



ELECTRICITY & NATURAL GAS

QUARTERLY MARKET REPORT

September 2021



EXPENSE MANAGEMENT



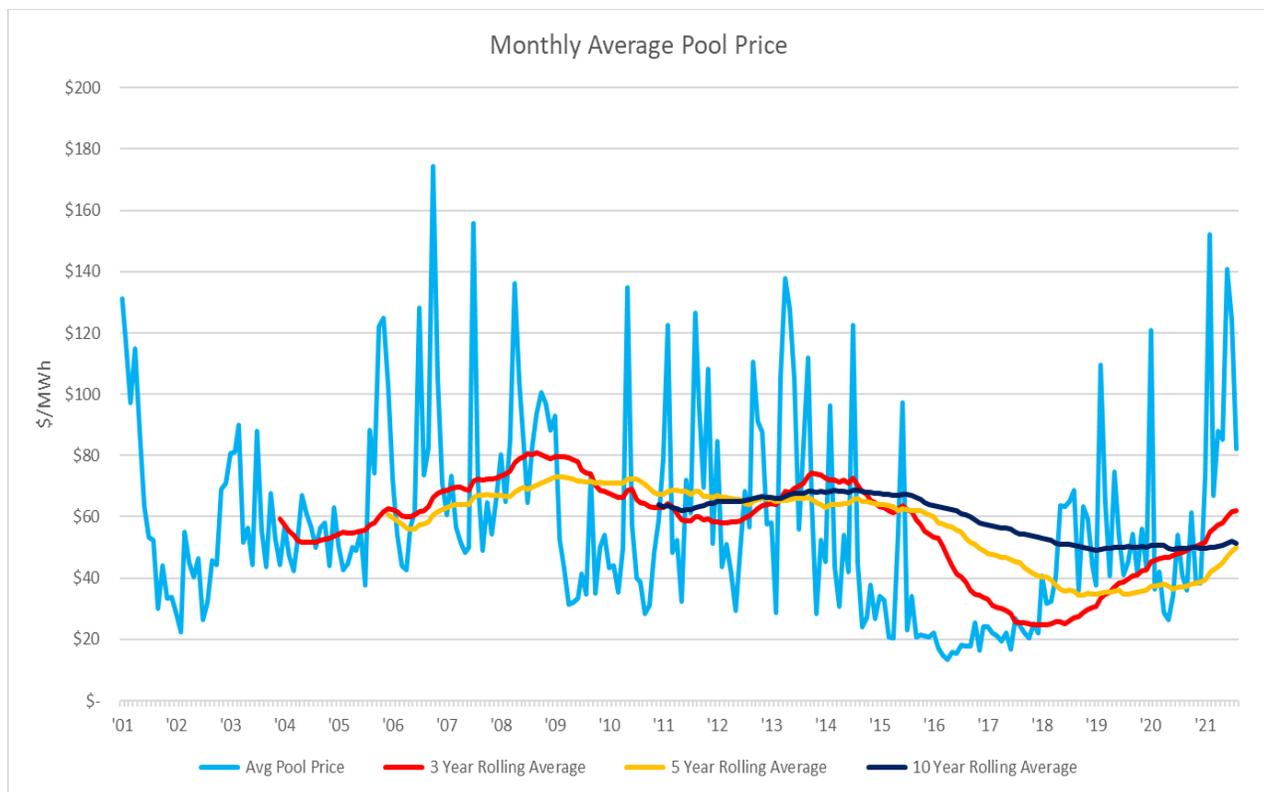
A More In-depth Quarterly Report

In this issue of 8760's Quarterly Market Update, we thought it would be prudent to take a much deeper dive into the energy markets and spend some time examining the current electricity and natural gas prices in comparison to historical levels, given the increased volatility and much higher prices that have been prevalent throughout 2021 for both commodities. The price environment is changing from what it has been the last 4 to 5 years and there are a number of important drivers at play. Our goal is to outline the specifics of these drivers, discuss the impacts to forward pricing and then conclude with some strategies to help you manage your electricity and natural gas expenses.

Why are Utility Prices Increasing?

