MULTIFAMILY

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THE LATEST RESEARCH AND MODELS FOR OPTIMIZING UTILITY USAGE IN MULTIFAMILY

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REALPAGE

REALWORLD2022

SPECIAL EDITION

The Pursuit of Excellence

Journal of Utility management

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Message From the Publisher

In literature and for some in life, one of the conflicts is Man vs. Self, which represents the epic internal battle against our weakness to make ourselves stronger. Set goals: "I am going to workout" or "I am going to rewrite this letter (repeatedly)" because we are not feckless. Mediocrity is not our state, and we will not simply tread water. In short, we chase something internally to unlock our greatest potential and state. We pursue our best, we pursue excellence.

Excellence is always one step ahead of us. We break the four-minute mile. Why stop there? Not good enough, the current record is 3:43.13, which was set in 1999 by El Guerrouj of Morocco, but I would not be surprised if within my lifetime, that record was broken. As an industry, we are making a pivotal shift from "utility expense is uncontrollable" to "we are going to reduce our consumption (and carbon) by X%." This journey could not be timelier as rates rise out pacing CPI and dramatic, catastrophic weather event abound. Throughout all the turmoil, we stay the course; we chase our best selves. We pursue excellence.

This issue of JOUM pays homage and provides examples of our industry pursuit of excellence. The second winner of the Utility Management Advisory's Innovation award showcases a leader in our industry, changing a physical asset for the better. Bill Melendez's deep dive into Operational Excellence, and Carol Schmitt's dive into our industry movement to identify Environmental Social Governance are all fantastic examples of the shifts in our industry to control our expenses and be better.

I encourage you, reader, to use this issue as a guide, an inspiration, a marker on your journey as we pursue excellence together. I simply cannot wait to see what records you break.

Mary Nitschke
Publisher

Message From the Guest Editor

It is interesting to see how different people/organizations choose their objectives and design their pursuit of excellence. Excellence itself means different things to different people/organizations. For some it means increasing Net Revenue, for some it means increasing IRR and for others excellence can be achieved by controlling expenses.

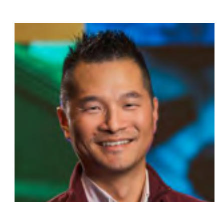
More so today than in the past, excellence includes embracing a greater focus on ESG. As those in our industry continue on our ESG journey, or perhaps prepare to take our first steps in ESG, we look to the leaders and pioneers in the space — long before ESG even had a name, long before ESG was considered important.

Patagonia is one such pioneer. If you are embarking on any Sustainability or ESG path, Patagonia is a Case Study that everyone knows. They were doing sustainability before it was Sustainability. Patagonia was doing the things that are now considered to be ESG practices when these practices were considered revolutionary or maybe even a bit fringe.

Today, Patagonia not only donates its profits to environmental causes but offers its customers merchandise credits for the return of gently worn clothing, which it then offers in its used clothing sections. Patagonia looks at where their materials are coming from and how they are sourced. Patagonia even cares about their products' life cycle AFTER products have left their shelves, AFTER products have been on journeys of their own!

They are not perfect, but they are transparent, focused on their mission and actively pursuing their objectives. They may not operate in the same space as any of us, but in their Spirit of Adventure, Patagonia's journey can serve as a roadmap of suggestions for our own ESG adventures.

Our journeys will certainly not be easy or smooth, but each journey is unique to that company and is an inimitable product of our organizations' own efforts and objectives within ESG. There are pioneers to follow, but everyone and every organization must eventually chart their own path towards excellence.



Peter Chan
Guest Editor

Utility Budget Guidance for 2023

Utilities are usually among the top three operating expenses at a multifamily community, but they are also among the most complex to forecast.

For budgeting exercises of any kind, it often makes sense to first identify what you will use as your baseline, and then identify which adjustment factors will be applied. But budgeting for utilities can involve more work than budgeting for other transaction types because the potential adjustment factors involve several moving parts. They include vendor rate changes, usage changes due to operating and asset conditions, and usage changes due to weather.

Baseline Dollars

Many companies start with a simple baseline of prior year actuals. One challenge to this is that normally when budget season is upon us, Q4 actuals aren't available for the current year —because Q4 hasn't happened yet! Sometimes this causes a default back to the "prior prior" year actuals, but logically this implies a two-year gap between the baseline and next year's Q4 budget. Some companies use a recent Q4 forecast, while others stick with the two-year gap and the prior year actuals. Whatever you choose, best practices include being consistent and providing clear documentation/ disclosure to all stakeholders.

Adjusting for Vendor Rate Changes

After identifying your baseline, you have several options when deciding which adjustment factors to apply. Rate changes can be treated as a simple high-level overview by using a flat-rate national average, which will be discussed further below. A more granular approach, if you have already collected rate notices throughout the year or can set aside time to research by calling vendors and searching vendor websites, is to apply a different rate for each of your vendors based on published vendor rate changes. Some utility management companies also offer this rate research service for a fee. The output of these services range from a simple PDF booklet organized by vendor to a detailed Excel file with rates conveniently linked to each of your properties. Lastly, if you participate in energy procurement contracts in deregulated markets, ask your broker or supplier for property-specific price change guidance that is customized with the actual pricing you have locked in.

Flat-Rate National Averages

Average U.S. price increases for different types of utilities are shown in Fig. 1. Some like to use the first row because it is a likely worst-case scenario, showing the highest annual increase in the last 10 years (2012-2021). In the case of water and sewer for example, while the average annual increase over last year was 3.1%, the highest increase over the same period was 6.4%. In addition to the more conservative worst-case approach, there are three-year max and last year increases shown, which could be used instead. *In the case of trash, electricity and gas, last year was the highest increase during the last 10 years thereby resulting in the unusual situation of all three rows having the same value for these columns!*

Timeframe	Water/Sewer	Trash	Electricity	Gas
10-year max (2012-2021)	**6.4%**	**4.7%**	**4.3%**	**16.7%**
Three-year max (2019-2021)	3.2	4.7	4.3	16.7
Last year (2021)	3.1	4.7	4.3	16.7

Consumer Price Index: All Urban Consumers (Fig. 1)

Note that Fig. 1 shows historical performance. As they say on Wall Street, past performance is not necessarily indicative of future results. That said, in the case of water/sewer and trash, this is probably a good gauge for setting future expectations.

Since energy (electricity and natural gas) tend to be more volatile, many property and asset managers ignore historical averages and instead use the U.S. Energy Information Administration (EIA's) forecasts for residential retail price increases for the coming year. Their latest numbers are shown below (Fig. 2), and in this case are surprisingly less conservative than the historical numbers above.

