



Energy in New Hampshire

A blog about New Hampshire energy matters by Mike Mooiman, an engineer and business program professor at Franklin Pierce University.

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SUNDAY, APRIL 26, 2015

Last Fair Deal Gone Down* – The PSNH Divestiture Settlement Deal

It has been some time since my last blog but I have been out and about, immersing myself in the solar energy field and working on combined heat and power consulting projects. There is an awful lot happening in the NH energy field – there are natural gas pipeline routing issues, there are grabs for renewable energy fund money to balance budgets, and there is the recently announced PSNH divestiture deal. In this blog, I am going to focus on the PSNH deal as I have written quite a bit about this topic in the past. (I know that PSNH and its parent company have been rebranded under the new name “Eversource” but I will continue to use the “PSNH” terminology as it is still useful.)

Overall, this is a big deal—and in more ways than one. The three big outstanding PSNH matters – the scrubber costs and recovery investigation, the sell-off of PSNH generating assets, and the investigation of PSNH ownership of generating assets on its default service customers are lumped together in a single settlement. It involves a lot of money, is complicated, and is likely to have an impact on all PSNH customers for a long, long time. A big deal indeed!

I have been trying to understand this settlement and learn more. For a deal of this complexity, I will remark that there is surprisingly little documentation: there is only the [term sheet posted on the PUC website](#) and a single [press release](#). I have chatted to several people trying to understand more. For a deal so important to NH, PSNH electricity rate payers, and the New England electricity market, it certainly—at the moment—lacks transparency. I hope that this will improve over time.

So this is what I know:

The deal bundles the scrubber settlement, divestiture of generating assets, stranded cost recovery, and a bunch of other odds and ends into one agreement. In so doing, it completes the deregulation process that started in 1996.

PSNH will take a \$25 million haircut on the [cost of the scrubber](#). To recap: the original deal was supposed to cost \$250 million but, by the time it was done, it cost \$422 million and PSNH was looking to electricity ratepayers to pick up the entire tab and to pay their ~10% return on the investment. PSNH had been partially successful in this regard and had negotiated to get ratepayers to start paying two-thirds of the costs. The \$25 million in this deal is a discount of 15% on the cost overrun.

From Jan 2016, PSNH's default electricity customers will be paying the full amount of the scrubber (minus that \$25 million) over 7 years, while allowing PSNH to earn their 9.67% regulated rate of return. This will continue until the generating assets are sold.

However, since PSNH ratepayers have only been paying for 2/3 of the scrubber costs so far, the obligations and returns on the remaining one-third have been accumulating. The total in this account is now of the order of \$105 million. Someone is

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LABELS

25 x '25 25 x 25 air conditioning Amoskeag aviation fuel biomass building energy use C-PACE capacity factor capacity markets city gate coal coal fired electricity

going to have to pay for this in one way or another.

The deal requires PSNH to sell their generating assets but the new owners will be obligated to keep the plants in service for at least 18 months. PSNH has several generating assets (shown in the table below) and some of the new owners will want to keep them running. Some of the hydro-generating plants have been running for close to 100 years and probably could do so for another 100. The coal-fired power plants are, however, another issue. In a low-priced natural gas market, their value is marginal: requiring the new owners to keep them running for 18 months after purchase when they may have only salvage value could further depress the price. Consider the table below, which presents data on the utilization of the PSNH plants. One has to question who would buy those plants and keep them running until they can be scrapped, redeveloped, or re-engineered to burn natural gas. They might have some value on the electrical-capacity market, but only time will tell. I don't believe these old plants will be sold very easily or quickly – PSNH may even have to pay someone to take on those assets.

PSNH Generating Operations	Fuel	Generating Capacity, MW	2014 Generation, MWh	2014 Utilization
Merrimack	Coal	440	1,152,850	30%
Newington	Nat Gas or Oil	406	128,728	4%
Schiller	Coal or Oil	100	166,147	19%
Schiller	Biomass	150	334,147	25%
Peaking Plants	Jet Fuel	100		0%
Hydro Plants	Hydro	65	244,984	43%

Source: EIA 923 Power Plant Operations Reports

According to a consultant report commissioned by the PUC, the differences in book value and the estimated market value for the various generating assets are as follows.

PSNH Generating Operations	Fuel	Book Value, \$ millions, 12/31/13	Estimated Value, \$ millions
Merrimack	Coal	\$ 500*	\$ 10.0
Newington	Nat Gas or Oil	\$ 36.0	\$ 90.0
Schiller	Coal, Oil, Biomass	\$ 78.0	\$ 5.0
Peaking Plants	Jet Fuel	\$ 0.6	\$ 0.0
Hydro Plants	Hydro	\$ 46.8	\$ 120.0
All PSNH Generating Assets		\$ 660.0	\$ 225.0

*incl. \$422 million for scrubber

The difference between the book value and actual market value is termed “stranded costs”, because this is the amount that PSNH invested in generating assets that they are now obligated, due to deregulation, to sell at loss. PSNH will also not earn a return on the stranded costs. By law, PSNH is eligible to recover these stranded costs from its ratepayers. In other words, PSNH is entitled to get a check for this amount that they can invest elsewhere to earn a return.

We have the book value, \$660 million, of PSNH assets. From this, we subtract the value that PSNH may realize from the sale of the assets, ~\$225 million, as well as the \$25 discount on the scrubber. This leaves us with approximately \$410 million

Commercial commercial building energy use Commercial Property Assessed Clean Energy commercial competitive electricity supply conversion efficiency Cooling degree days cost use intensity costs of electricity costs per BTU default rates deregulation diesel difference between energy and power electrical utilities electricity electricity deregulation Electricity Generation electricity prices electricity rates electricity rates Energy Energy Audit energy consumption energy conversion efficiency energy efficiency energy efficiency investments energy generation energy intensity energy per capita energy use intensity energy waste ethanol fracking fuel oils gasoline GDP Geoexchange Geothermal Energy Heat Pumps Heating degree days heating oil dealers henry hub home heating fuels home heating oil hydro hydroelectric Industrial industrial energy usage Isles of Shoals ISO New England jet fuel kerosene LCOE Liberty local distribution companies low sulfur home heating oil LPG Merrimack River natural gas natural gas pipelines natural gas pipelines. New England energy consumption New England home heating fuels. New Hampshire New Hampshire building energy consumption New Hampshire Electric Coop New Hampshire Electricity Generation New Hampshire Energy New Hampshire energy consumption New Hampshire energy supply New Hampshire energy usage New Hampshire Forests New Hampshire renewable energy NH biomass NH forests NH power plants NHEC NHPUC nuclear OEP oil oil heat PACE prices propane propane retail prices PSNH Public Service of New Hampshire Public Services of New Hampshire Public Utilities Commission public utility PUC RECS

of stranded costs.

The check for \$410 million in stranded costs that must be paid to PSNH will be funded through a 15-year stranded costs securitization deal at a lower interest rate, which hopefully will be of the order of 3 to 4%. This is exactly like refinancing a mortgage on a home – instead of continuing to pay PSNH their 9.67% on the depreciating book value of their generating assets, PSNH ratepayers are going to pay someone else 4%. My post [Walking on the Wild Side](#) discusses securitization of stranded costs in more detail.

My stranded costs calculations do not take into account the fact that PSNH had entered into some pretty sweet long-term deals with the Lempster wind-power plant and with the wood-burning operation at the converted Burgess paper mill in Berlin. According to a [consultant report](#) commissioned by the PUC, the market value of these deals is a negative \$120 million (!). These costs could be bundled into the stranded costs calculation and increase the amount that will need to be funded.

The odds and ends in this deal involve the setup of a \$5 million renewable energy fund, another fund that will be used to compensate municipalities for the decline in property taxes that are sure to result from the decreased property valuations that will occur after the sale of the generating assets and some as-yet unquantified protections for union workers at the affected properties.

As I noted earlier, this is a complicated, messy, and expensive deal, with long-term obligations for PSNH ratepayers—but here is the rub. Ratepayers could get angry and annoyed and royally ticked off. NH legislators could fight it and try to renegotiate it and drag it out for the next few years, and then it will be taken through the courts which will take a few more years. In the meantime, PSNH, as a regulated utility responsible for supplying default electricity to their customers, will charge their customers for the scrubber and those aging assets and coal plants. PSNH will be making money all the time while legislators try to renegotiate the deal.

