

EVER WONDER WHY ELECTRICITY AND GAS HAVE BECOME SO EXPENSIVE?

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IT SEEMS TO BE EVER INCREASING!

When it comes to operational costs associated with electric and gas service, regardless of whether it is for your office, production facility, store, or home... It appears that it is costing more and more to keep the lights on.... so to speak!

This leads to the existence of only two scenarios that become the 'contributors' to this ongoing battle to reduce the cost of your monthly energy bill.

- ▶ **The first scenario** - you have NOT considered taking advantage of the Energy Choice Program: meaning that you are complacent and still paying the BGS(basic generation service) offered by the local utility company serving your energy needs.
- ▶ **The second scenario** - you HAVE in fact taken advantage of the Energy Choice Program, but, have failed to realize the benefits. Perhaps you have been misinformed or were provided with a poor market strategy. Leaving you frustrated and suspicious of the program, as well as, the benefits of a third party provider.

To fully understand this, you must first come to terms... with the terms! Have you ever wondered or questioned what makes up the price you pay for your electricity? All energy bills (whether gas or electric) are composed of two sections or components:

- ▶ **Delivery Charges** - These charges are regulated by the state's Public Utility Commission, Department of Public Utilities, etc. Which are essentially the distribution charges for the service provided to your home or business. Distribution refers to the transportation of electricity and gas from the receiving station to your business via wires and pipelines. Distribution is also regulated by government agencies.

There is 'no option' to alter or change these service charges.

- ▶ **Supply Charges** - These charges are composed of many energy related components and are regulated and vary by state and utility.

Supply refers to the generation of electricity. This element of your energy service is deregulated to create competitive pricing based on the economic principle of supply and demand. Companies that generate electricity make their supply available through the competitive, wholesale market. These rates will fluctuate based on a number of factors, such as weather and market conditions for other commodities.

However, these are de-regulated... which means that approx 70% of your total energy bill can be shopped to find the best or lowest rate, term and product available to reduce your costs, provide budget certainty and energy strategy. If your business is located in a deregulated market, you have the option to choose a retail energy supplier (or provider) to secure supply from the wholesale market on your behalf at the most favorable rates available.

UNDERSTANDING ENERGY CHOICE

It used to be that you had only one choice when it came to your energy supplier. However, recent laws have introduced deregulation, which means you now have options other than the utility company when choosing your electricity and natural gas supply.

Energy choice gives you the option to compare the rates, services, and contract terms offered by retail energy suppliers so you can choose a contract that's best for your business. Your regional utility continues to service the transmission and distribution portion of your electricity and natural gas bill. Your retail energy provider will process your invoicing and payments, and your bill should clearly describe the costs associated with each component of your energy costs.

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Though the word 'deregulation' may suggest that retail energy suppliers operate without rules or standards. This is untrue. Retail energy suppliers must be licensed by a government agency to operate within each service area.

Deregulation is the process of replacing a monopoly system of electric utilities with competing sellers, allowing individual retail customers to choose their electricity supplier but to still receive delivery over the power lines of the local utility. In the case of the electric industry, this involved the unbundling of the generation portion of electricity supply from the transmission and distribution portion provided by utilities to allow suppliers to compete to provide electricity generation to consumers.

HERE IS WHY...

It begs the questions: So what is driving the costs of energy (specifically electricity) to increase? If gas is cheaper at the pump, why is it costing so much more to run my house and business?

To answer these questions one must first understand the field of play... in this case, the PJM Marketplace!

Let us assume that most of you reading this live in one of the following states... Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

This composes what is known as the PJM Interconnection, which is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity throughout the above mentioned state.

In addition, PJM is the regulatory commission that provides everything from Market Settlements to Market Implementation of various tools and resources that essentially keep the PJM (GRID) operational.

Please note that pricing is about to escalate in the PJM Interconnection, specifically in the New Jersey, Delaware and Pennsylvania marketplace.

Energy costs are currently stable and analysts predict that it will remain in good shape. However, it's the 'non energy' related components that keep going up.

Recent market movement and incremental increases are driving the price of supply for both gas and electric supply up. This is a result of many moving parts within the industry, however, recent demand increases and incremental projections scheduled to initiate in June of 2016 have markets running in a unfavorable direction.

Markets recently became increasingly volatile 'in and around' September 10th, 2015, upon which it was released that the results of the capacity performance auctions were reacting unfavorably from settlements/losses experienced during the Polar Vortex.