U.S. EIA's Short-Term Energy Outlook:
Retail Prices: Residential Sector (Fig. 2)

Timeframe	Electricity	Gas
2021	13.72 ¢/kWh	12.27 $/Mcf
2022	14.45 ¢	$14.49
2023	14.75 ¢	$14.78
Percent change from 2022-2023	**2.1%**	**2.0%**

Note that EIA releases an updated outlook around the same time each month. This article is based on the June 7, 2022, release. If you can wait to finalize your budget until a later update, it might make sense to use their current numbers as a placeholder and refresh your budget when the new numbers are published. You can always find EIA's latest outlook at: **eia.gov/steo**.

Rate Adjustments Wrap-Up

You may have heard the saying, "it's a budget, not a Bible." If you subscribe to this philosophy and prefer to keep your adjustment factors simple, then **you might want to pick one of the flat-rate national average methods mentioned above, multiply it against your baselines and stop right there.** There is certainly value to that approach, not the least of which is producing numbers that are easy to understand and explain/defend during your internal budget review meetings. But for those of you who are on a quest for the holy grail of trying to produce a budget that most accurately tracks with next year's actual expenses, you may decide to apply more vendor-specific adjustments, as well as reading on to include additional types of usage adjustments.

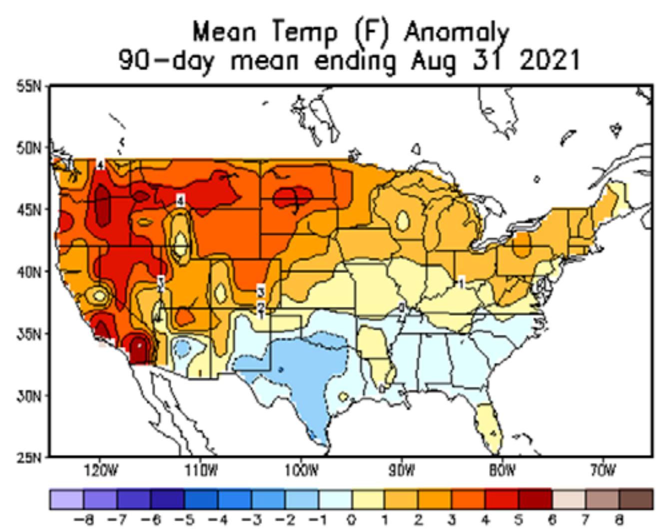
Adjusting Usage for Operational Changes

In order to determine the impact of operating and asset changes, you'll need to research that on a property-by-property basis. At this stage, you are looking to catalog the impact of issues that could impact your utility expenses or revenues, such as capital improvement projects, resident billing or other policy changes, and occupancy rates. You should note any anomalies that may have occurred in the prior year.

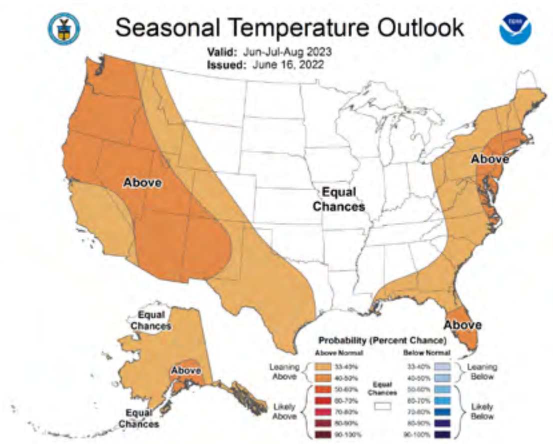
Adjusting Usage for Weather

When considering usage assumptions based on weather, many use it as a sanity check rather than a detailed adjustment factor. In order to evaluate the impact of weather on utility usage, it is worth considering the temperatures during both the baseline period and the forecast period. Did the baseline period experience near normal temperatures, and is the forecast period expected to be near normal? In many parts of the United States, extreme weather seems most frequent during summer (June, July and August) and winter (December, January and February). The National Weather Service publishes average temperature information that can be used as a reference when reviewing weather conditions. They define "normal" using 30-year averages. You can get a ballpark sense of prior and forecast temperatures by comparing Fig. 3 with Fig. 4 for summer and comparing Fig. 5 with Fig. 6 for winter. Note that these maps do not show percentage variance but rather show degrees Fahrenheit anomaly for prior period, and simply show whether an area is likely to have above, below or normal temperatures for the future period.

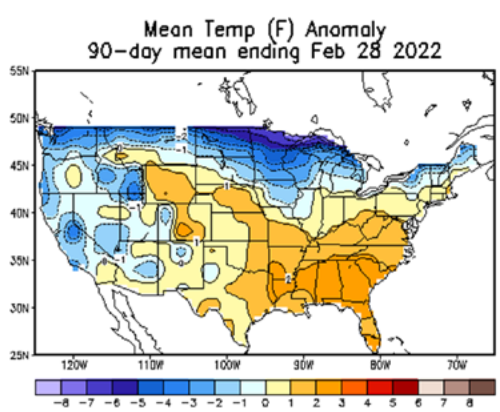
National Weather Service:
Prior Summer Temperatures (Fig. 3)



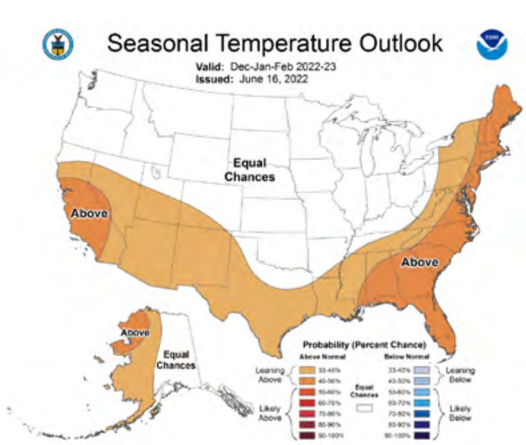
National Weather Service: Future Summer Temperatures (Fig. 4)



National Weather Service: Prior Winter Temperatures (Fig. 5)



National Weather Service: Future Winter Temperatures (Fig. 6)



For example, according to Fig. 5 the prior winter in Georgia was above normal (unusually warm). Taken by itself, one might want to budget an extra increase in heating costs for the coming winter. However, according to Fig. 6 the future winter is also leaning toward having above normal temperatures, which may make a special weather adjustment unnecessary for any properties in Georgia. On the other hand, Fig. 3 shows the prior summer in Texas was below normal (unusually cool) and Fig. 4 shows the future summer could bring above normal (unusually hot) temperatures to most of the state. Budgeting an extra increase for properties in this location (in addition to any rate or other adjustments) could be helpful.