We suspect that most of you have noticed, either on your utility bills or by following the news, that electricity and natural gas prices have been quite volatile over the last nine months and average monthly prices have seen a dramatic spike. In fact, some of the recent monthly electricity prices are close to the highest levels since the deregulated power market came to life back in 2001. Increased volatility and higher price points are likely to be the norm going forward, driven by demand and supply pressures, extreme weather conditions, economic/profit maximization activities of generators and growing economic activity.

The graph below shows electricity price points from the beginning of de-regulation on Jan.1, 2001 to date:



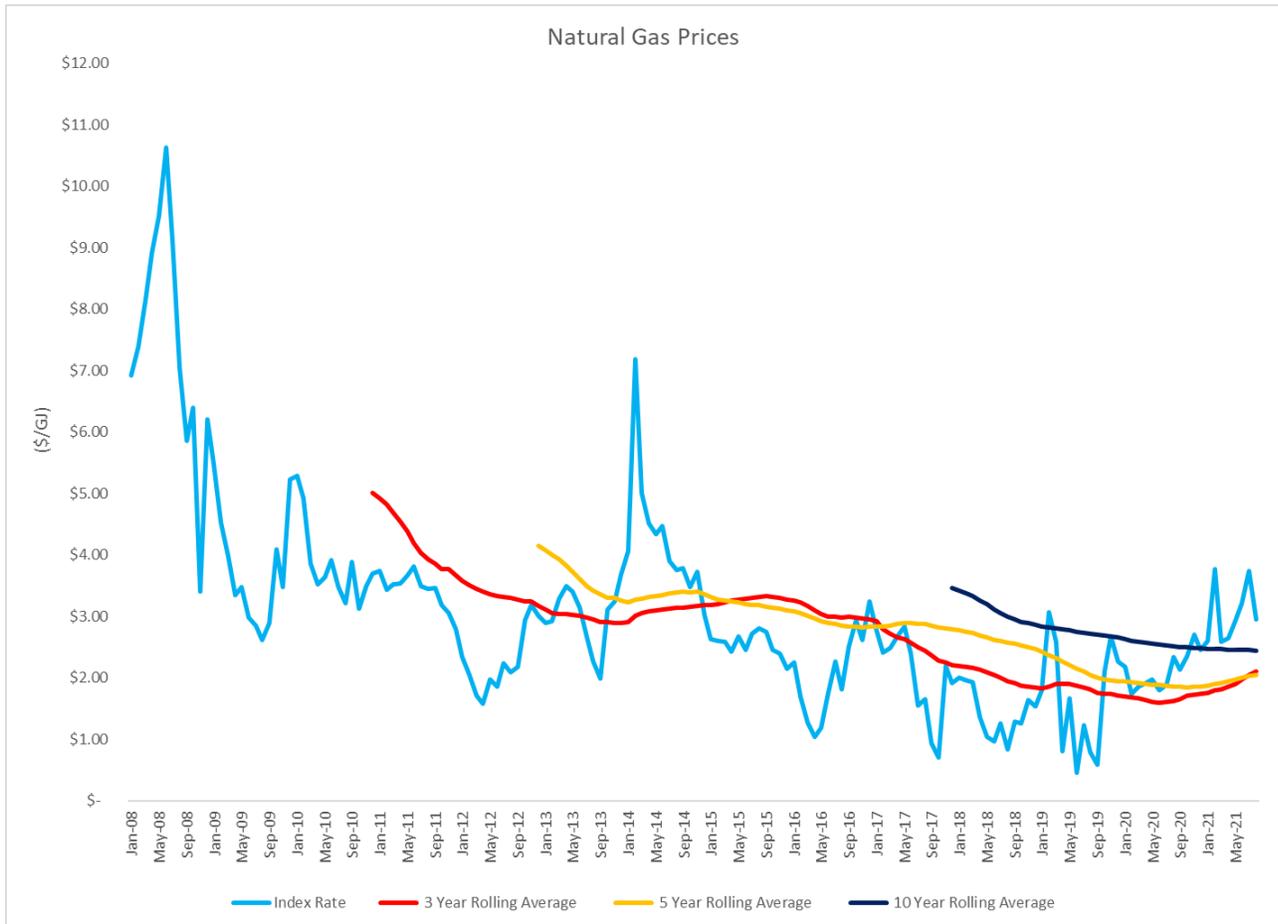
[Note: prices are in \$/MWh - \$60/MWh equals \$0.06/kWh]



Average pool prices to date in 2021 are approximately \$101/MWh (\$0.101/kWh), and an expected full year price at this point will reasonably be in the \$0.09/kWh to \$0.10/kWh range. While this is certainly higher than the last four years, it is not significantly out of range with pool price experience prior to 2014.