In meantime, it is highly likely that interest rates will rise and the very low interest rates that are currently available for refinancing will increase. Ratepayers will then have to pay more for the deal and—even though it might be viewed as unfair—the very pragmatic approach is to pay PSNH a big chunk of change as soon as possible so that NH can move along with deregulation. Some might view it as being in the utility's best interest to drag along this process as long as possible but this is what happens when a process is not completed –someone ends up paying.

There is another concern to consider if this deal drags out. PSNH's default electric service rates this summer will most likely be above market rates, which could promote migration to competitive suppliers. Such a process has the potential to accelerate rapidly, leaving fewer and fewer PSNH customers on the hook for all of PSNH's costs associated with those generation plants. This will increase prices for the remaining customers, which will promote more migration and eventually the one remaining PSNH customer is going to be responsible for all the PSNH costs. This so-called “death spiral” would create a crisis both for PSNH and for NH because someone is going to have to pick up the tab. I am not clear as to what the end game would be in this situation, but I do know that some nasty legal battles will ensue and a lot of money would be wasted in the process. There is clearly a price to be paid for dragging out this deal.

So what do PSNH default electricity rate payers get out of the deal if it closes soon? Well, they will have to pay PSNH for the stranded costs and enable PSNH to get their full return on the scrubber until the Merrimack plant is sold. Over time, this deal should result in savings for PSNH default electricity ratepayers because they will benefit from the lower mortgage on those assets. They should also benefit from lower default service rates going forward because all of PSNH electricity supply will be sourced from the New England wholesale market. Various amounts have been touted for these savings. The PSNH press release indicated savings of \$300 million over the first five years of the deal. I plan to dig deeper into these savings figures in a future blog.

However—and this is a big **However**—this refinancing deal will only work *if all PSNH customers pick up the tab*, i.e., all residential, commercial, and industrial customers in the PSNH service areas, even if they buy their electricity from a competitor. The deal will not work if just default electrical service customers have to pay, because they can leave. Every time a default customer leaves, the remaining customers must carry a larger piece of the remaining costs. It is important that these charges cannot be bypassed. This means all PSNH customers, and especially the industrial and commercial customers who buy their electricity from other competitive

regulatory compact [renewable energy](#)
 Residential residential natural gas use
 scrubber scrubber costs securitization
 solar Star Island NH stranded costs
 Transmission Transportation ULSD
 Unutil utility waste Waste Heat
 wholesale electricity markets [wind wind](#)
[energy wind farms](#) wind power [wind](#)
 power New Hampshire wood
 wood fired electricity wood fired
 power plants wood pellets

suppliers, will be caught up in the payment net and will see their rates increase. The essence of the settlement is that to complete deregulation and to get the remaining PSNH default electricity service customers off the hook, all customers in the PSNH service areas are going to have to pay for the stranded cost recovery charges.

Here are some of the questions I have been asked about the deal.

Is this a good deal or a bad deal? – It all depends on your perspective and your level of pragmatism. Some may say “Hey, it's a deal”—which is better than no deal. Customers who migrated to competitive suppliers on the understanding that they would not be held responsible for the scrubber costs will now be gathered up in the net of payers. For large industrial and commercial customers, who feel the sting of high electricity prices acutely, this is going to be particularly painful. Their costs will rise and it will put them at a competitive disadvantage: some may even consider relocating to states with lower energy costs.

What is the alternative? – We take the deal off the table and continue with the scrubber cost prudency review. If the outcome is that PSNH overspent on the scrubber and are entitled to a smaller recovery, you can be assured that a long-winded legal battle will ensue. Perhaps in this process, PSNH will take a larger haircut on the scrubber than the \$25 million that they have presently agreed to. In the meantime, default service rate payers will continue to pick up the tab, their rates will rise, and more will leave PSNH for competitive suppliers, pushing PSNH closer to that death spiral. Some larger users of electricity might see some benefits from this, because it pushes the obligations and costs of having to contribute to stranded cost recovery out into the future but it could end up being a lot messier and expensive in the process.

Does PSNH make out? – To a degree, but less than they were entitled to, as per the regulatory compact that we have with utilities and that they are entitled to by law. Monopolistic and regulated utilities are a necessary part of our energy infrastructure: this is the price we have to pay if we want the lights to turn on at a flick of a switch.

Do PSNH default customers save money? – Yeah. They will be paying a lower interest rate on the assets and there will now be a larger group of PSNH customers helping to pick up the tab. Default electricity customers, mainly residential customers, should eventually see some rate relief.

Will all PSNH customers and distribution and electricity supply customers pick up the tab? – Most probably.

Is there a better deal out there? – I'm not sure, but I do know that it will take years to negotiate and that, in the meantime, PSNH will continue to earn a return on the book value of their generating assets. Default electricity service customers pay above market rates and increasing migration could cause a crisis. Bear in mind that there are some looming environmental mandates out there, such as the EPA requirement for [cooling towers at the Merrimack plant](#), which will further burden rate payers.

Some have characterized this deal as “suck it up, pay up and move on”. This might be a harsh characterization and, even though I do not have horse in this race, it might well be time for some well-considered pragmatism. This situation is a mess due to the stop/start approach to deregulation, poorly crafted legislation, lack of oversight and transparency on the scrubber costs, and some bruising utility related legal battles in the past in which the State of NH has not come out well. Indeed, there is plenty of blame to go around but, at this stage, I am not sure what is gained from digging up old graves and beating on the remains. Perhaps it is time to buy the expensive headstone, agree to pay for fresh flowers every month for the next 15 years, and put this matter to rest.

When thinking about this deal, the words of the late great Robert Johnson, the blues guitarist, in his song “Last Fair Deal Gone Down”*, come to mind:


*Ida Belle, don't cry this time
Ida Belle, don't cry this time
If you cry about a nickel, you'll die about a dime
She wouldn't cry, but your money won't mine*

Until next time, remember to turn off the lights when you leave the room.

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 4/26/2015

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(*[Last Fair Deal Gone Down](#): A tune by the great blues guitarist Robert Johnson covered here by Eric Clapton on his 2004 *Me and Mr. Johnson* album.)

Posted by [Mike Mooiman - Franklin Pierce University](#) at 6:42 AM  Recommend this on Google

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Labels: [deregulation](#), [PSNH](#), [scrubber costs](#), [securitization](#), [stranded costs](#)

FRIDAY, JANUARY 2, 2015

It's Time to Move On* - Competitive Electricity Supply in New Hampshire

In my last few posts, I have been writing about the electrical utilities and their winter rates. In this post, I take a look at the competitive energy suppliers in New Hampshire.

Electricity consumers in NH have a choice. They can go out and pick their electricity supplier or they can simply leave it to their utility to source and supply their electricity under the so-called default electrical service rate (see [Gonna Take You Higher](#) post). The move to competitive electricity supply has gone through two waves. In 2006, five years after the onset of electricity deregulation in NH, there was a massive migration of commercial and industrial customers to competitive suppliers. In 2011, there was a second wave of migration, this time by retail customers. Right now, about 50% of the electricity supply in NH is from competitive suppliers. The table below shows data for overall competitive supply for the NH electrical utilities and some information for large commercial and residential customers. It is clear that competitive suppliers provide most of the electricity for large commercial customers. In the case of PSNH, this is a stunning 96%, which, as I have noted [before](#), leaves the residential customers responsible for picking up most of the costs for PSNH's generating assets.

Competitive Supply Percentage by kWh

Sept 2014 Data from Utility Migration Reports

Utility	Large		Overall
	Commercial	Residential	
PSNH	96%	24%	55%
Liberty/GSEC	75%	7%	43%
Unitil	78%	11%	40%

There are three types of electricity providers in NH. There is the utility itself which the default supplier, and then there are competitive suppliers and aggregators. At last count, there were 25 competitive suppliers and 90(!) aggregators.

The competitive suppliers approved to offer electricity supply are [listed on the NH Public Utilities Commission \(PUC\) website](#). Not all of these companies supply to residential customers: some specialize just in the larger commercial and industrial customers. Of the 25 competitive suppliers, 16 supply to the residential market but not all suppliers are active in all utility service areas.