Calculating a specific percentage for weather adjustment can be difficult. This aspect is more of an art than a science as illustrated by the examples above. While it is possible to obtain data on prior weather versus normal weather for each of your locations, trying to quantify future weather is generally elusive.

As we have seen, budgeting for utilities involves many considerations, but there are methods, resources and data available to make the process more bearable. Identify baselines and then adjust for significant changes in vendor rates, operations, assets and weather.

Author Kent McDonald

Towards a Deliberate Focus on Excellence: Lessons in Community Management

Some time back I saw the movie The Pursuit of Happyness with Will Smith. It really inspired me to strive for excellence. While the movie focuses on the struggle of a young black man, the underlying theme was really a search for fulfilment of the protagonist's dream. The character, Christopher Gardner, succeeded because, in all things, excellence drove him to success. It was a lesson the adult Gardner continuously reenforced to his young son, Chris.

Excellence, besides being used as a noun, is an action word. It exudes hard work and striving against the odds in life. Greek philosopher Aristotle once said, "Excellence is never an accident. It is always the result of high intention, sincere effort, and intelligent execution; it represents the wise choice of many alternatives - choice, not chance, determines your destiny."

As a young 2nd Lieutenant, I quickly learned that there are many ways to solve a problem or execute a command. We all approach problem solving differently. The striving for the result creates challenges in the execution. The same goes for any worthy pursuit in life that gets us to our end goal. The issue with seeking excellence is focusing less on the end of the journey and more on the journey itself. How do we get there? For my solders, any implementation that accomplishes the objective is perfectly okay. For myself, the quality of implementation determines the level of success that follows. The optimal solution is what I strive for.

Excellence, as Aristotle pointed out, is the process of choosing the optimal application that maximizes the end results to the benefit of all involved. But to achieve excellence in whatever manner of work we must accomplish, "good enough" falls short of the level of achievement required to excel. The pursuit of excellence is not so much about the goal but more so of the implementation that gets us there. Excellence pays attention to details, strives for perfection, emulates great accomplishments, has a win-win perspective.

The challenge for the multifamily community, is to provide a level of excellence, not only to the level required by industry standards, but to exceed that level and become the place to go for renters within the industry. So how does one move average results to the level of excellence? The priority in the step towards achieving excellence is getting the motivation refocused. As I mentioned previously, the things that motivates most organizations are (1) high intention, (2) sincere effort, and (3) intelligent execution. Let me point out that poor execution impacts the previous two dramatically since those two deals more with focus and motivation. Effective and focused execution then is foundational to the formula for bringing a company to the level of excellence. Peter Drucker pointed this out exceptionally in his article *Managing Oneself.*

One should waste as little effort as possible on improving areas of low competence. It takes far more energy and work to improve from incompetence to mediocrity than it takes to improve from first-rate performance to excellence… Energy, resources, and time should go instead into making a competent [company] into a star performer.

Organizations should adhere to Aristotle's advice in this constant changing world environment where what worked before no longer applies. Only by implementing highly intentional and intelligent execution, with sincere and transparent effort, can all who put forth the effort towards excellence achieve it.

The same applies to leadership and to newly acquired tenants. Tenants reflect the apartment leadership mindset and get a high level of motivation by associating with the multifamily community they are part of. On the other hand, disenfranchised tenants rarely focus on internal apartment management initiatives, nor do they have pride in the complex where they live. An apartment is merely a place to "hang their hat" after a long day. Moving these individuals toward a cooperative endeavor of pride and excellence within their living community then starts with leadership, both at the management level and within the community tenants live in.

Excellence, per Will Durant's viewpoint, is a repetitive lifestyle behavior and mind set. It is "what we repeatedly do, therefore excellence is not an act, but a habit" (The Story of Philosophy: The Lives and Opinions of the World's Greatest Philosophers (1926) by Will Durant). I totally agree. Great people do not ponder how to achieve. They achieve because they think and do things that cumulatively result in achievements. Apartment management staff succeeded because they implement a daily and repetitive behavior and mindset. They achieved because they internalized the thinking and habits of daily focusing on tenant needs and service. They truly care about tenants and are passionate in supporting the community within. The outcome is excellence and over achievement in status and ratings.

In my current civilian role, excellence is a way of life. Meeting customer goals is not a manner of competitiveness but one of striving for improved achievement in what we, as individuals, do every day. Excellence is an ingrain habit that propels a company to achieve global results. After eight years on the job, I have come to realize that excellence, in the military or private sector, is the result of conscious and passionate efforts repetitively implemented to achieve stated goals. The standard for measuring excellence comes from repeated experiences and acquired skills, from reflecting upon past failures and successes, from lessons learned and improved upon, from meeting our next challenge with renewed intelligent execution.

I had the opportunity to visit my brother for a family reunion. During my visit I observed the network he had implemented in his condo home. Basically, he used the Apple Plus Assistant® API to control all aspects of his environment. It was fascinating and eye opening as to the level of Artificial Intelligence (AI) that one could use in smart apartment implementation. It made me wonder as to how far in AI will we eventually get in our daily lives. By a simple command of "Hey Siri" I could listen to smooth jazz or turn on a ceiling fan. I could ask for a specific movie or turn down the thermostat a couple of degrees. Really amazing! What impressed me the most was the driving logic behind the home automation. It allowed me more time to focus on meaningful tasks.

So, what does this have to do with excellence? In a way, the Multifamily industry is striving for excellence in implementing lifestyle automation. AI and voice assists like "Siri" are but tools towards achieving this. This thought suggests the question of whether AI can be cognizant enough to provide what we humans wish we could achieve –the pursuit of excellence in quality living. Like the television series, Star Trek, all want a level of quality existence where the issues of life are no longer survival challenges.

While we may not achieve utopia today, we can improve one individual at a time by pursing excellence in all that we do and think. That is the challenge we must all confront and embrace as individuals and as coworkers within our corporate environment. Our intentions, our efforts, our execution will determine how noticeable the action word "excellence" is perceived by our tenants, our customers, our friends and neighbors, our coworkers. As Aristotle has stated, "choice, not chance, determines your destiny."

The pursuit of excellence starts with the word "excel." One definition of excellence is "the quality of being outstanding or extremely good." To excel, one must achieve above the norm. In other words, normal outcomes do not gender excellence. If excellence does, per Aristotle, require a deliberate and intelligent execution -- then it stands to reason that all achievers must achieve through a conscious and deliberate effort. Excellence requires thoughtful focus. Successful multifamily management teams have an inner vision that drives them to excellence in achievement. They do so because the vision within forces them to consider the daily choices they make.