As you may recall, temperatures sank to colder than seasonal freezing markers towards the end of 2013 calendar year. For the first time in recorded history, the freezing temps remained there for an extended period of time. This unusual stretch of time, resulted in historical numbers relative to energy consumption. In fact, they are recorded as the largest ever to date!

BUT, THAT'S JUST SCRATCHING THE SURFACE...

This, complemented by other changes in the energy market, such as increasing reserves requirements during predicted and actual periods of grid-related stress, will lead to higher capacity and energy prices in the short term. PJM believes that by not allowing longer lead time generators to qualify for capacity performance will reduce up-lift, or costs related to out-of-merit generation that reached the hundreds of millions of energy consumers during the Polar Vortex.

Equipped with knowledge from the system performance during the Polar Vortex in January 2014, compounded by concerns regarding coal plant generation retirement in 2015-16 as a result of the EPA's Mercury & Air Toxic Standard (MATS) rules coming into play, PJM proposes to radically overhaul its existing resource adequacy construct, now the Reliability Pricing Model (RPM), and replace it with a

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“Capacity Performance” structure. The ultimate goal is to provide PJM with sufficient megawatts (MW) throughout the winter, and more “flexible” MWs that do not require long start-up notice time.

A LITTLE BACKGROUND AND ENERGY RELATED FACTS:

The electricity industry retired nearly 9,800 megawatts (MW) of conventional steam coal-fired generating capacity during the first six months of this year. These retirements represent 3.3% of the amount of operating steam coal capacity existing at the end of 2014. The states with the largest amount of retired coal capacity include Ohio (2,659 MW), Georgia (1,861 MW), and Kentucky (1,409 MW). The industry plans to retire an additional 3,133 MW of coal capacity this year and nearly 6,000 MW during 2016.

Electricity Consumption. Retail sales of electricity to the residential sector during the first six months of 2015 were 1.7% lower than residential sales during the first half of 2014, as winter and spring temperatures this year were milder than last year. EIA expects residential sales during the second half of 2015 will be 2.1% higher than the same period in 2014 because of comparatively warmer summer temperatures. Forecast residential sales of electricity decline by 0.6% in 2016. Projected retail sales of electricity to the commercial sector grow by 0.7% in 2015, while industrial sector electricity sales fall by 0.2%. EIA expects commercial and industrial sales in 2016 to grow by 1.3% and 1.2%, respectively.

Electricity Generation: While the retirement of some coal-fired capacity has contributed to the decline in coal-fired electricity generation over the past year, the relatively low cost of natural gas has been a more significant driver in coal's declining generation fuel share and the increase in the share generated by natural gas. During the first half of 2015, coal accounted for 34% of total generation compared with 40% during the same period last year, while natural gas accounted for 30%, up from 25% during the first half of 2014. For all of 2015, EIA expects the annual amount of coal generation will be 8.2% lower than in 2014, and the annual level of natural gas generation will rise by 14.5%. The forecast for coal generation increases slightly (1.4%) in 2016, and natural gas generation falls (3.0%) in response to projected higher natural gas fuel costs.

Electricity Retail Prices: The U.S. retail price of electricity to the (ie) residential sector is projected to average 12.7 cents per kilowatthour in 2015, which is 1.3% higher than the average price last year. The largest price increases are projected to be in New England, where residential electricity prices are forecast to increase by 10.8% in 2015, as electricity distribution companies recover higher generation and power purchase costs incurred during 2014. Wholesale power prices in New England have been relatively low this year, and EIA expects retail New England prices during the second half of 2015 will be lower than during the first half.

WITH THIS IN MIND...

Recently, it has been noted that PJM's transmission costs have gone up exponentially. Some resources have implied this is due to generation retirements, such as coal plant retirement, when actually, there are a number of causes of increased transmission costs, particularly over the last few years due to the need to upgrade aging infrastructure.

A major component of these transmission costs are known as Network Integration Transmission Service rates or NITs. The charges under NITs may be offset in the transmission owner's tariff rates by “Transmission Enhancement Credits”, or transmission upgrades charged to neighboring zones. The customer only sees the netting of the charges and credits. How do these charges increase, you ask? Keep reading!

As an energy consumer, you pay both distribution (local wires) and transmission (higher voltage wires that support long transport from generation to load areas) rates. Transmission rates are filed by each individual transmission owner to reflect its investment (past, present, and potentially future to reliably transport electricity), and permit a return.

Focusing on and understanding how this is going to affect New Jersey residents and businesses is more complex. Structural changes, enhancements, and upgrades to this system have become a necessity and were considered to be eminent when first addressed several

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years back.