Suppliers actually have to source the electricity and work with the utility to get it delivered to your home. Aggregators adopt a different approach. They will do the shopping for you and will go out to competitive suppliers and find a good rate for you. Once they do this, and you agree to the terms, they will then switch you to the competitive supplier. Aggregators tend to specialize in specific markets, e.g. small commercial customers or geographic areas.

The table below shows which suppliers are active in which electrical utility service areas.

Competitive Electricity Suppliers in NH

Supplier	PSNH	Unitil	Liberty	NHEC
Ambit Energy	X	X	X	
ENH Power	X	X	X	X
Ethical Electrical				X
Fairpoint Energy	X			
First Point Power	X	X	X	
Glacial Energy of New England	X	X	X	X
Gulf Electricity	X			
Integrus Energy Services	X	X	X	
Mega Energy of New Hampshire				
NextEra Energy Service NH	X	X	X	X
North American Power and Gas	X	X	X	
Power New England	X	X	X	
REP Energy	X	X	X	X
Town Square Energy	X	X		
Union Atlantic Energy Corp	X	X	X	
XOOM Energy NH	X			
# Competitive Suppliers	14	11	10	5

Some of you may [recall the drama](#) caused last year by one of the competitive suppliers, Power New England (PNE) and its aggregator, Resident Power, when PNE was suspended by ISO-NE for cash-flow problems created by high electricity rates in the winter of 2013. With the suspension of PNE, about 7000 customers had to be transferred back to the default service of PSNH over a weekend.

There are some key points that everyone should know about competitive suppliers:

Competitive suppliers are not regulated. Their prices and terms are not subjected to the same scrutiny as those provided by the utilities through their default service rates.

Do your homework. Look at the rates and request the terms and conditions.

Competitive suppliers offer fixed and variable prices.

There can be costs for switching.

Competitive suppliers can shunt you back to the service utility at their discretion.

The utility is always there as a backstop, in case your competitive supplier cannot supply electricity or goes under.

The NH PUC provides helpful information on competitive suppliers, including a [useful list of FAQs](#) and, particularly, a [valuable list of questions to ask suppliers](#).

One of the challenges we face as consumers is that sometimes there is simply too much choice. It is well known that, in the face of too much choice, we often pick the easiest option – which is usually the default option. How many of us really have the time to call those 16

competitive suppliers and the compare their rates and terms?

This is where information-aggregation tools, such as *Kayak* for airline prices, are so useful. In one simple search, you can look at most airline rates on one page. One would hope that a similar tool would be available for competitive electrical supply, but, unfortunately, similar tools for NH electricity shoppers are not as helpful.

ShopEnergyPlans.com is one such site, but only a limited number of suppliers post their rates on the website. Recent examination of the website showed only three vendors in the PSNH service area. I chatted to Andre Ramirez, one of the co-founders of ShopEnergyPlans.com, about this. Although he has contacted most of the NH suppliers, there is a reluctance for many suppliers to openly exhibit their rates on an aggregator website. On reflection, I think this is understandable, particularly for a price-sensitive commodity, such as electricity, where customer loyalty is very price-dependent. It is the lowest price that will command the most interest, so many vendors choose not to post when their prices are higher.

In my chat with Andre, I did learn of a new feature offered by [ShopEnergyPlans](http://ShopEnergyPlans.com) called [PlanTracker](#). This is a notification tool that sends out emails with recommendations for actions to take regarding your electricity supplier. Having entered Manchester as the zip code for my energy service provider, this morning I received an email recommending that I stay with PSNH for the time being. A list of their recent recommendations for New Hampshire and Massachusetts are tabulated below. I think [PlanTracker](#) is a useful service and is a great way to keep on top of changes.

Utility	Price Increase	As of:	Savings Possible on ShopEnergyPlans	Recommendation
PSNH	7%	Jan. 1, 2015	n/a	Stay on PSNH
Liberty NH	100%	Nov. 1, 2014	16%	Caution on Switching
Unitil NH	85%	Dec. 1, 2014	23%	Switch to 12-mo Plan
National Grid MA	97%	Nov. 1, 2014	20%	Switch to 4-mo Plan
NSTAR MA	61%	Jan. 1, 2015	13%	Switch to 4-mo Plan
WMECO MA	58%	Jan. 1, 2015	7%	Switch to 4-mo Plan
As of December 17, 2015				

Although I understand why vendors may not want to post their information on an information aggregation website, such as [ShopEnergyPlans](http://ShopEnergyPlans.com), I still wanted to know what rates these other vendors were offering, so I spent a morning visiting the websites of all competitive suppliers for residential electricity in the NH service areas and collected the information in the rather large table below. In the process, I was subjected to an overdose of photographs of outrageously illuminated homes or of happy families in warm (and uncluttered) homes, playing on the carpets or looking at their laptops or smart phones, as well as more short videos featuring cute cartoon characters than one person should watch.

Competitive Supplier	PSNH					Unitil			Liberty			NHEC			Comments
	Variable	3 month	6 month	12 month	24 month	Variable	12 month	24 month	Variable	12 month	24 month	Variable	12 month	24 month	
Ambit Energy	15.91	19.32	9.67	11.21	NA										Showing PSNH rates in areas that are not PSNH service areas. Also not showing rates in areas it recorded to
ENH Power	NA			11.39	11.59	NA	11.39	11.59	NA	11.39	11.59	NA	11.39	11.59	Easy to use website. Simple choices, clearly presented
Ethical Electric															Supply only energy generated by wind and solar. Social benefit corporation. Not providing service in recorded service areas
Fairpoint Energy				10.49											100% windpower, 5% rebate after first year. Provides PSNH rates in Unitil and NHEC areas
First Point Power															No website information for residential customer. Seems to focus on custom quotes for commercial customers.
Glacial Energy of New England															No online rates for any service areas which all assumed to be PSNH areas
Gulf Electricity			13.4	10.9	11.7										Well laid out website. Plans have calendar date cut off such as June 2015, Dec 2015. Early termination fee
Integrus Energy Services															On website NH not even listed in states they service
Mega Energy of New Hampshire				13.6	12.98										Also offer a 3 year rate @ 13.36c/kWh. Early termination fee applies
NextEra Energy Service NH															Website link at NH PUC takes you to corporate website. Electrical rate website is http://www.nexteraenergyservices.com/ .
North American Power and Gas				10.49	12.44		11.49	13.44		11.49	13.44		10.49	12.44	Easy to navigate website but shows PSNH rates in NHEC service areas
Power New England			8.79*												*6 month rate runs from Mar. '15 to Nov. '15
REP Energy															PUC website link invalid. No residential rates apparent
Town Square Energy															Plan to offer rates in NH sometime in the future
Union Atlantic Energy Corp															No rates offered for NH service areas
XDOM Energy NH				12.99	12.99										Easy to use website. Termination fee applies.

The table shows all competitive suppliers servicing the four NH utilities. Orange indicates that the supplier has not registered to supply electricity in that particular service area. Yellow highlights indicate areas where the supplier has registered but is not yet offering service (as indicated by their websites). The non-highlighted areas, of course, indicate that rates were available on the various websites and I present the lowest rates for particular services. Many of these vendors offer “green,” or renewable energy, options or a blend of renewable and fossil fuel options. I did not consider these, but simply looked for the lowest rates. Here is what I learned from this exercise of cutting through the overgrowth of website based electricity supply marketing in NH.

Many vendors offer fixed-period and variable options – variable electricity prices are not posted. It is probably a challenge to keep variable rates updated regularly and this is perhaps not a popular option.

For the smaller utilities (NHEC, Liberty, and Unitil), competitive vendors do not seem to have made headway in their service areas and limited choices are available.

PSNH has the most competitive suppliers offering prices.

There can be a wide range of prices offered by competitors in a service area.

Many of the competitive suppliers have cancellation fees associated with their fixed-term contracts, so if you want to jump early, you will end up with some additional costs.

Not all suppliers offer contracts across all service periods. Some just offer a vanilla option of a single rate for 12 months.