Author Bill Melendez

American Realty Advisors® Wins 2022 UMA Sustainability and Innovation Award

The Utility Management Advisory (UMA) is pleased to announce that the winner of this year's Sustainability and Innovation Award is American Realty Advisors (ARA)!

The Sustainability and Innovation award celebrates excellence in energy, water, and/or trash management, as well as projects demonstrating measurable enhancements in sustainability practices.

The award was presented to ARA during the RealPage® Energy Summit held March 9-10, 2022.

Earning the award was ARA's retrofit and resulting LEED Gold certification at ALARA Union Station in Denver.

ALARA Union Station is a mixed-use, multifamily residential property in the trendy Lower Downtown (LoDo) neighborhood of Denver.

Completed in 2015, the 376,907 square foot property has studio, one-, two-, and three-bedroom apartments, a resort-style swimming pool and lounge, yoga/barre studio, bocce ball court, fitness studio, coffee shop, restaurant and bar, and even a pet-washing station. It boasts a transit score of 94, bike score of 92 and Walk Score® of 88.

ALARA Union Station earned LEED v4 O+M Gold certification in July of 2020 by incorporating energy, water, waste, transportation and human experience enhancements.

By achieving a LEED Gold certification, the building is demonstrating best practices in sustainable site management, water conservation, energy efficiency, waste management and indoor environmental quality. These factors not only decrease the environmental impact of the building, but they also contribute to residents' wellbeing.

Congratulations on the win, ARA!

More information about the Utility Management Advisory (UMA). The UMA is a professional group for anyone working in the multifamily industry and involved in utility management and sustainability. It is a forum to hear about and discuss new ideas, technologies and regulations. UMA is a volunteer, not-for-profit group, with no membership fee. For more info, please visit http://umadvisory.org/.

By Lori Hanson

Multifamily Impacts: Phase Out of 3G Networks

As you may have heard, mobile carriers across the U.S. are shutting down their 3G networks, which rely on older technology, to make room for more advanced network service, including 5G. This shutdown will impact more than just cellphones – it impacts other devices, such as tablets, home security systems, certain medical devices and other connected products that may be using 3G network services – some of which may be currently in use at your communities. It also includes devices that use cellular connectivity as a backup when a wired internet connection goes down.

Additionally, the FCC has mandated major providers to sunset copper Plain Old Telephone Systems (POTS) lines.

This process is happening as we speak.

- **AT&T®** announced that it will finish shutting down its 3G network by February 2022.
- **Verizon®** announced that it will finish shutting down its 3G network by December 31, 2022.
- **T-Mobile®** announced that it will finish shutting down Sprint's 3G CDMA network by March 31, 2022, and Sprint's 4G LTE network by June 30, 2022. It also announced it will shut down T-Mobile's 3G UMTS network by July 1, 2022, but has not yet announced a shutdown date for its 2G network.
- The copper POTS lines will sunset by the beginning of August 2022.

If your mobile carrier is not listed here, you may still be affected. Many carriers, such as Cricket®, Boost®, Straight Talk® and several Lifeline mobile service providers, utilize AT&T's, Verizon's and T-Mobile's networks.

Note: *These are dates for completing the shutdowns. Carriers may begin retiring parts of their networks sooner.*

It is important to contact your mobile provider or consult your provider's website for more information about their 3G retirement plan and whether your phone, or other connected device, may be affected. It is important to plan now so that you don't lose connectivity — including monitoring devices contacting proper responding parties and the ability to call 911.

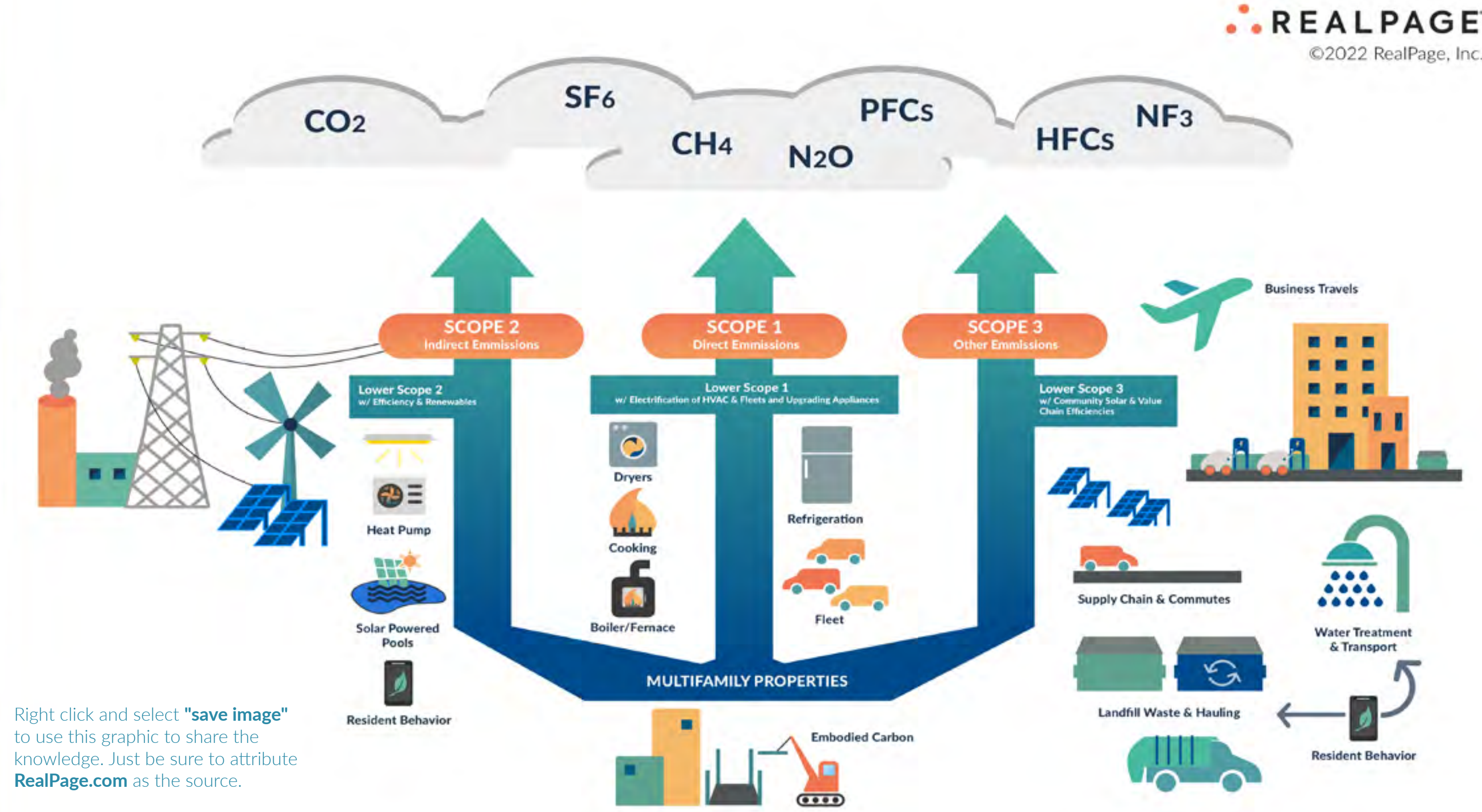
Below are examples of devices that may currently rely on 3G or POTS lines at apartment communities:

- Elevator equipment/ monitoring lines/call boxes
- Fire alarm panels
- Security alarm systems
- Emergency call boxes/ emergency phones
- Meter-reading devices
- Elevator emergency phones (Kings III)
- Gate systems/call boxes
- Office phone/fax lines
- ATMs
- iPads®

For more information, visit:
https://www.fcc.gov/consumers/guides/plan-ahead-phase-out-3g-cellular-networks-and-service

Author Gail Corder

MULTIFAMILY SCOPE 1, 2, 3 EMISSIONS



Right click and select **"save image"** to use this graphic to share the knowledge. Just be sure to attribute **RealPage.com** as the source.

ESG: Is Scope 4 Real in Real Estate?

There is a lot of hullabaloo around ESG these days.

Environmental, Social and Governance, or ESG, claims and aspirations announced in corporate sustainability reports over the years are coming under scrutiny. Globally, government standards are being created to regulate corporate sustainability claims that influence investors (aka, No greenwashing!). ESG ratings organizations are also coming under fire for how they rate and their respective transparency.

When you consider that nearly $40 trillion is already invested in ESG funds globally[1], it's not surprising that socially responsible or ESG investing — and the growing public demand for regulation of accounting and ESG claims — makes headlines.

One of the most scrutinized areas is how each organization claims and reports its greenhouse gas emissions (GHGs). When it comes to standardizing emissions measurement and reporting, consensus is to focus on Scope, which reflects where emissions are generated and/or curtailed

What Are GHG Scopes?
Over 30 years ago, in 1990, the first Greenhouse Gas Protocol was established. The resulting accounting framework of GHG Scopes helps standardize quantifying and reporting emissions by type and source.

Estimates are that the built environment — from new construction through operation and demolition — generate 40% to 50% of all the world's emissions[2]. As this is nearly half the global challenge, it's good to understand the Scopes and how you can reduce them in your building operations:

Scope 1: Direct Emissions.
For real estate, these are the emissions generated onsite, by buildings and their operations. Efforts to lower emissions in commercial and residential properties range from eliminating gas usage, such as replacing gas-fired boilers, water heaters and appliances with electric HVAC, heat pumps, ovens and stovetops. Updating refrigeration also falls under Scope 1 as does electrifying all your vehicle fleet, whether that be service trucks, company cars and even lawn equipment. Installing onsite solar generation coupled with battery energy storage also lowers Scope 1 impact.

Scope 2: Indirect Emissions.
Electric-grid power usage embodies Scope 2. The dirtier your local grid, the more Scope 2 emissions. Although the grid's amount of green, such as wind and solar renewable energy, electrons is out of your control, you can make choices to lower Scope 2. Every lighting, HVAC or other efficiency investment you make lowers the amount of electricity you pull from the grid, thus, lowering Scope 2. If you procure a virtual power purchase agreement for solar, that too lowers indirect emissions.

Scope 3: Other Indirect or Value Chain Emissions
This is a huge bucket that embodies everything from your garbage hauling and water treatment impact to employee and resident cummutes, cleaning materials, supplies purchased,

1. https://www.bloomberg.com/news/articles/2022-02-03/esg-by-the-numbers-sustainable-investing-set-records-in-2021
2. https://www.eesi.org/topics/built-infrastructure/description
https://architecture2030.org/why-the-building-sector/

air travel and so on. Some of the easiest ways to lower your Scope 3 impact are to offer Community Solar to residents, divert more trash from landfills, install electric vehicle charging, lower business travel and monitor to find and address water leaks as they occur.

Wait, Isn't There a Scope 4?
If you are paying attention to the headlines, then yes, you've probably heard of Scope 4.

In June, the U.S.'s largest utility company, California's PG&E, raised eyebrows with the public release of its annual Sustainability Report. PG&E claims in its 2022 report that it will not only be "climate- and nature-positive" by 2050, but also that it is establishing "Scope 4 goals to enable customer emissions reductions."

The earliest industry reference I could find on Scope 4 goes back nearly a decade. In 2013, the Greenhouse Gas Protocol authority began a debate whether adding a measurement for goods and services that avoid GHGs and decarbonize the supply chain makes sense.

Although Scope 4 remains unofficial, organizations like Tesla® – which has made its own headlines as it was delisted from a leading ESG index, mostly for its Social and Governance business and operations practices — would certainly benefit from this added accounting of their products' climate change impact.

Is Scope 4 real in real estate? Not yet. And may never be.
According to Dan Winters, GRESB Senior Director, during the heart of the COVID pandemic, there was much discussion about adding Scope 4 for real estate. GRESB is widely recognized as the top organization globally for comparing performance and rating real estate entities for their ESG performance.

So, it's not surprising that when the work from home surge was initiated as part of COVID quarantine, commercial real estate saw a great decrease in their emissions. If there was a Scope 4 for avoided commute and commercial emissions, would that not be good?

For multifamily, however, the shift resulted in acquired emissions as people were home 24/7. So other than commutes, emissions burden was only shifted not reduced. Thus, it's a quandary.

"Scope 4 is in discussion but remains unclear how or if it will ever become part of greenhouse gas accounting standards, particularly for real estate," remarked Winters. "Like many advances to ESG regulations and sector guidance, a combination of preparedness and timing plays a significant element to industry adoption."

As work from home is now a permanent part of our economy and ESG investing is a megatrend here to stay, expect more headlines about GHG and Scopes emissions reporting in the future. Whether or not Scope 4 will be part of those future standards remains to be seen.

Read more from GRESB about Scope 4 at https://www.gresb.com/nl-en/whose-carbon-is-it/

Author Carol Schmitt

1. https://www.bloomberg.com/news/articles/2022-02-03/esg-by-the-numbers-sustainable-investing-set-records-in-2021

Q3 2022: Energy Outlook

ABOUT THE ENERGY OUTLOOK:
The Energy Outlook is designed to inform you about the current state of the natural gas and electric energy markets. While prices are most important, we offer insights into the drivers of the energy markets and shed some light on how these drivers impact market prices. The primary energy market drivers fall into two areas: Fundamentals and Politics.

