple personal devices. The new standard is not just a quiet, safe place to live—but four or five bars on a cellphone.

However, while a resident's Wi-Fi may work well inside the apartment, the property's signal may be spotty in common areas. With 5G, residents get faster, resilient connectivity with little network investment that might ultimately raise rents.

Mission-critical operations such as virtual and self-guided tours that depend on a strong signal also stand to benefit. An uninterrupted signal can mean a new resident for the property.

Imagine community-wide possibilities

Communitywide wireless is an optimal model for facilitating 5G and the newest generation of WiFi connectivity, wrote Doug Lodder, Boingo SVP, Business Development in *Broadband Communities Magazine*.

A "connectivity layer" blankets the entire property with secure WiFi, essentially covering the bases for the latest in IoT.

"Imagine what property managers can do with all that extra time—all while ensuring lease-ups," Lodder writes.

Also, envision a maintenance technician routinely identifying in real-time a potential HVAC system failure during a heat wave and heading off issues before they start. All from a mobile device, and maybe from across town, tapping into a reliable signal.

While 5G holds promise, making the leap isn't for novice technology staffs.

Relying on a trusted IT professional to determine the right path for any property is good business.

5G installation requires significant infrastructure upgrades.

Technology allows operators to make a big leap forward in the name of building health, and go where no signal has gone before. ⚙️

Author Tim Blackwell

The 5G difference



10-100X
greater
download
speeds



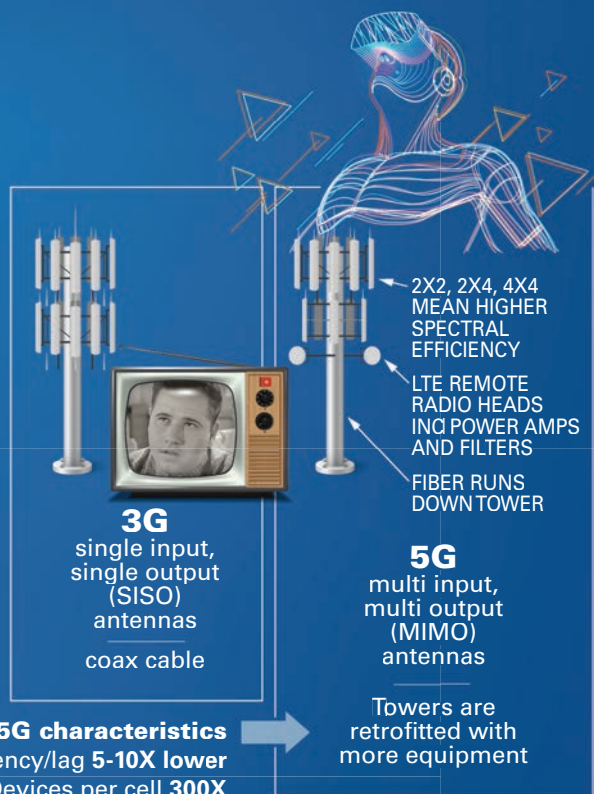
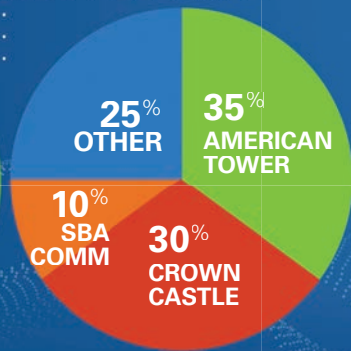
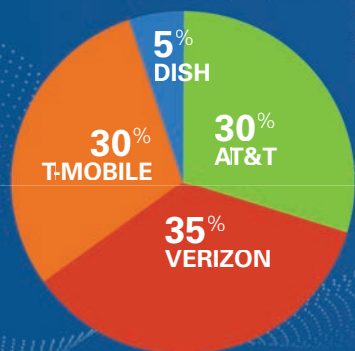
supports
high
bandwidth
content



ultra-high
definition video
downloads,
live streaming,
uploads

Wireless carriers

Cell tower ownership



Other 5G characteristics
Latency/lag **5-10X lower**
Devices per cell **300X**
Coverage/range **narrower**



Next normal: Remote and virtual energy-efficiency assessments

Virtual apartment tours exploded almost overnight last year after COVID-19 lockdowns temporarily eliminated in-person property visits. Even as restrictions have eased, such tours are a popular way to engage prospects surfing the internet looking for a place to live.

The use of virtual reality in multifamily is not limited to a prospect's cyber walk-through of an apartment. Technology has improved operational efficiency throughout the normal course of property operations to measure building efficiencies, as well as an alternative for onsite inspections and audits.