I am sure I may have been able to gather price information for the vendors with unlisted prices if I called each utility, but that would have taken up even more time. It also serves to make the point that, even though NH has competitive electricity supply, finding and comparing rates is a time-consuming task. My overall assessment of competitive electricity supply in NH is that we still have a long way to go. I would have thought that competitive suppliers would be falling over themselves in the NH market, that more choices would have been available for residents, and that price information would be more accessible.

In the deregulation process to date, the companies that have done well are the large competitive suppliers, such as Constellation and TransCanada, that have focused on the large industrial and commercial customers and have won a great deal of this business. The table below, based on Energy Information Agency 2012 data, show that these competitive suppliers are now the second- and fourth-

largest electricity suppliers in NH.

Top Five Retailers of Electricity in NH with End Use kWh Sales, 2012

Ranking	Entity	All Sectors	Residential	Commercial	Industrial
1	PSNH	4,600,990	3,030,181	1,391,043	179,766
2	Constellation NewEnergy, Inc	974,715	0	653,377	321,338
3	Unitil Energy Systems	778,111	491,106	231,528	55,477
4	TransCanada Power Marketing, Ltd.	703,055	0	0	703,055
5	New Hampshire Elec Coop Inc	651,380	445,734	169,888	35,758
	Total Sales, Top Five Providers	7,708,251	3,967,021	2,445,836	1,295,394
	Percent of Total State Sales	71%	89%	55%	66%

These competitors have been very successful at drawing large users of electricity away from the utilities and there is now a slower picking away at residential customers by smaller competitors focused on this market. It always astounds me that more than 50% of PSNH electricity sales are going to competitive suppliers (see the first table in this post), leaving a smaller and smaller base of residential customers picking up the tab for those PSNH plants. Rough calculations show that, if the costs in PSNH's [recent filing](#) are accurate and we assume that 60% of their costs are fixed, and if PSNH supplied electricity to all their customers, then their costs per kWh of electricity could be as much as 30% lower than their present default rate.

What do we take from this? This half-hearted and incomplete process of electricity deregulation in NH has hurt PSNH residential rate payers. We understand that it is complicated but the process needs to be completed. It is time to move forward and get the job done. Either pull the plug on deregulation or get it done.

In the words of that great rock and roll sage, Tom Petty*


*It's time to move on, it's time to get going.
And what lies ahead I have no way of knowing
but under my feet, the grass is growing.
It's time to move on, it's time to get going.*

Until next time, remember to turn off the lights when you leave the room.

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(*It's Time to Move On – A tune from one of my favorite Tom Petty's albums, *Wildflowers*. Here is Petty performing the tune live in 1994. [It's Time To Move On](#))

Posted by [Mike Mooiman - Franklin Pierce University](#) at 9:40 AM  Recommend this on Google

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Labels: [competitive electricity supply](#), [electrical utilities](#), [electricity](#), [electricity deregulation](#), [electricity prices](#), [Liberty](#), [New Hampshire Energy](#), [NHPUC](#), [PSNH](#), [Public Utilities Commission](#), [Unitil](#)

The Heart of the Matter* – PSNH and Electricity Price Increases in New Hampshire

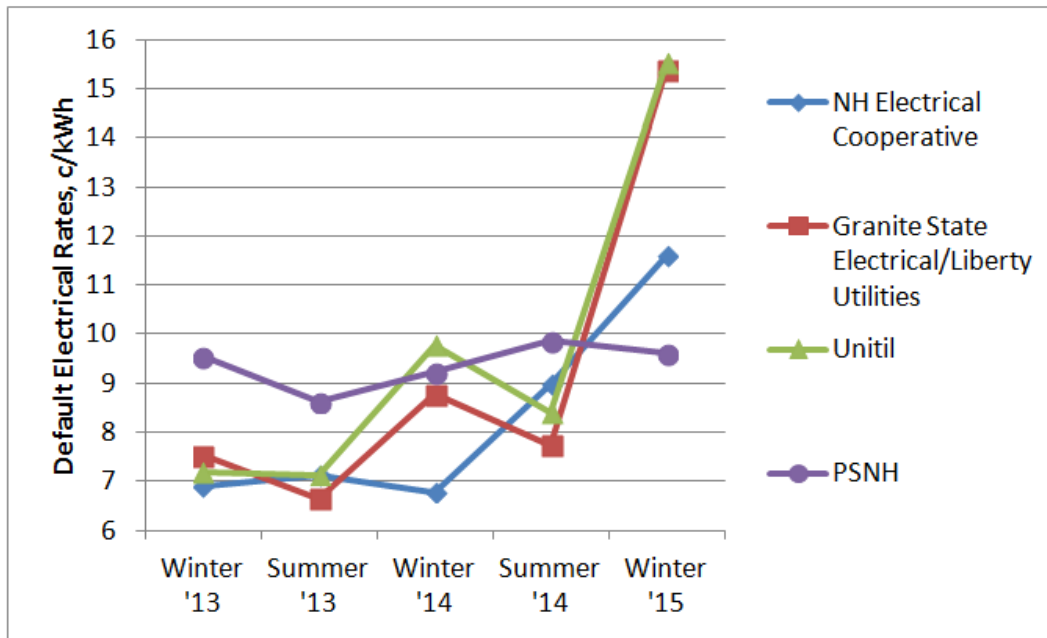
In my last post, I presented the table below and made a big deal about the large winter price increases that have been put forward by NH Electrical Co-op, Liberty and Unitil, but did not discuss the surprisingly small increase put forward by PSNH (highlighted in yellow). However, in an earlier post, [River's Gonna Rise](#), I made the statement that, "...with electricity prices shooting up this winter and with PSNH customers, for the time being at least, somewhat shielded from these increases, this does give one pause for thought and to consider that ownership of generating operations may perhaps have some benefits." Well, I have been thinking long and hard about this and about PSNH's relatively low winter rates and, after some research, analysis, charts, and graphs, I have now come to a rather different conclusion. Read on.

Default Electrical Service Rates (cents/KWh) for New Hampshire Utilities

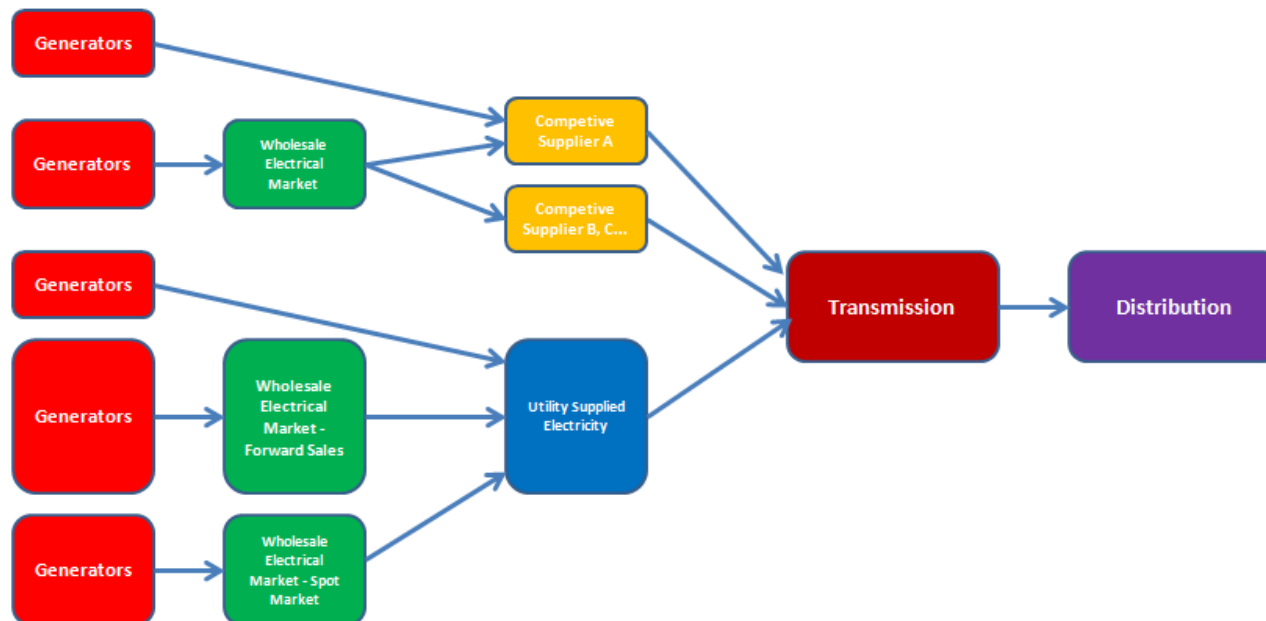
Electrical Utility	Winter '13	Summer '13	Winter '14	Summer '14	Winter '15	Increase from previous winter	Winter Rate Period
NH Electrical Cooperative	6.89	7.11	6.77	8.97	11.60	71%	Oct. 1 - Mar.31
Granite State Electrical/Liberty Utilities	7.53	6.66	8.77	7.73	15.40	76%	Nov. 1 - Apr. 30
Unitil	7.18	7.13	9.77	8.41	15.54	59%	Dec. 1 - May 31
PSNH/Northeast Utilities	9.54	8.62	9.23	9.87	*9.61	4%	Jan. 1 - Jun. 31