- Fundamentals are the factors influencing energy supply and demand of electricity and natural gas. Supply factors include power generation; natural gas production (drilling rigs, fracking and horizontal boring); underground gas storage; and pipeline capacity. Demand factors include consumer usage and weather (driving how much energy is required for heating and air conditioning seasons).

- Politics include changes to the legal and regulatory environment that can cause major moves in energy prices. Political impacts can be new emission standards, such as mandated movement to cleaner generation facilities with higher operating costs, new energy taxes or fees, and restrictions on new pipeline or transmission line placement. Political factors can be domestic or international.

2022 Q3 Outlook: Weather, Storage and War

An unfortunate event on the Freeport LNG facility located in Quintana, Texas, in early June 2022 has created a natural gas price reprieve in the U.S. and contributed to even higher price inflation in Europe. The explosion at the Freeport LNG facility has diverted 2.1 Bcf/d natural gas supply to storage or for use in the daily market. News of the LNG export service not returning at the facility until late 2022 has driven NYMEX prices off by $2 per MMBtu for the prompt month and over $1.1 per MMBtu for the forward 12-month strip.

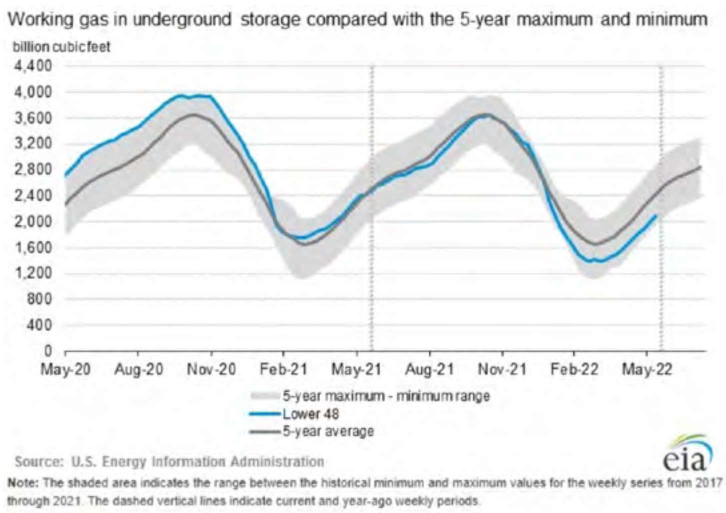
The extra 2.1 Bcf/d staying in the U.S. supply chain is welcomed news, but gas inventories are still 13% below the five-year average. Natural gas production for 2022 is only 3% higher than 2021, and natural gas consumption by electric generation plants is on pace to set a record high in 2022.

Weather news from NOAA is not the greatest, calling for unusually high temperatures in most of the country for July through September.

The upcoming hurricane season is also predicted to be very active. The war in Ukraine continues, and although seemingly confined to the eastern part of the country, the disruption of natural gas supply to Europe remains very strong. Germany is even considering refiring coal generation plants to deal with the shortfall.

Natural Gas Storage

Storage Well Below the Five-Year Average



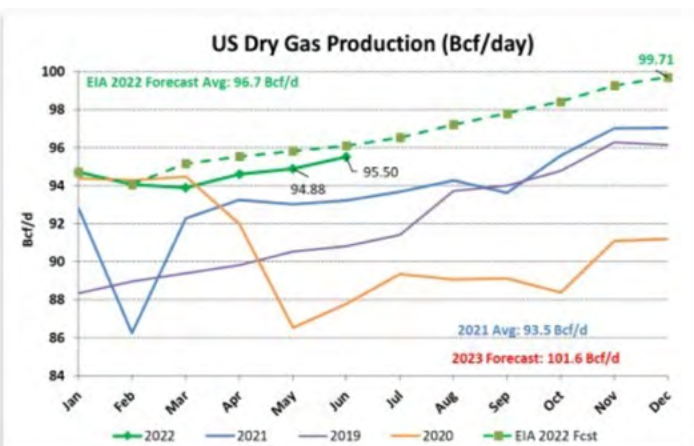
Link for above chart - http://ir.eia.gov/ngs/ngs.html

The Energy Information Administration (EIA) "Natural Gas Storage Report" shows working gas in storage was 2,095 Bcf as of Friday, June 10, 2022. This represents a net increase of 92 Bcf from the previous week. Stocks were 330 Bcf lower than last year same period and 323 Bcf below the five-year average of 2,418 Bcf. At 2,095 Bcf, total working gas is within the five-year historical range.

Every year the traditional storage injection season starts on April 1 and continues through October 31. This injection season has started with very low increases to storage volumes during April. This year's withdrawal season ended well below the five-year average. The colder-than-normal temperatures during April did not help the situation. The Ukrainian/Russian conflict continues and appears likely to continue for the foreseeable future, the global economy is in full motion posting high inflation numbers, most markets are wide open and global demand for natural gas has increased year-over-year.

Demand for natural gas will continue to be strong and production continues to play catch up; price volatility with spikes during high-demand periods is here to stay. The explosion earlier in June at the Freeport LNG export terminal caused a major disruption in LNG exports and returned over 2.1 Bcf/day to the U.S. market. This facility accounted for over 17% of all U.S. LNG exports annually and will not be back in operation at least through the end of the year. This surprise additional capacity has eased natural gas pricing in the U.S. but has caused additional pain for the European markets.

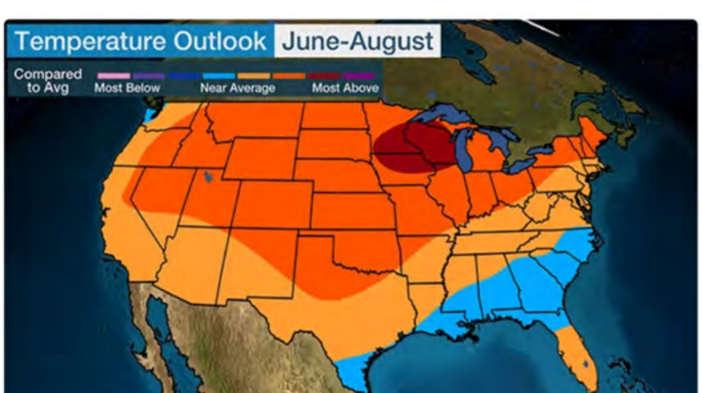
U.S. natural gas production in 2021 averaged at 93.5 billion cubic feet per day (Bcf/d), the prior daily record was set in November 2019 at 95.4 Bcf/d. The EIA is forecasting that production for 2022 will average at 96.5 Bcf/d, mostly driven by higher prices. Producers will continue to maintain current production, as well as meeting additional demand pressure, but they will remain sensitive to forward market pricing.