In fact, remote or virtual energy-efficiency assessments are becoming the new normal.

Virtual audits can help multifamily energy efficiency professionals stay on top of their properties without incurring lengthy travel and scheduling. Onsite staff can conduct their own audits via mobile devices, and

combined with real-time utility and energy performance data, arrive at an assessment much faster.

Virtual assessments open new doors

Remote audits have been around for years but gained considerable traction with the pandemic's onset. Auditors and inspectors suddenly could not routinely make many of their traditional property visits when the travel industry hit the brakes.

Shortly into lockdowns, the Building Performance Association (BPA) issued a statement on the benefits of virtual audits,

though they were quick to add that humans are needed for more tricky things like combustion safety tests and structural, system and health related assessments.

BPA emphasized that virtual audits could cover many of the basics, like identifying appliances needing replacement and remotely relaying energy and utility efficiency information, all while saving valuable time. Translate that to multifamily, and properties that wait days for an auditor or inspector to arrive can do their own virtual inspections and submit a report.

Data science is opening new doors in the energy efficiency arena, says the Association of Energy Service Professionals.

Through virtual assessments on smartphones and tablets, utility technicians can walk customers through steps to determine efficiencies or deficiencies of the appliances and equipment in the customer's apartment.

With virtual tools, customers can navigate through thermostat installations or

reconfigurations, assess appliance conditions, even identify air leaks, says author and energy assessment expert Seth Little in an article posted by Electric Energy Online.

“As in many virtual and digital applications, privacy control measures and settings allow customers to pause the video call, use a mute function, control certain permissions and perform other safety and privacy functions,” Little writes.

Also, utility companies can potentially increase the number of daily customer assessments, maybe even double them.

Little says data from early virtual pilot initiatives is driving virtual innovation deeper into on-demand energy advising, EV site assessment, electrification readiness panel inspections and other assessments.

He adds that regulatory plans and policies may soon follow to encourage wider adoption.

“These virtual program approaches are already being implemented in commercial,

single-family and multifamily residences and will very quickly become the new virtual norm given both the intuitive and user-friendly nature of the virtual engagements,” he wrote.

Faster designations

Possible uses for virtual technology in multifamily abound.

Maintenance technicians already armed with mobile technology and strong WiFi signal can walk properties and troubleshoot during normal operation while assessing utilities, appliances, fixtures and other components.

Also, virtual technology ultimately sets the table for remotely achieving desirable energy efficiency designations. Exterior, interior, building envelope and mechanical system evaluations that are typically handled in person are poised for virtual augmentation. Drone technology can provide the necessary visuals in many cases.

The potential, says one multifamily energy

efficiency colleague, is that apartment portfolios could achieve designations for more of its properties just in the time saved by reducing in-person inspections.

EPA has historically required a site visit for ENERGY STAR verifications, allowing a licensed professional to designate someone to act on their behalf. A licensed professional who can't make an in-person verification of an application can authorize a proxy like a building engineer to conduct the visit.

The pandemic forced the agency to get creative with that provision when distancing halted in-person inspector visits. EPA now allows site staff supplied with measurement equipment and a smartphone to do a virtual walk-through with a licensed professional.

It's as close to a virtual option as EPA gets but hints at the larger picture of where technology can take us, positioning utility management and energy efficiency to rise to greater heights. ☀