For example, PSEG is currently undergoing an massive investment into building new towers for transmission system upgrade to enhance capacity and service in the northern part of New Jersey, to comply with requirements of operator of that regional grid.

This \$975 million Northeast Grid Reliability project is designed to upgrade power service in the northern part of the state, mostly on existing overhead transmission lines, in order to comply with PJM Interconnection's requirements. This is just one phase of the estimated 3 billion dollar upgrade, multi-year project that is directly responsible for the boost in cost of electricity.

Utility officials believe the project will ensure reliable electric power for nearly 1 million residents and business that require increased electric capacity, provide better quality of service, and reduce congestion on the transmission system.

HOWEVER, THIS IS JUST ONE PAGE OUT OF THIS BOOK OF INCREASED COSTS...

In July, natural gas-fired plants supplied 35 percent of the country's electricity, just above coal's 34.88 percent share, the Energy Information Administration said in its Electric Power Monthly report on Thursday. Gas surpassed coal for the first time in April, when it made up 31.5 percent of U.S. generation.

The market battle between gas and coal is escalating as environmental regulations force coal-fired plants into retirement and cheap gas supplies flow out of U.S. shale formations. Gas prices have fallen 10 percent this year to the lowest levels seasonally in at least a decade.

U.S. coal-fired power generation is down 13 percent so far this year, while gas consumption is up 20 percent. A decade ago coal was used to generate half of all U.S. power supplies. The government estimates that the fuel's share of electricity consumption will be 35 percent this year, while gas will supply 31 percent.

It is worth noting that for the second time in U.S. records, natural gas has eclipsed coal as the primary fuel for U.S.

CREATING A MIXED MESSAGE

PJM suggests that the higher energy costs will reduce capacity costs long-term, as a component of the capacity payment nets out energy revenues. They also claim that their Capacity Performance program will attract more efficient generation, with more MWs available, ultimately reducing energy costs.

The jury is out as to actual net cost benefits (there are likely to be reliability benefits), but it's clear that over the next few years, customers will see significantly higher capacity costs.

IN A NUTSHELL

PJM is trying to force out of the capacity market non-base load generation unless it has firm fuel supply. In other words, it wants nuclear generation in and long lead-time generation out. It wants its gas generators to have access to firm gas supply regardless of weather conditions. It wants its generation to perform as well in winter as in summer, as some generators claimed they weren't able to run in cold weather.

PJM plans to accomplish this force out of the capacity market eliminating any excuse for failure to perform, unless due to transmission or distribution outages, and imposing a fairly harsh penalty for failure to perform during critical peak days. In return, generators will be allowed to bid up to the Net CONE amount, or the cost of new entry less revenues received over the past three years based on a hypothetical gas peaking unit, and may even bid above it if they can demonstrate that their costs, including performance risks, exceed Net CONE. PJM also plans to eliminate the use of renewable resources, unless coupled with firmer supply such as storage, and demand response in the capacity market and instead allow customers to net their peak obligations against the amount of MWs they would be willing to curtail on any day of the year.

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With the exception of nuclear plant owners and some gas generators, PJM stakeholders have voiced considerable concerns about the plan for three reasons:

1. PJM plans to transition to its new Capacity Performance structure by introducing an additional procurement of up to 10,000 MWs in 2015-16 and then continue to procure a percentage of additional MWs that would meet the "Capacity Performance" MWs for 2016-17 and 2017-18 for incremental auctions for those delivery years. Yet customers have already paid for capacity during these delivery years because the base residual auction has already cleared. In essence, a nuclear plant owner that cleared the 2016-17 auction will be able to re-offer in the same exact MWs, but at the higher Net CONE cost. Additionally, as part of the transition, PJM would eliminate capacity provided by demand response providers relieving them of their obligations, unless specific obligations can be matched directly to a load eliminating the aggregation benefit many demand response providers rely on, and procure the "vanished" demand response MWs. Many stakeholders question the need to transition to the new structure, particularly because the transition is likely to impose costs of up to \$4B.
2. Stakeholders are concerned that the new construct throws too much money at generators that won't have to make any additional investment to receive that money (nuclear plants), or to generators that may or may not firm up their fuel supplies. The problem PJM appears not to appreciate is that a gas generator may have a firm fuel contract, but if it doesn't nominate in a timely manner, it may not be able to access the fuel anyway.
3. Furthermore, stakeholders are concerned that the penalties are so high that justifiable risk premiums will increase costs exponentially. The end state of Capacity Performance may increase costs to consumers up to \$14B over what they paid in 2014-15.