As evident from the rolling averages in the graph above, a long-term average pool price in the \$0.06/kWh range is not unreasonable, which generally suggests retail electricity prices in the \$0.07/kWh range. See the discussion on forward prices further below, but generally we are seeing customers able to transact at or lower than those levels for most terms going forward.

Natural gas prices have also started to significantly increase although prices remain reasonable in comparison to historical levels, as demonstrated by the following graph. This graph is over a shorter period than the electricity graph above, starting January 1, 2008.





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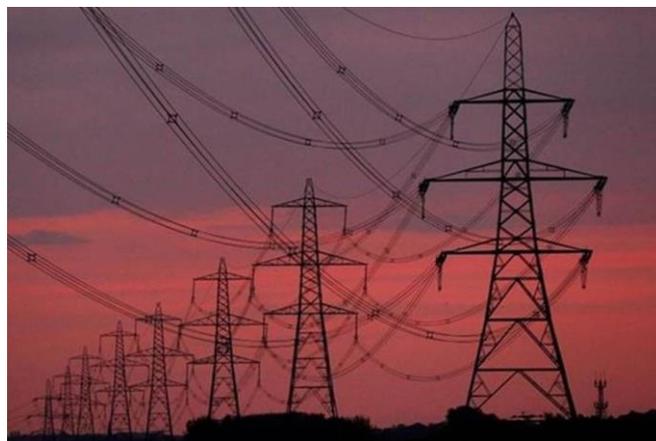
Simple average natural gas prices to date in 2021 are approximately \$3.06/GJ, and the expected full year simple average price at this point will reasonably be in the \$3.50/GJ range. Your overall effective cost will likely be higher, due to higher consumption in the higher priced winter months. While current prices are certainly higher than the last four years, it is not out of range with historical gas prices prior to 2017.

As evident from the rolling averages in the graph above, a long-term simple average natural gas price in the \$3.00/GJ to \$3.50/GJ range is not unreasonable, which generally suggests retail prices in the \$3.30/GJ to \$3.80/GJ range. See the discussion on forward prices further below, but generally we are seeing customers able to transact at or below those levels for most terms going forward.

Factors Impacting Pricing

1. Recession pricing is not normal pricing.

The fact of the matter is that Alberta was in an economic free fall from 2014 until the early part of 2018 as the price of oil plummeted which negatively impacted economic activity across the province and across multiple industries. Approximately 60% of power demand in Alberta is driven by the industrial sector so as economic activity diminished, so too did demand for power, which ultimately led to historically low power prices during this period. In fact, monthly average electricity price from 2014 to 2018 was \$0.03485/kWh and in April 2016 prices reached a historic low of \$0.0136/kWh.



Before the 2014-2018 economic downturn, there were higher price levels and increased volatility in the Alberta energy markets. The average monthly electricity price from 2001 to 2013 was \$0.066/kWh, and it was not unusual to see prices above \$0.10/kWh on occasion. In October 2006, monthly average electricity prices reached an all-time high in Alberta of \$0.1742/kWh. Some of this is a function of higher gas prices that were prevalent at the time. It is important to note we may be seeing the start of similar circumstances, as further discussed below.

More recently, we have started to see strengthening of the Alberta economy and a march towards economic recovery. However, the pace of this was severely dampened by the outbreak of COVID-19 in March 2020 as oil prices nosedived and the planet went into economic meltdown as the world essentially shuttered their doors in response to the pandemic. The economy has started to show signs of a secondary recovery in later 2020 and into 2021 as businesses and the province started to open up and as both oil and natural gas prices have strengthened. However, the economic outlook is getting increasingly clouded again with general inflationary concerns and closer to home with COVID's fourth wave hitting Alberta hard starting in August 2021. The impact on the economy of the latest restrictions imposed as of September 15 remains to be seen.



2. Dispatch of Power Purchase Arrangement (PPA) Units During 2015 to 2018 Period

In November 2015, the previous NDP government introduced a broad-based carbon tax regime, which increased the carbon tax cost to all electricity generators, particularly to the coal-fired generating units.