Source: EIA

Weather Forecast

Summer 2022 Expected to be Top 10 on the Charts!



Source: Weather.com

Summer 2022 is expected to be hotter than average across a large swath of the U.S., according to an updated outlook from The Weather Company®.

An expansive area from the Great Basin and Rockies to the Plains, Midwest and interior Northeast is forecast to see temperatures that are the most above average from June through August. The most persistently hot conditions, relative to average, might set up in parts of the upper Midwest. Meanwhile, summer heat may be a bit more muted, relative to average, across parts of the Southeast and the Gulf Coast. Overall, the setup this summer looks like last summer.

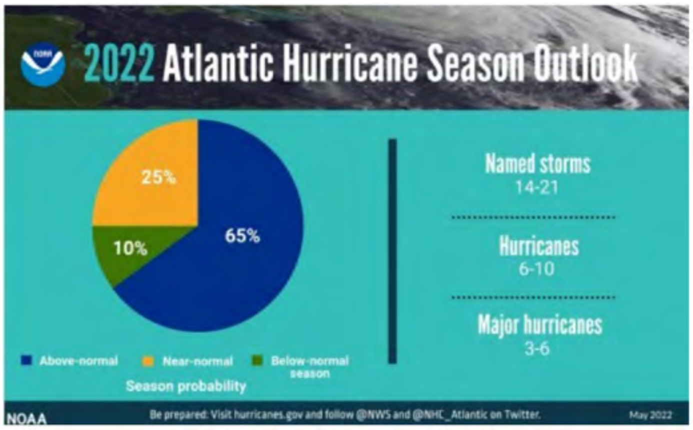
Current forecasts are trending toward a rare "triple dip," in other words a third consecutive La Niña is coming this fall and winter. Five of the past six summers preceding La Niña winters have been overall hotter in the U.S. The current drought from the Plains to the West may further influence summer temperatures. Drier soil heats up a lot faster and can boost areas of high pressure aloft, often associated with extensive heatwaves.

Summer weather has come in strong even before the first day of summer on June 21. The forecast is pointing towards the likelihood of a top 5 hottest June since 1950. This record is driven by Texas and the South, which are likely to have their hottest June on record. The only portion of the country with cooler temperatures in June will be the Pacific Northwest.

The northern Rockies, Northern Plains and Upper Midwest are most likely to swelter in a hotter than average July in 2022. Areas from the central Rockies to Oklahoma to the Great Lakes are also expected to have a hot month. The Southeast and much of the Gulf Coast may have a somewhat cooler than usual July. With the focus of the heat farther North, this could leave the Southeast in a pattern of humid, but less hot easterly winds. The best chance of a cooler July, however, may be in the Southwest, where an early start to the wet phase of the monsoon — summer thunderstorm season — is expected, as happened last summer.

The core of August's heatwave is expected from the Great Lakes to northern New England. However, a generally hot August is forecasted from the Missouri Valley to the Ohio Valley and mid-Atlantic. For the same reasoning discussed in the July paragraph above, August heat is expected to be muted, overall, from the Desert Southwest to the Carolinas and Florida.

The Atlantic hurricane season has a higher probability for above average activity.



Energy Pricing Fundamentals

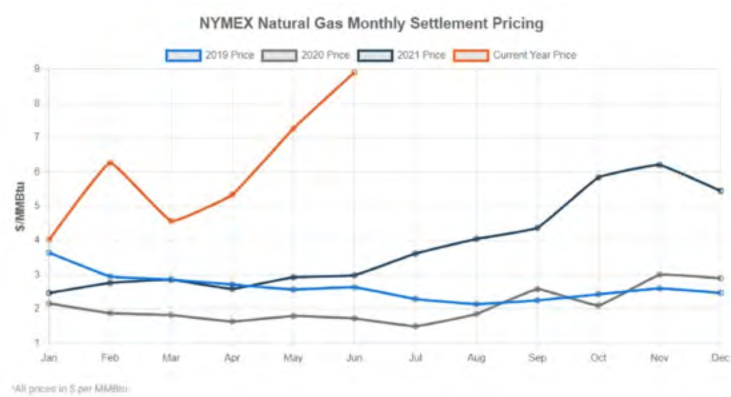
Near-Term Prices Are Up – Long-Term Prices Are Slightly Up

The Energy Outlook mainly focuses on natural gas prices because they tend to lead electricity prices. As natural gas prices increase or decrease, electricity prices often follow suit — but hours, days or weeks later. Also, natural gas has a national price established on the NYMEX. Other regional prices and markets exist but are compared with the NYMEX prices. Electricity is different because the U.S. is divided into six regional markets, each setting its own price and having its unique market rules. All six regions tend to move in the same direction, but price volatility and generation vary considerably between regions.

The U.S. economy experienced its largest contraction in 74 years by dropping 3.5% in 2020. The economy moved from 30% capacity in 2020 to approximately 100% by the end of 2021. The results of this increase have been higher prices and product shortages. Originally inflation was advertised as temporary, but recent price spikes, including energy, have ensured that inflationary pressure will remain in place for the foreseeable future. Higher prices for essential goods result in less disposable income, harming discretionary spending, which drives 70% of the U.S. economy. As the Federal Reserve has moved to raise interest rates, the highest rate hike in the past 20 plus years, we worry about slowing down the economy and stalling the equity market growth, eventually leading into a recession. Based on the latest Wall Street Journal economist survey, the probability of a recession over the next 12 months has been raised to 44%. Concerns of high inflation, and a looming slow down of economic growth, has resulted in high volatility and an uncertain economic outlook.

Natural Gas 12-month strip prices experienced a substantial increase over the last six months. Higher natural gas-fired electric generation has kept demand up. Industrial use continues to show strength. LNG exports have recently had a surprising dip due to the Freeport LNG terminal emergency. Exports to Mexico have remained elevated. Production has steadily increased since last year at a slower than forecasted rate. The market is still hoping for 100 BCF/d by year-end. Natural gas rigs have recently increased to 154 compared to the low of 68 back in July of 2020.

U.S. natural gas pricing reached an eight-week low of $6.68 per dekatherm. The recent Freeport LNG terminal accident has a lot to do with this price dip. We do not expect to see Freeport reaching full capacity until later this year. June 2022 settled at $8.908 in late May. The average price for 2020 was barely above $2.077, for 2021 we were at $3.841.