**Filed estimate - not yet approved by PUC*

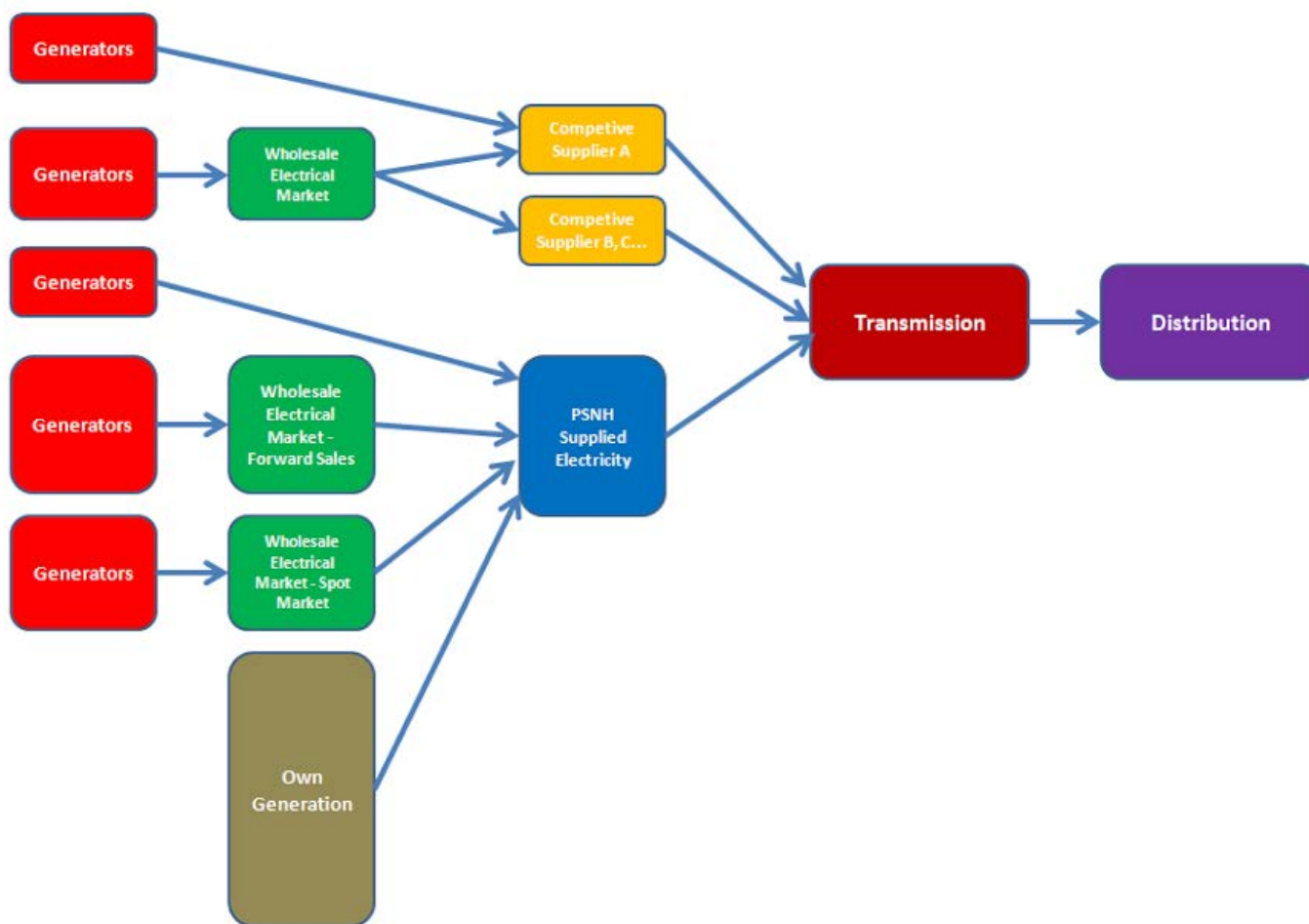
For the three-winter period shown in the table above, I have plotted the default electricity rates for the different utilities in the graph below. Bear in mind that these data are not exactly comparable because they involves slightly different time periods (e.g., the NH Electric Coop (NHEC) winter rate runs from October to March, whereas that for PSNH runs from January to June), but it is a convenient way to view the data. Over this three-year period, PSNH rates were generally higher than those of the other utilities except for this upcoming winter, however the other utilities tend to show larger fluctuations from season to season, which PSNH does not.



Because the other utilities no longer have generating operations, they purchase electricity from the wholesale markets or (in the case of NHEC) directly from generators, as shown in the figure below (excerpted from [my last post](#)). As a result, the other utilities are more subject to the ups and downs of the wholesale electricity markets.



However, PSNH is still an integrated utility – it owns its own generating assets – and, as a result, generates a lot of its own electricity. The electricity supply picture for PSNH is therefore somewhat different, as shown in the following figure, where PSNH has a large supply of electricity generated from its own operations (shown in grey).