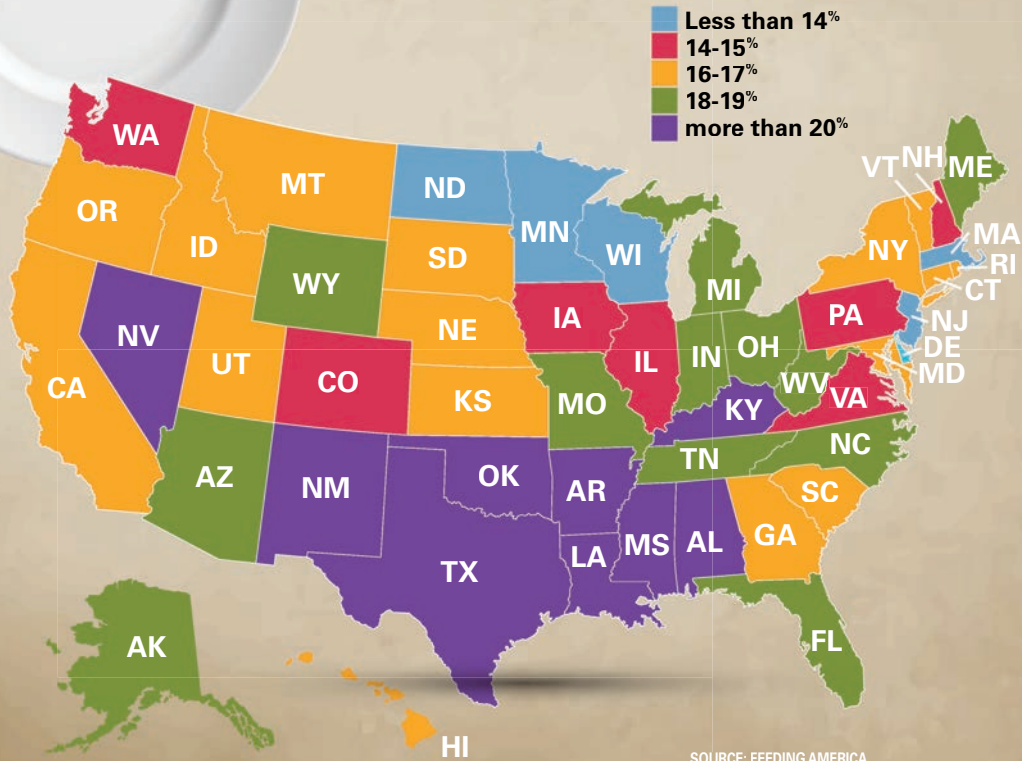
Author Tim Blackwell





U.S. Hunger

Rates of food insecurity per state (2020)



Greystar elevates sustainability and feeds the hungry

Greystar Property Management recently received the Utility Management Advisory Sustainability and Innovation award. Sustainability comes in all shapes and sizes.

The company collected thousands of pounds of food for the hungry, showing that humanitarian efforts are as much a part of sustainability as upgrading lighting and toilets. Helping others in such a meaningful way adds an extra layer of personal satisfaction as well.

Food donated by residents reduces stored items that may have been discarded or left to expire. As residents move out, giving pantry items to the needy means they help others, it's one less thing to move, and it refreshes their

canned goods supply—and expiration dates—as they move to their new place.

Food is the single-largest component in dumps and accounts for 22 percent of solid waste. Each year, a third of all available food in the U.S. goes uneaten through loss or waste, according to the USDA.

Greystar learned about the *Move for Hunger* program at a multifamily industry event and began a pilot program in 2019 at hundreds of its properties. The program took

flight last year and by the third quarter of 2020, Greystar had collected and donated 13,579 pounds of food, equating to 11,316 meals for those in need.

Today, more than 570 properties participate in *Move for Hunger*. To date, Greystar has collected 26,000 pounds of food.

The program also helps residents who are preparing to move to a new apartment and may not want to move their full pantry, or just want to rotate their stock in order to keep inventory fresh.

Promoting ESG balance

Non-profit *Move for Hunger* gathers nonperishable food items from residents during move outs and throughout the year. Collected pantry items are then delivered to a local food bank where the food is weighed and reported back to participating properties.

Communities can easily onboard: *Move for*

Hunger provides collection and delivery materials, as well as marking collateral for easy distribution to residents.

In February at its annual Energy Summit, The Utility Management Advisory honored Greystar for excellence in energy, water and/or trash management, and for demonstrating measurable enhancements in their sustainability practices.

"It was a great opportunity to impact our ESG program on multiple levels," said Lexi Goldberg, director, Global Sustainability at Greystar.

"It touches on the social side of giving back to the community, while engaging the property and resident. It touches on the environmental side by reducing waste at local landfills."

The program promotes balance within Greystar's ESG program by reducing the industry's environmental footprint, but also prioritizes community engagement, Goldberg said.

Move for Hunger is testimony that sustain-

ability is much broader, and opportunities exist beyond traditional thinking. As multifamily continues to employ proven utility management practices and conservation staples like energy-efficient lighting and plumbing fixtures, sustainability leaders are mindful about finding new ways to encourage residents to conserve.

Giving food is a good way, Goldberg says. Residents can see the impact in terms of pounds of food that might normally go to waste during a move-out. In addition, *Move for Hunger* makes it easy to measure ESG effectiveness, which is sometimes difficult to communicate to investors and the community.

"At a high level, sustainability is constantly in transition with what it represents and means," Goldberg said. "We are now thinking about health and well-being. This is a program that really rounds out the full value of sustainability. It brings in the social side so it's more than reducing our impact. It's also con-


tributes directly to the community."

Moving to make an impact

Move for Hunger has inspired Goldberg and Greystar leaders to think about other ways the company can make a sustainable contribution and encourage collaboration not just at the corporate level, but also at the property level. Goldberg, who believes we've only scratched the surface of sustainability and energy conservation, says collaboration on all levels will help move the needle.