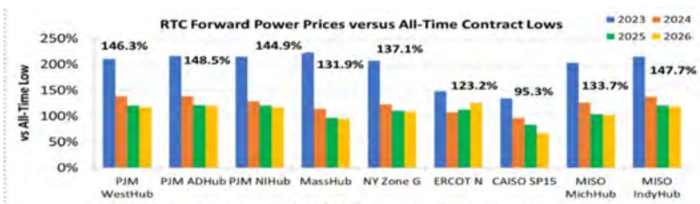


In early June OPEC+ agreed to a **crude oil** production increase of 648K bbl/day, a 50% increase from prior production but only for the months of July and August. The market took this increase in stride because U.S. gasoline demand is still high, Russian output is expected to continue its decline and Chinese demand is increasing steadily after the COVID shutdowns. Price of Crude (WTI) reached $122 per barrel on 6/8/22, the highest prices since March 2022. The price recently dropped below the $105 mark. U.S. oil rigs are currently at 584 bbl/day (6/17/22) compared to the low of 172 bbl/day back in August of 2020. 2021 capital investments in the U.S. oil production were at the lowest levels since 2004. Despite 2022's projections of 15-20% boost in capital investments, oil production and its associated natural gas production will not see significant gains due to higher drilling costs and labor shortages.

Electricity markets are complex, with many regional markets. The regional markets may differ from the overall continental energy outlook. The increase in natural gas pricing and the related pipeline constraints are major factors for the foreseeable future. Forward power prices for 2023 are mixed, regions with higher concentration of natural gas as generation fuel are experiencing a 7% drop, while areas with higher coal concentration are flat.

Weekly forward power price update is as follows:
Source: CNE

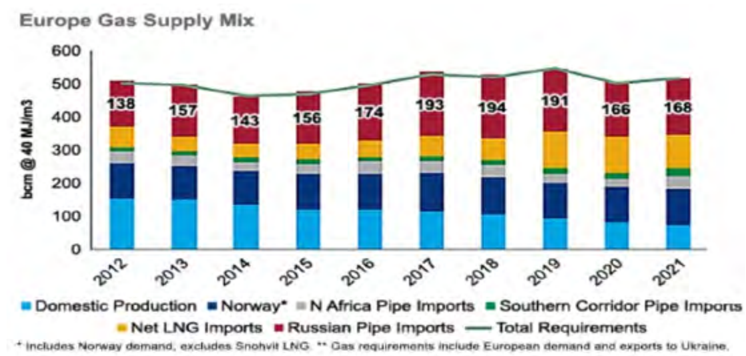
Market	Hub	Cal-23, RTC		Cal-24, RTC	
		w/w Δ	m/m Δ	w/w Δ	m/m Δ
NYISO	NY Zone G	-1.0%	11.8%	1.1%	11.8%
ISO-NE	MassHub	6.2%	19.3%	4.3%	19.3%
PJM Mid-Atlantic	West Hub	0.1%	20.2%	0.5%	20.2%
PJM Ohio	ADHub	0.1%	21.6%	0.6%	21.6%
PJM Illinois	NIHub	0.1%	26.5%	0.7%	26.5%
MISO Illinois	IndyHub	-0.1%	19.5%	0.5%	19.5%
MISO Michigan	MichHub	0.1%	20.5%	0.8%	20.5%
ERCOT	North	-12.3%	3.9%	-8.0%	3.9%
ERCOT	South	-12.6%	6.9%	-8.3%	6.9%
CAISO	SP15	-6.7%	4.0%	-2.9%	4.0%
CAISO	NP15	-6.2%	3.8%	-3.2%	3.8%



Russia/Ukraine Conflict: The Russian war in Ukraine will further impact the already turbulent energy markets. Natural gas prices in Europe spiked, Germany decided to halt certification for the Nord Stream 2 pipeline, U.S. and European sanctions could prompt Russia to decrease oil and gas exports, and Europe's dependance on Russian natural gas supply could lessen. All this activity will certainly have an impact on Energy prices with added costs to the American consumer. Alternate natural gas sources for Europe are possible but the current global production and supply restraints are also very real. The following map sourced by the European Union shows the importance of Ukraine as a pipeline hub between Russia and Europe.

Source: S&P Global Platts, Nord Stream 2, OPAL, EUGAL

The natural gas flow from Russia to Europe has increased over the last decade. While domestic production has decreased substantially. LNG is an option, but it is very expensive to produce and transport. Germany has become very dependent on Russian natural gas due to nuclear plant shutdowns, and they are now considering refiring older coal plants.



Bottom Line
Higher Energy Prices Are Here to Stay

The unfortunate events at the Texas Freeport LNG terminal have presented us with a **Buy** opportunity on the near-term market weakness. Storage levels at the end of the current injection season (October 31) will determine if price volatility remains strong. If we see the storage deficit grow and summer weather comes in as strong as forecasted, tighten your seatbelts because the bumpy ride is not over.

There are still several factors driving volatility, such as the low storage conditions, slow natural gas production expansion, summer season temperatures and how the conflict in Ukraine resolves. A hot summer will drive prices further up. LNG exports will resume by year-end and possibly continue to increase with very attractive prices to the producers. European natural gas shortages into next winter could cause havoc in the market.

The next few weeks could be our most realistic opportunity to secure favorable future pricing. Work with your trusted broker on long-term pricing strategies to avoid market volatility and ensure budget certainty.

WHAT HAPPENS TO OUR BUDGET?
What happens to our budget if natural gas prices spike this winter or electricity prices spike this summer?

WHAT IS OUR RISK MANAGEMENT?
What is our risk management policy to protect the business against energy price volatility?

WHAT IS OUR RISK TOLERANCE?
Do we want budget certainty with fixed prices,or do we want current market prices and the associated risk of cost fluctuations?

Author Dimitris Kapsis


REALPAGE
OUTPERFORM
Metro Average Benchmark
Energy and Water
Climate Region: Mixed-Humid
Area Averages 5/1/2020 - 4/30/2021 Unit Count Occupancy SqFt per Unit Energy $ / Unit Water $ / Unit
Portfolio Metro Average: Ball Partners 21 Properties in metro 275 87% 941 $9 $11
Metro Average: Raleigh-Durham-Chapel Hill NC MSA 234 91% 944 $8 $8
National Average: 183 92% 1,044 $14 $13
Energy Cost Per Unit
Portfolio Metro National
$16 $14 $12 $10 $8
May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr
12 Month Average Portfolio Metro National
Effective Rate ($/kBtu) 0.0442 0.0408 0.0104
Cost Per Unit $9 $8 $14
Consumption Per Unit (kBtu) 197 187 1,356
Water & Irrigation Cost Per Unit
Portfolio Metro National
$14 $12 $10 $8
May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr
12 Month Average Portfolio Metro National
Effective Rate ($/Gal) 0.0064 0.0009 0.0035
Cost Per Unit $11 $8 $13
Consumption Per Unit (Gal) 1,660 9,077 3,797