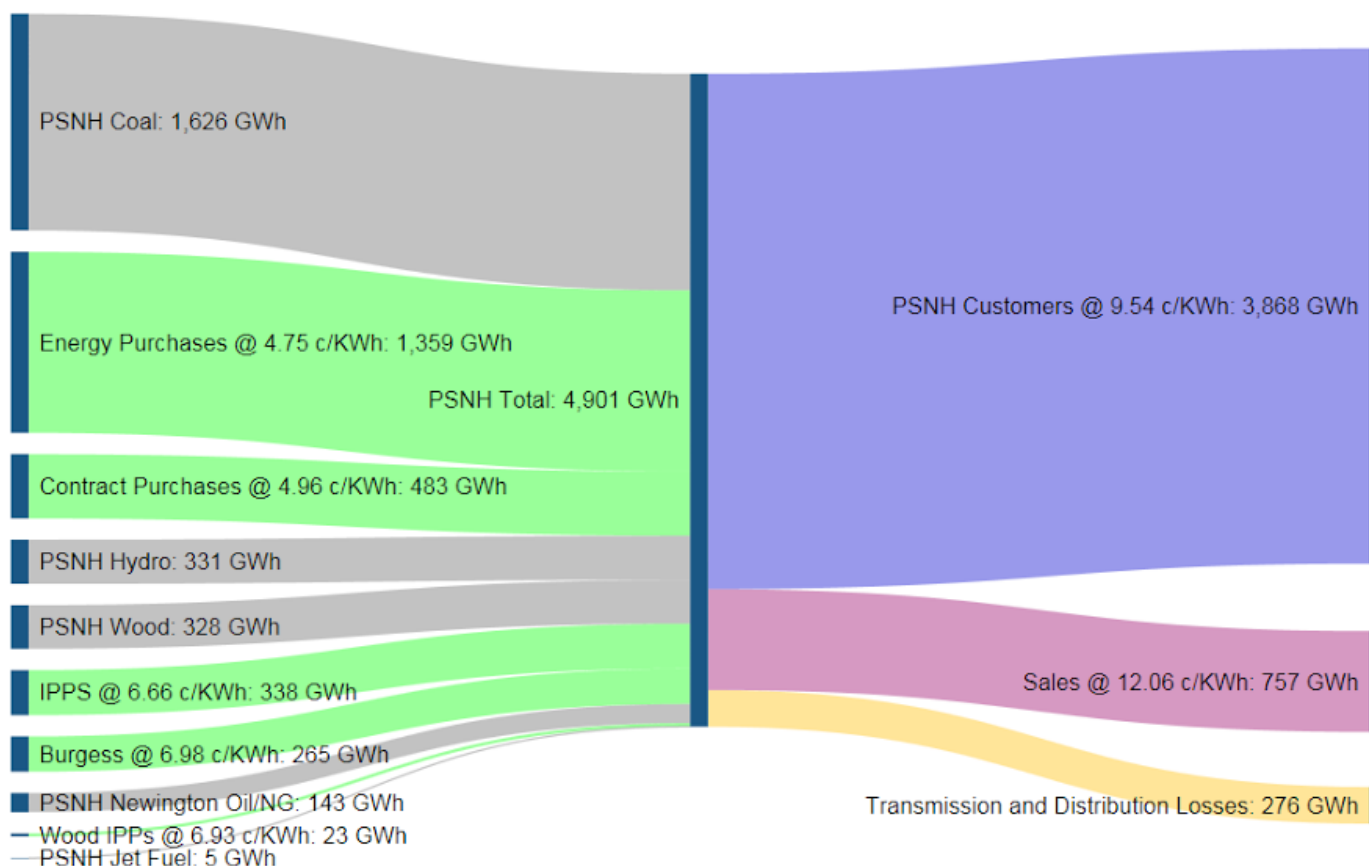


I have written about PSNH's generating operation in several posts, including a recent overview of their hydro assets in [River's Gonna Rise](#) and the possible sale of their generating assets in Options. PSNH has approximately 1200 MW of generating assets, as shown below.

Generating Plants	Power Rating, MW	Fuel
Merrimack	440	Coal
Newington	406	Nat. Gas or Oil
Schiller	100	Coal or Oil
Schiller	50	Biomass
5 x Peaking Plants (2x Bow, Groveton, Tamworth, Portsmouth)	100	Jet Fuel
9 x Hydroelectric Plants	65	Hydro
TOTAL	1161	

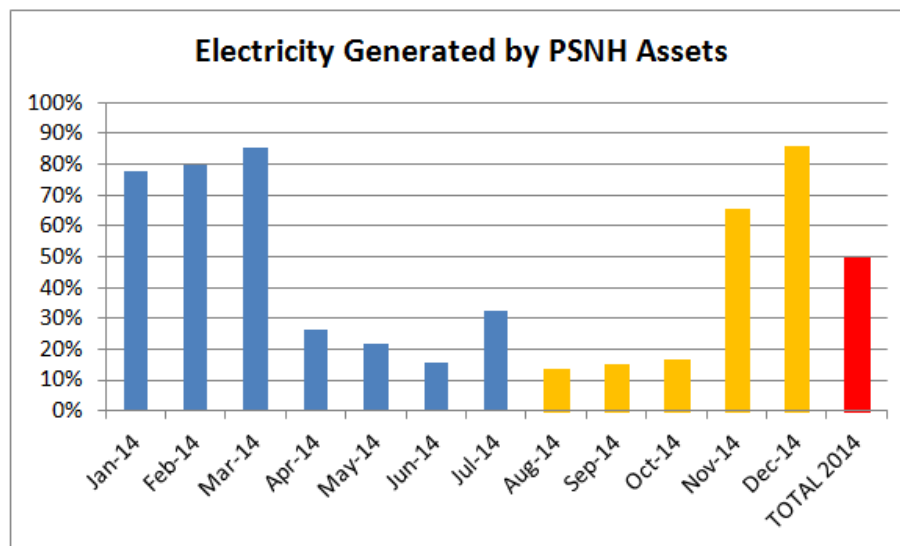
The problem for PSNH is that their main assets are the old coal-fired Merrimack and Schiller plants and the relatively inefficient dual-fuel plant in Newington. In a market with low natural gas prices and very efficient dual-cycle natural gas plants, these older PSNH plants are generally non-competitive and there is often little call for the expensive power they generate.

To understand just how much electricity PSNH produces from its own operations, I took a close look at the data presented in PSNH's latest filing for winter electricity rates. The filing included electricity supply numbers for the whole of 2014, which were a combination of actual year-to-date and forecast numbers. I used this data to prepare the Sankey diagram below. (For more on Sankey diagrams, see [Another View of Statewide Energy Flows in New Hampshire.](#))



The origin of PSNH's 2014 electricity supply is shown on the left in gigawatt hours (GWh). The total amount supplied is 4901 GWh. The flows in grey originate from PSNH's own generation operations, whereas green flows are from contracted suppliers or wholesale market purchases. The right side shows what happens to the electricity generated and sourced by PSNH: the bulk of it, 79%, is sold directly to PSNH customers; transmission and distribution losses are about 6%; and the remaining 15% is sold into the wholesale markets - mainly during the cold winter months.

The chart below shows the same data on a month-by-month basis, calculated as the percentage of PSNH's total output generated by its own operations. These 2014 numbers are a combination of actual (blue) and forecast data (orange). The chart clearly shows that the PSNH operations – largely the coal-fired Merrimack plant – really ramp up in the cold winter months and are responsible for the majority of PSNH output during these times. In the warm summer months, when natural gas is cheap and readily available, it is not financially prudent to run the coal-fired operations. Instead, it is cheaper for PSNH to buy natural gas-generated electricity from the wholesale markets. At these times, the bulk of PSNH supply comes from contracted or wholesale market purchases. (That little blip in July comes from supplying electricity for our summer air-conditioning needs.) The final column, in red, shows that the amount of electricity that PSNH will generate from its own operations this year is projected to be right around 50%.



In the Sankey diagram above, I have included the costs of the electricity purchased by PSNH. Aggregating these costs and calculating a weighted average, I determine that that average cost of purchased energy is 5.4 c/kWh. If this purchased energy is 50% of PSNH output and PSNH is selling electricity at 9.5 c/kWh to its customers, it takes only simple algebra to determine that the all-in cost associated with PSNH-generated electricity is 13.6 c/kWh ($0.5 \times 5.4 + 0.5 \times 13.6 = 9.5$). And therein lies the rub: At present utilization rates and with low electricity prices in the summer, the PSNH generation facilities are very expensive to run. The high costs associated with its coal-fired operations weigh heavily on the rates paid by PSNH customers and explains why, more often than not, PSNH rates are higher those of the other NH utilities.

I realize that this calculation represents a gross simplification of a complex matter and it allocates the burden of all government-mandated electricity programs, like RPS and RGGI, to the generating assets only. Even so, the bulk of the costs originate from the assets themselves so I am comfortable with the simplification. This straightforward calculation, when applied to 2015 projections, clearly demonstrates that PSNH low winter rates for 2015 are not as a consequence of its own generating assets. *Instead*, they are a direct result of its portfolio of supply arrangements from wholesale market purchases and power-purchase agreements from wood-burning plants, including the new Burgess plant in Berlin, the wind farm in Lempster, and other generators. So my earlier statement that, "...with electricity prices shooting up this winter and with PSNH customers, for the time being at least, somewhat shielded from these increases, this does give one pause for thought and to consider that ownership of generating operations may perhaps have some benefits," does, in retrospect, not appear to have been well founded, at least from a electricity rate point of view.

This calculation also underscores the decision that lawmakers and regulators in NH are wrestling with at this time: Is it in the best interest of PSNH customers to complete the process of deregulation and compel PSNH to sell its generating assets? If this happens, PSNH will be like the other utilities in NH and will need to source 100% of its electricity from the wholesale markets in New England or directly from generators through long- and short-term contracts. The next (and, I think, the most important) question is: Can this be done for less than 13.6 c/kWh once those generating assets are sold?

If PSNH has to source all its electricity from the wholesale market, they could run into a problem similar to that discussed [in my last post](#), where, like Liberty and Unitil, PSNH could end up buying right into those winter peaks created by natural gas shortages. [In my last post](#) I was somewhat critical of the short-term "next six month" approach that regulations compel Liberty and Unitil to use to source electricity for their customers. I suggested that a portfolio of different sources, as well as long- and short-term supply, be used. As it turns out, the regulators are ahead of me on this one: the NH Public Utilities Commission (NH PUC) recently issued [Order 25,732](#) to

review the sourcing of electricity by Unitil and Liberty. It is very likely that any changes in sourcing approaches would apply to PSNH after the sale of its assets, so it will be interesting to follow developments in this area.