WILL PJM'S PROPOSAL FIX THESE PROBLEMS AT AN EFFICIENT COST TO CONSUMERS?

Fundamental changes need to be made to PJM's capacity market. It was structured on the assumption that peak generation was only needed in the summer, not the winter. PJM needs to incent newer, more flexible MWs.

Unfortunately, it's extremely difficult to predict what PJM will do. Stakeholders met with the PJM Board on November 4, 2014 to plead for more time to discuss the new structure and implore them not to run the incremental auctions under the new construct but to continue to use the existing RPM model. Demand response providers noted that there's significant legal uncertainty around the role of demand response and PJM shouldn't take actions prematurely until the courts provide more clarity on jurisdictional issues.

Terry Boston, CEO of PJM, announced that the Board has listened to stakeholder input and will be directing staff on what to file with FERC. Stakeholders will not have input on the filing. Additionally, Boston stated that for now, PJM will leave demand response rules in place until receipt of further direction from the courts or FERC.

THE FUTURE OF ENERGY: COULD IT BE GREEN?

RENEWABLES AND CARBON DIOXIDE EMISSIONS

Electricity and Heat Generation from Renewables. EIA expects total renewables used in the electric power sector will decrease by 3.5% in 2015. Conventional hydropower generation is U.S. Energy Information Administration | Short-Term Energy Outlook September 2015 Forecast to decrease by 10.4%, and non hydropower renewable power generation is forecast to increase by 3.2%. The 2015 decrease in hydropower generation reflects the effects of the California drought. Forecast generation from hydropower in the electric power sector increases by 9.2% in 2016.

EIA expects continued growth in utility-scale solar power generation, which is projected to average 89 giga watt hours per day (GWh/d) in 2016. Because the growth is from a small base, utility-scale solar power averages 0.8% of total U.S. electricity generation in 2016. Although solar growth has historically been concentrated in customer-sited distributed generation installations (rooftop panels), EIA

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expects utility-scale solar capacity will increase by more than 100% (11 GW) between the end of 2014 and the end of 2016, with 4.1 GW of new capacity being built in California. Other leading states in utility-scale solar capacity include North Carolina and Nevada, which, combined with California, account for almost 70% of the projected utility-scale capacity additions for 2015 and 2016.

Power plant developers have notified EIA of plans to construct 13 solar projects in Georgia (totaling 607 MW) with expected 2015 or 2016 in-service dates. Five of these new projects (166 MW) will be built on U.S. military bases. Georgia currently has 66 MW of utility-scale solar capacity. According to current law, projects coming online after the end of 2016 will see a federal investment tax credit of 10%, lower than the 30% investment tax credit available for projects that come online before the end of 2016. This impending decline in the tax credit provides a strong incentive for projects to enter service before the end of 2016.

Wind capacity, which grew by 8% in 2014, is forecast to increase by 12% in 2015 and by 13% in 2016. Because wind is starting from a much larger base than solar, even though the growth rate is lower, the absolute increase in wind capacity is twice that of solar: 18 GW of wind compared with 11 GW of utility-scale solar between 2014 and 2016.

REGIONAL RESOURCES CAN ELIMINATE THE POTENTIAL FOR FAILURE

At [Regional Resources Energy Group](#), we offer our clients a strategic approach that will simplify the route to navigate and understand the complexities of energy markets. RREG will identify and provide multiple applications to reduce and capture savings with regard to energy related expenses.

As 'energy procurement specialists', we embrace the opportunity to provide a consultative directive relative to the current and future consumption needs and usage for both gas and electric supply at NO COST to you. We work with each client/group to identify and explore their individual energy needs, usage, and current market position relative to third party supply.

Our expertise in advocating for our clients, coupled with our in-depth experience in energy procurement, cost reduction strategies, cost recovery, and energy solutions, are all utilized to benefit each client as we approach the market on their behalf.

RREG provides our clients with efficiency in billing and invoicing, budget savings and budget certainty... all while simultaneously reducing the expenses and costs associated with energy. Not to mention, providing 'fixed' forecast monthly related expenses... regardless of weather anomalies or changing market conditions.

Essentially, we perform the task of creating an RFP, soliciting for said RFP, and define the best values and procurement routes relative to gas and electric. With NO cost or obligation to the you.

Contact a Regional Resources representative or me directly to discuss how we may assist you with reducing your energy costs today... and in the future!

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