There were a number of these coal units, that were under dispatch/offer control of private-sector participants who held long-term contracts (known as power purchase arrangements or PPAs) for the output of those units. After the carbon tax changes were announced, the private-sector holders of these PPA contracts invoked a “Change in Law” clause, which effectively allowed them to exit the PPAs. As a result, the PPAs and the related dispatch/offer control of these units were handed over to a quasi-government agency.

While universal agreement in the electricity industry on this issue is unlikely, and we could dedicate a full report to discussing the complexities, 8760’s view is the conservative dispatch of these PPA units by that agency also contributed to lower pool prices than they might otherwise have been during the 2016 to 2018 period. Some of these PPAs were terminated, with the remaining PPAs held by the agency until they expired on December 31, 2020 as discussed below.

3. Extreme Weather Drives Demand

Another factor that ultimately has a profound impact on prices is weather. Obviously as extreme cold weather rolls through Alberta in the winter and as increasing heat waves descend on us in the summer, demand for electricity and natural gas also increases as people look to cool or heat their homes and businesses accordingly. Like any product, this increased demand plays a major role in the final price to consumers and increased demand due to weather has certainly been at play in 2021.

In February, two weeks of extremely cold weather resulted in an average pool price for the month of \$151.98/MWh (\$0.152/kWh), which itself was the third highest monthly average pool price ever, since de-regulation began, and the highest level reached since July 2007.



As we have experienced throughout the months of June and July, extreme heat also results in higher electricity prices. We have had an unprecedented number of +30 degree days in June and July and this has contributed to increased volatility and increased pool prices. In Edmonton, on July 2, a record of seven days in row being above 30 degrees was reached and the rest of the province suffered along with us as records were broken in several locations. The monthly average price for June was \$140.80/MWh (\$0.1408/kWh), the highest June price since de-regulation began by a very wide margin. The monthly average price for July was \$124.09 (\$0.1241/kWh), the third highest July price since de-regulation began.



As air conditioners and fans were likely running non-stop during this heat wave, electricity demand also skyrocketed. In fact, in June, record demand of 11,700 MW was reached. In July, the Alberta Electric System Operator (AESO) issued two Level 2 system alerts which happens (albeit rarely) when system reserves are being used to meet demand requirements needed to keep our lights on and air conditioners running.

Greater demand generally leads to higher prices. Interestingly enough, it is noted that approximately 30-40% of Alberta households have air conditioners. If extreme weather continues, more people may purchase more air conditioners thereby putting more strain/demand on the grid.

4. Renewable Generation During Extreme Weather

As we continue to move towards “greening our grid” and adding more renewable energy sources to generate electricity, it has become clear that we cannot always count on renewable generation when we need it most, in Alberta at least.

Although renewables definitely have a favorable impact on our environment and it is a cheaper source of electricity generation that can help keep prices low when they are operating, the recent experience during the extreme cold in February and the extreme heat in June and July was that renewables contributed very little generation to the grid most of those times and therefore had virtually no favorable impact to the situation in terms of helping meet demand and lowering prices. Wind generation was very low during most of those high demand periods in both winter and summer, and current levels of solar capacity in Alberta are currently not enough to make a large difference during the summer peak periods or during the shorter daylight hours in the winter peak periods.



Renewables will continue to factor into the generation mix as we move forward and will help contain costs when available, but the key to fully gleaning benefit from this technology rests with energy storage capabilities. The cost of that technology is prohibitive at this stage of the game and the availability/scalability for system/grid level usage is very suspect at best.

5. Expiration of PPAs

As we reported in our May Market Update, January 1, 2021 represented the beginning of a new era in the wholesale electricity market. Some electricity generation units (coal and hydro) that were previously being managed by a quasi-government agency under PPAs, were returned to the full offer/dispatch control of their private sector owners.

These private sector owners will undertake rational economic behavior and take actions to ensure prices are able to generate and sustain reasonable economic returns while still being mindful of all market rules and fair competition guidelines. We can be certain that this new reality has factored into the pricing levels experienced so far in 2021.