It is important to note that this is not the whole story. If PSNH is mandated to sell their generating assets, they will – and correctly, I might add – expect to be compensated for the difference between the book value of those assets and what they will raise from their sale. All indications are that this difference, known as stranded costs and discussed in [Options](#), will be substantial. These stranded costs will come out of the pockets of PSNH customers. The NH regulators at the NH PUC are presently trying to determine how large this amount will be.

In the equation

$$\textit{Stranded costs} = \textit{Book value} - \textit{Sale value},$$

there are obviously two components, both of which are being scrutinized and debated at this time.

As I noted previously, the generating assets are listed on the PSNH financial statements at \$ 1.1 billion but with a net depreciated value, or book value, of \$ 660 million. This \$660 million value includes the \$ 422 million recently spent on the scrubber that was installed at the Merrimack plant to reduce mercury emissions from the burning of coal. The original budget for the scrubber was "not to exceed" \$ 250 million, but, by the time it was completed, the price had skyrocketed to \$ 422 million. A series of hearings was recently held to determine whether it was prudent for PSNH to have spent \$ 422 million for a scrubber on an aging coal plant, and we are currently waiting for the NH PUC to make a determination on the prudence of this investment. I anticipate that PSNH will file an objection to the determination and we can then expect the battle to play out in the NH courts.

The second component of the stranded cost equation, the sale value of PSNH generating assets, is also being analyzed. Consultant reports have been commissioned, blogs have been written, and one thing is clear: in this low-cost natural gas market, the coal-fired assets of PSNH have relatively little value. Interestingly, the crown jewels in the PSNH generating portfolio are their hydro assets, about which I have recently written.

In the end – after all the consultant reports, hearings, determinations, and court battles – I believe the book value will be decreased and the sale value will erode, which is still going to leave PSNH ratepayers on the hook for those stranded costs. In [Walking on the Wild Side](#), I indicate these stranded costs may be of the order of 0.5 c/kWh. This has been borne out in a [recent status report](#) issued by the NH PUC. This is an important number, but of far less importance than the numbers that will come from answering this one very important question: *Once the PSNH assets are sold, can PSNH reliably, consistently, and over the long term, source electricity at a lower cost than that incurred by their generating assets?* This is the heart of the matter* and one that PSNH, ratepayers, legislators, regulators, and courts in NH will be struggling with over the next few years.

This post has covered a lot of ground, so, to wrap it up, let me leave you with the following takeaways:

PSNH rates are low this winter but this is not a consequence of owning their generating assets. Instead, it is a result of their low cost purchases through a portfolio of long-term power purchase agreements and wholesale market purchases.

The PSNH generating assets have value in cold winter months when natural gas is expensive. As natural gas supply to the region improves over the next few years, this will become less of an issue and the value of coal-fired operations will diminish even further.

Scrubber prudence reviews are an important step in moving PSNH to divest its generating assets but, in the big picture, I do not anticipate that this will have a significant effect on the electricity rates that PSNH rate payers will end up paying.


More important will be the rates at which PSNH can procure *all* its electricity from the wholesale markets and whether they will be able to adopt a portfolio approach to sourcing this electricity.

Until next time, remember to turn off the lights when you leave the room.

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(*The Heart of the Matter – The very moving song from Don Henley's album *The End of Innocence*. I really like Henley's version but it has been very well covered by India Arie. Here are both - you decide which you like best. [Don Henley](#) or [India Arie](#))

Posted by [Mike Mooiman - Franklin Pierce University](#) at 7:17 AM  Recommend this on Google

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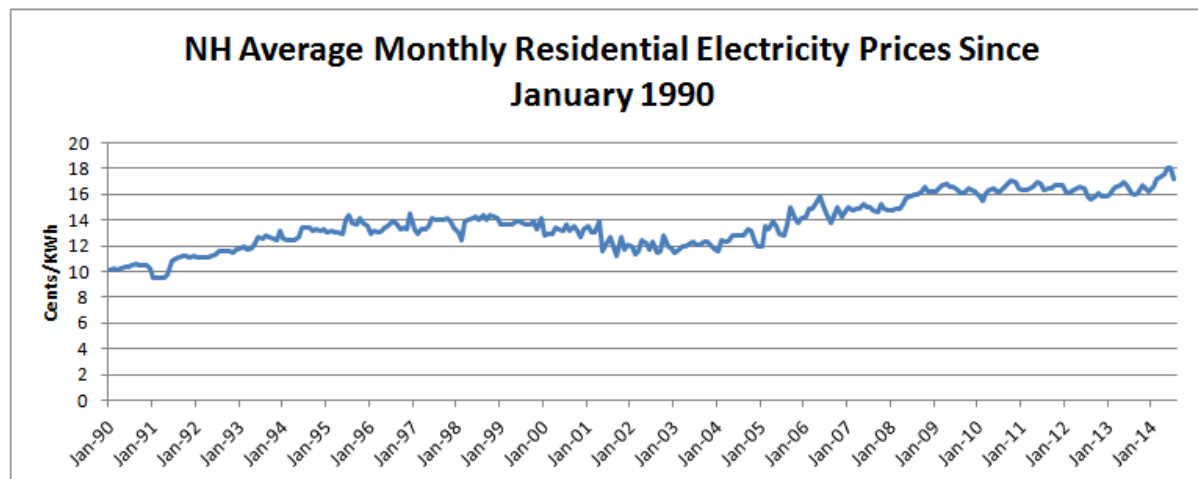
Labels: [default rates](#), [electricity prices](#), [electricity rates](#), [Liberty](#), [NHPUC](#), [PSNH](#), [Public Utilities Commission](#), [stranded costs](#), [Unitil](#)

SATURDAY, NOVEMBER 1, 2014

Gonna Take You Higher* – Electricity Price Increases in New Hampshire

If you are a NH resident buying your electricity from Unitil, NH Electric Cooperative, or Liberty Utilities, you are most likely reeling from the recent increases in winter electricity rates. This post begins a series that takes a look at what makes up NH retail electricity prices and the reasons behind the large increases that we are seeing for certain utilities.

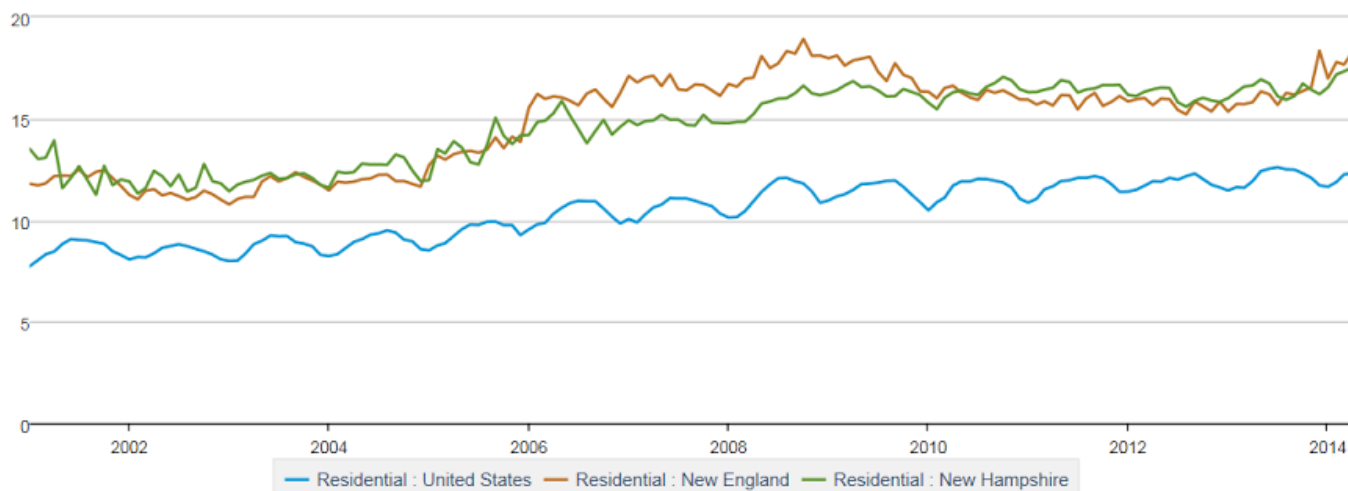
Historically, electricity prices have been on the rise. The chart below shows the 24-year historical average NH residential electricity prices. In 1990, prices were about 10 cents per kilowatt hour (c/kWh) and then climbed to about 14 c/kWh in 1998. Prices then experienced a slow decrease until about 2002, after which they continued their increase to this past winter when we saw average prices of ~17 c/kWh. The trend from 1990 to 2013 represents a compounded average increase of 2.5% per year, which is the same as US inflation over the same period.