Sustainability doesn't have to start with a big capital project to make a difference. After all, the whole is greater than the sum of its parts.

"We don't need all the answers to make a positive impact," she said.

"This program puts into perspective what can happen when you take a single resident donation. It may seem small, but helping someone who's struggling to make ends meet... well, that's real impact." 

Food waste in the U.S.

by the numbers

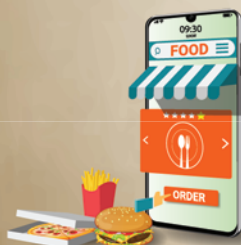


40%
of all food
produced in
the U.S. is
thrown away



133 billion
pounds
of food is wasted
every year. That's
1,249 calories per
person, per day.

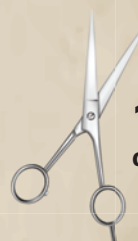
\$161 billion
cost of uneaten
food at retailers,
restaurants
and homes



\$1,500+ per
family of 4
annual cost of
Americans' waste
in discarded food



20% of
landfill
weight
food makes up
the single largest
municipal waste



diverting
15% of today's
discarded food would
cut America's food
insecurity in half



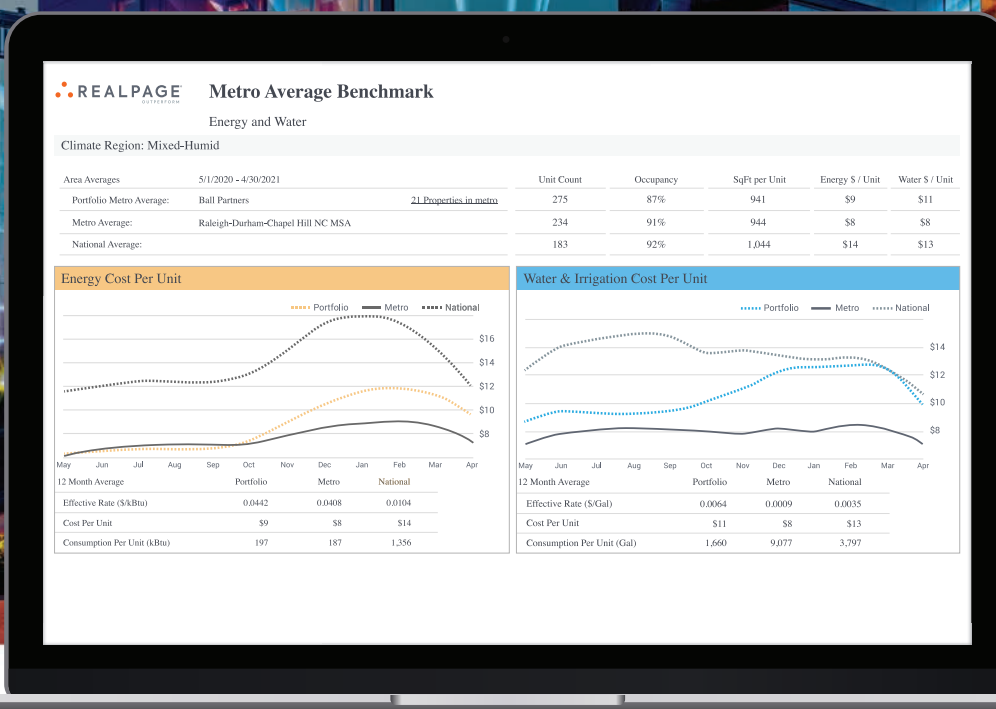
CO₄
methane

released by food is
21 times more powerful
than carbon dioxide



food waste
can be composted
into soil additives or
to generate electricity

SOURCE: US DEPT OF AGRICULTURE AND EPA



Turn Utility Expense into **SUSTAINABLE VALUE**

○ You can improve operating income by **\$24-\$69 per unit per year***

SCATTERED EXPENSES

Are you losing money due to uncoordinated, inefficient resident billing, invoicing, cost recovery and sustainability services?

GET IT TOGETHER

With the RealPage® Utility Management (RUM) Suite, you'll be able to maximize recovery, reduce late fees and improve your operating income. Learn more about the most comprehensive and flexible set of online billing and invoicing tools and services, which is powered by the largest utility expense database in the nation and is supported by expert utility advisors.

Visit www.realpage.com/JOUM21
or call 1-87-REALPAGE

* Source: 2019 RUM Case Study

© 2021 RealPage, Inc. All trademarks are the property of their respective owners. RUM-21-241

REALPAGE
OUTPERFORM