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This reality of higher demand, economic behavior of the generators, and higher prices is likely to continue until additional generation capacity comes online into later 2022 and 2023. Even with additional generation coming online, these market factors will continue to exist, but a larger generation supply cushion relative to demand will help reduce the impacts to pool prices somewhat. However, we must also face reality that electricity demand is only going to increase as greater attention is paid to reducing greenhouse gas emissions by electrifying more of our day-to-day comforts as we move away from fossil fuels – this means more electric vehicles and more electric heat/cooling apparatus as examples.

6. Natural Gas Prices Increasing

We have also seen the price of natural gas increase throughout 2021. The monthly average gas price in the extremely cold month of February 2021 was \$3.77/GJ. In the extreme hot months of June 2021 and July 2021 we saw monthly average prices of \$3.22/GJ and \$3.74/GJ respectively, which is a significant departure from typical summer prices when heating load is lowest. This increase in price has hit natural gas consumers in the pocketbook and it has also impacted the price of electricity due to the fact the cost of a key input for natural gas fired generation has increased.



As we move away from coal fired generation and opt instead on cleaner options, natural gas fired generation has certainly increased in both Alberta and across North America as assets have made the transition to help avoid carbon taxes and higher input costs. Having said that, as natural gas prices have increased, one should only expect variable costs for gas fired electricity generation plants to increase as well and that is playing a part in the recent uptick in electricity pool prices.

Factors behind the increase in gas prices include:

- continued lower levels of drilling activity for both oil and gas
- decreased levels of gas in storage, the growth of natural gas-fired generation (replacing coal and nuclear)
- severe drought in regions around the world reducing hydroelectric generation and thereby increasing demand for liquified natural gas (LNG) imports
- continued strong commercial and industrial demand for natural gas and the growth of LNG exports primarily in the U.S. (and Canada to a small degree later in the decade)
- Increased extreme weather conditions (not only does extreme weather increase demand but it can have unintended consequences as evident in Texas in February 2021 when natural gas pipes froze during an unprecedented cold snap which cut off supply and sent the market soaring)

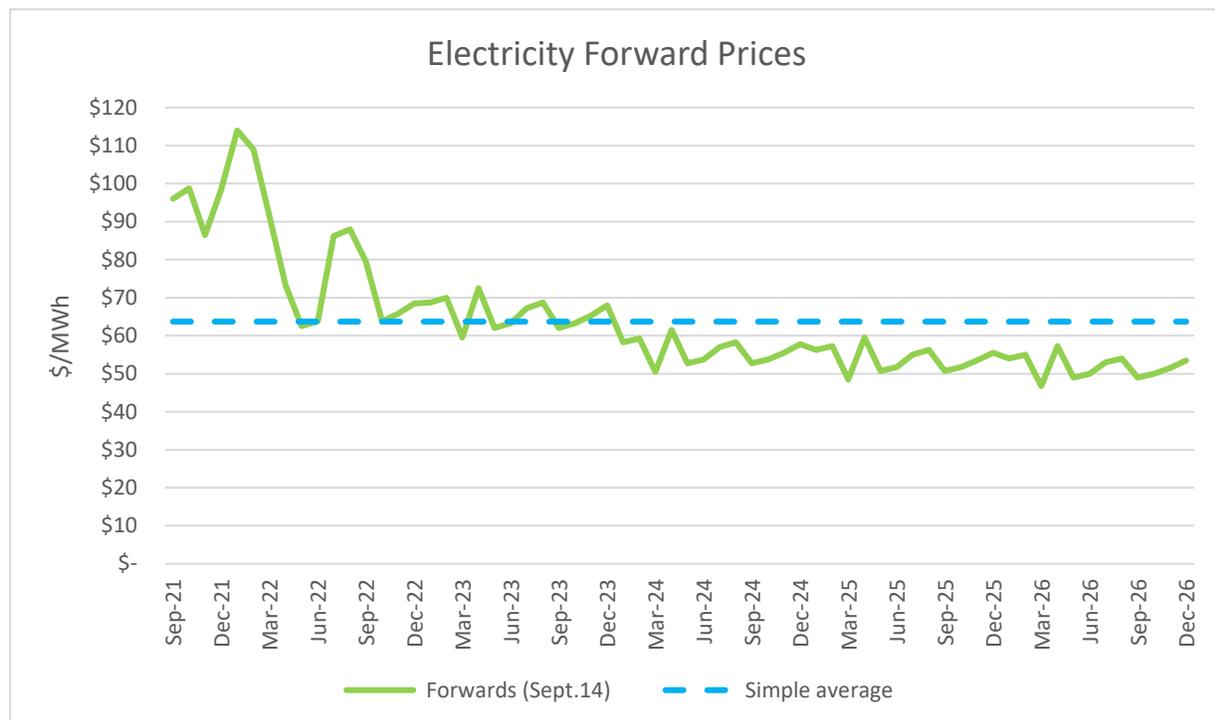


Looking Ahead (Forward Prices)

There is no crystal ball that can perfectly predict what will happen with electricity and natural gas prices in the future. Forward pricing models are simply a forecast of where prices are expected to go based on a number of assumed factors and indicate prices that parties are willing to transact at in light of those factors.

Electricity

Current forward prices are indicated in the graph below:



The high and volatile electricity prices discussed above, are also reflected in shorter-term forward prices. Forwards prices have significantly increased for this fall/winter in recent months, and higher levels are expected through 2022 and early 2023. Some large, planned additions in natural gas and renewable generation capacity in later 2022 and into 2023 provide some relief and some additional supply cushion will help mitigate electricity volatility caused by high demand, extreme weather, and aggressive offer strategies.

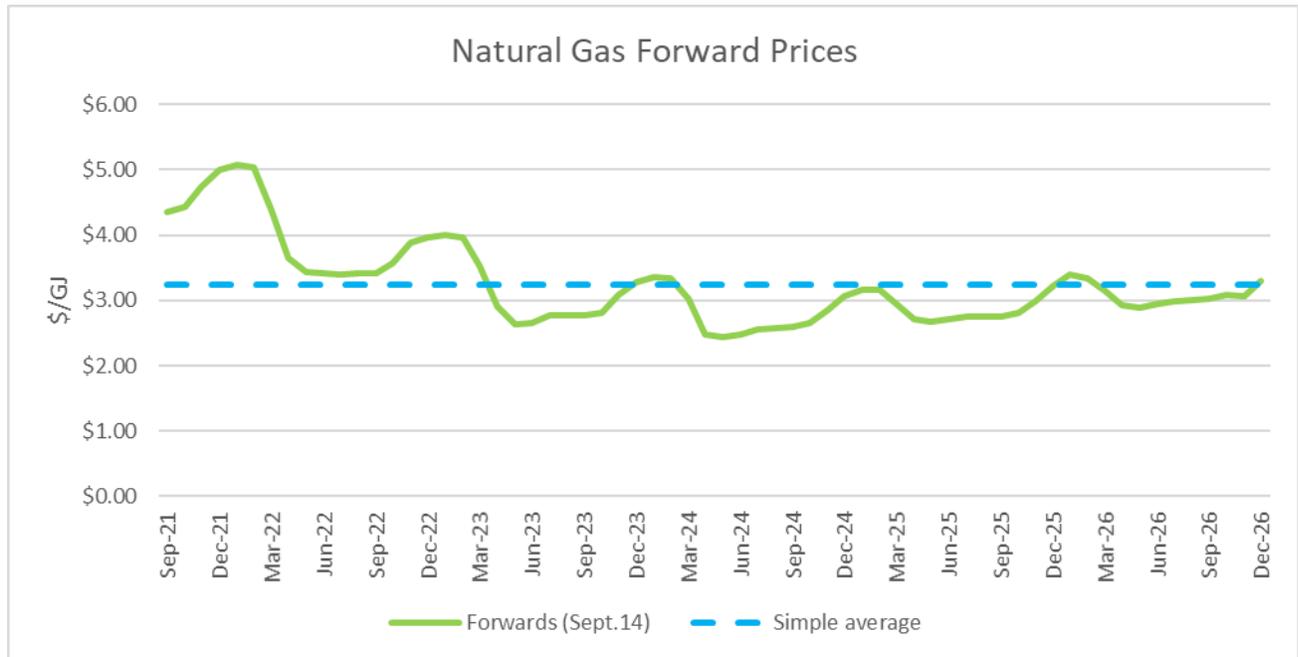
Forward prices currently offer good to excellent value, in the lower \$50/MWh range, through later 2023 to end of 2026.

The simple average for the entire term in the graph above is \$63.70/MWh (\$0.06370/kWh), which implies a fixed retail price in the \$0.07/kWh range. Fixed prices starting in 2022 are somewhat lower, due to the exclusion of the high 2021 prices, and forward prices for 2023 are lower still due to the exclusion of both the high 2021 and 2022 prices. Forward prices for 2023 to 2026 are the lowest and will result in fixed retail prices in the very high \$0.05/kWh to low \$0.06/kWh range. As highlighted above, while prices at these levels are high compared to the last few years, they are all within the range of prices experienced over a longer historical period.



Natural Gas

Current forward prices are indicated in the graph below:



There is a significant increase in forward prices for natural gas for this coming the fall and the 2021/2022 winter gas season, with forward prices in the \$4.00/GJ and even low \$5.00/GJ range, and forward prices in the \$4.00/GJ range expected for the winter 2022/2023 winter gas season. Expected cold weather, supply constraints and low storage levels are contributing to these spikes for the current winter.

Getting into later 2023 and subsequent, forward prices are more stable in the higher \$2.00/GJ to lower \$3.00/GJ range.

The simple average for the entire term in the graph above is \$3.24/GJ, which implies a fixed retail price in the \$3.50/GJ range. Prices will be slightly lower for those terms that do not include the high-priced 2021 and 2022 years.

As highlighted above, while prices at these levels are high compared to the last few years, they are within the range of prices experienced over a longer historical period.



What Can You Do To Manage Your Utility Costs?

Just as there is no perfect prediction of where prices are going, there is no perfect strategy for managing your utility costs. But there are important factors to consider:

1. Variable vs. fixed rates

Opting for a fixed price contract will provide you with cost certainty and peace of mind that your utility expenses should remain predictable. During times of volatility and increasing prices, utilizing a fixed price contract is a prudent strategy as it will protect you from wild price swings compared to a variable rate product (ie. index) and therefore avoid shocks to your expenses and bottom line.

Variable products that float with the market price can offer lower costs but these kinds of products also require a higher appetite for risk as there can be periods of extreme volatility and along with that, higher prices, particularly for electricity.

You need to consider what is most important to your business – being able to predict and manage your costs closely or trying to beat the market to potentially receive the lowest price? Your final decision will boil down to the nature of your business, your appetite for risk and your desire to control your own destiny.



2. Term length

During times of uncertainty, it is natural to focus on the short term and getting through current market pains. The challenge with any kind of commodity pricing is that it is difficult to know how long the price increases will continue. Is it a short-term spike or will prices simply continue to escalate into the future?

This is where the forward prices can give an indication of what is to come and what to do.

When looking at the forward prices for electricity, pricing 3, 4 and 5 years out looks quite reasonable. If your consumption needs are to start in the immediate term, contracting for a longer period (ie. 5 years), the lower long-term prices when blended with the higher shorter-term pricing, can lead to a reasonable blended price and lower your overall costs.

If your consumption is not required to start for a couple of years, contracting electricity today for the later terms would be a very prudent strategy as there is good value in forward prices for 2024-2026. This is particularly wise if you believe that electricity prices are quite bullish and likely to increase over time.

When looking at forward prices for natural gas, pricing is similar to electricity, and contracting for a longer-term can result in a reasonable blended price which would lower your overall cost.



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3. Block products for Natural Gas

A prudent strategy that we have been recommending for the majority of our gas customers is to employ a block product that will fix a portion of their consumption needs on a fixed price while letting the remaining volumes float at the market price. Typical hedges these days are 50% block with 50% floating, or as a more conservative option, 75% fixed with 25% floating.

This approach is effective when there is uncertainty in predicting the direction that the price of the commodity will take. This is particularly relevant at the present time where there is some uncertainty about the sustainability of shorter-term natural gas prices given the sharp run-up in forward prices the last several months. The beauty of this approach is that if the price increases, you win on the portion of your consumption that is fixed. If the price decreases, you win on the portion of your volume that is floating with the market. It is truly a win-win situation.

4. Block products for Electricity

Block products also exist for electricity and can also be used to provide a partial hedge similar to natural gas above. These generally only make sense for larger, more sophisticated commercial or industrial customers with manufacturing type operations.

8760 Is Here to Help

We understand that the electricity and natural gas markets are complex and knowing what to do is not always apparent.

We are here to help you understand what is happening in the energy markets and what will make the most sense based on your type of business, your consumption needs and your appetite for risk.



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