The next chart looks at residential electricity prices for a shorter time period, and compares the NH prices (in green) to those of the NE states (brown) and to the average US monthly figure (blue) since 2000.

Average retail price of electricity, monthly
















cents per kilowatthour



Source: EIA

NH has generally followed the NE average, but from 2006 to 2010 was quite a bit lower. However, over this period, our electricity rates have been about 40% higher than the national average.

State-by-state comparison is always useful and interesting. The figure below shows recent state rankings based on July 2014 retail electricity prices. The NE states are all in the top 11, with Vermont and Connecticut higher having higher prices than NH. Our electricity prices are the 7th highest in the US at 17.23 c/KWh – we can take some solace that the price in Hawaii is more than double the NH average. On the other hand, Washington state, which benefits from cheap hydroelectricity, has the lowest prices – almost half of NH's at 8.96 c/KWh.

Rank ↕	State ↕	Average Retail Price of Electricity to Residential Sector (cents/kWh)	
1	Hawaii	38.42	
2	Alaska	20.59	
3	New York	20.31	
4	Connecticut	19.45	
5	Vermont	17.93	
6	California	17.67	
7	New Hampshire	17.23	
8	New Jersey	16.52	
9	Massachusetts	16.27	
10	Rhode Island	15.85	
11	Maine	15.31	
12	Michigan	15.11	
13	Wisconsin	14.53	
14	Pennsylvania	13.96	
15	Maryland	13.77	

Source: EIA

All of the electricity prices I have presented so far are average prices and include all the charges you see on your electrical utility bill. Looking at an electricity bill is not unlike deciphering your cell bill. There are a lot of bits and pieces and it takes effort to understand them. There are three basic components. The first is the cost of power, which is usually a single line item for the cost of electricity per KWh. The second is the cost of getting the electricity to your home, *i.e.*, the cost of distribution and servicing your account, which usually involves several line items, such a fixed account charge, a distribution charge, and perhaps even a transmission fee. Finally, there are all the odds and ends, such as taxes, charges for government-mandated programs, *etc.*

The reason for all these separate charges is, as I have noted previously in [What's It All About, Alfie?](#), is that there are three key parts to the electricity business: the generation of electricity, typically at a large power plant located in a central location; the transmission of electricity over long distances from the generation point to towns and cities; and the distribution of electricity through the community via the sub-stations, wires, and transformers to individual homes and businesses. Not all electrical utilities focus on all aspects of the business. Some, for example, such as my local electrical company, just distribute electricity. Others, such as the merchant wood-fired power plants or wind farms, just focus on generation, whereas utilities like PSNH are fully integrated organizations involved in all three aspects of the business.



The biggest line item in your electrical utility bill is the cost of electricity. This is the focus for the rest of this post.

The electricity industry has been partially deregulated in NH and retail customers can purchase their electricity from different competitive suppliers. However, this electricity still has to run through the transmission lines and electrical wires of their local electrical utility and so customers are charged for the use of that distribution infrastructure. Should a NH resident decide not to purchase electricity from a competitive supplier, the local electrical utility has the responsibility to source and supply the electricity to the customer. The utilities do so and apply their *default electrical service* rate. Although there has been competition on the residential supply side of electricity for a few years now, the majority of NH residential customers still rely on their local electrical utility company to source and supply their electricity. This is the reason that increases in default electrical service rates are so important.

There has been a good amount of reporting lately about the big increases in electrical service rates proposed by the utility companies and approved by the NH PUC. The table below summarizes the present default electrical service rates as well as some information for previous years.

Default Electrical Service Rates (cents/KWh) for New Hampshire Utilities

Electrical Utility	Winter '13	Summer '13	Winter '14	Summer '14	Winter '15	Increase from previous winter	Winter Rate Period
NH Electrical Cooperative	6.89	7.11	6.77	8.97	11.60	71%	Oct. 1 - Mar.31
Granite State Electrical/Liberty Utilities	7.53	6.66	8.77	7.73	15.40	76%	Nov. 1 - Apr. 30
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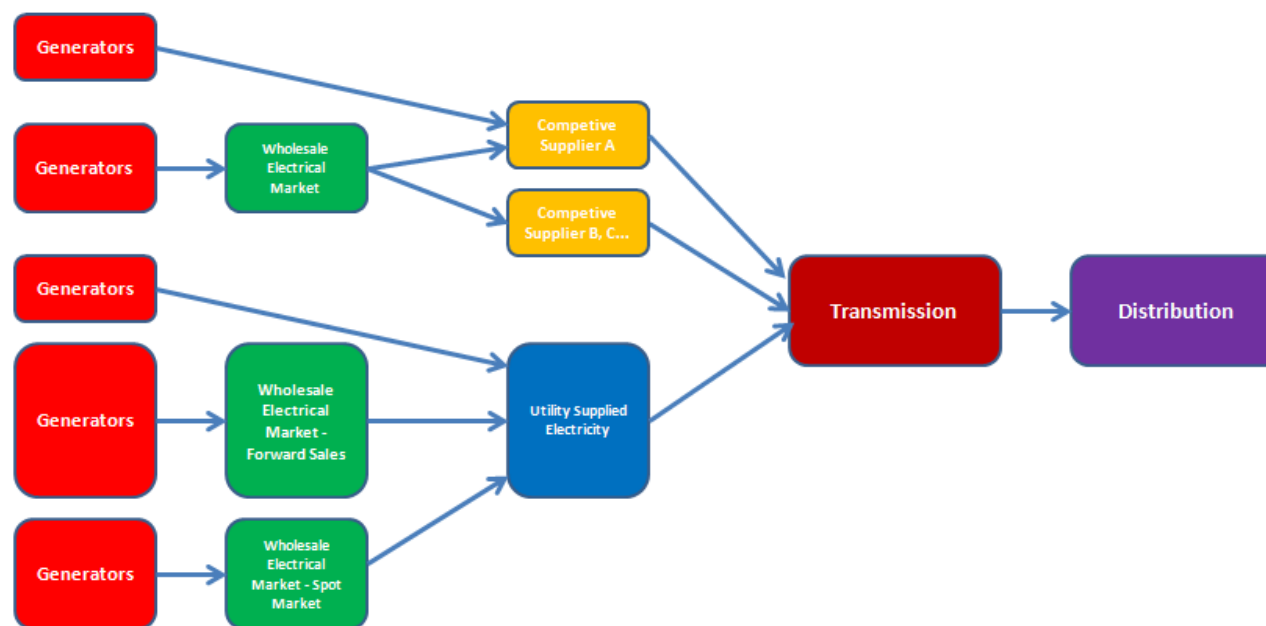
**Filed estimate - not yet approved by PUC*

It is important to remember that these increases all relate to electricity *supply* (and not to transmission or distribution charges) so let's take a closer look at the supply side of the NH utilities. The rest of this post focuses on the three utilities, NH Electric Co-op, Unitil, and Liberty Utilities, with approved increases. PSNH's default rates - which are not yet approved by the Public Utilities Commission - will be the topic for my next post.

Expanding the supply aspect of the simple generation-transmission-distribution diagram presented above, the picture quickly becomes complicated because, as part of deregulation and the drive for competitive supply, we have introduced various intermediaries and market participants.

The electricity supply to residences by three of the four NH utilities (NH Electric Co-op, Unitil, and Liberty Utilities) is shown in the figure below. Competitive suppliers, shown in yellow, purchase electricity directly from generators (red) or through wholesale electrical markets (green). The second source of supply is from the utility itself, shown in blue, which needs to procure electricity for its default electrical service customers. The utility can purchase this electricity directly from generators but the bulk of the purchases are through wholesale

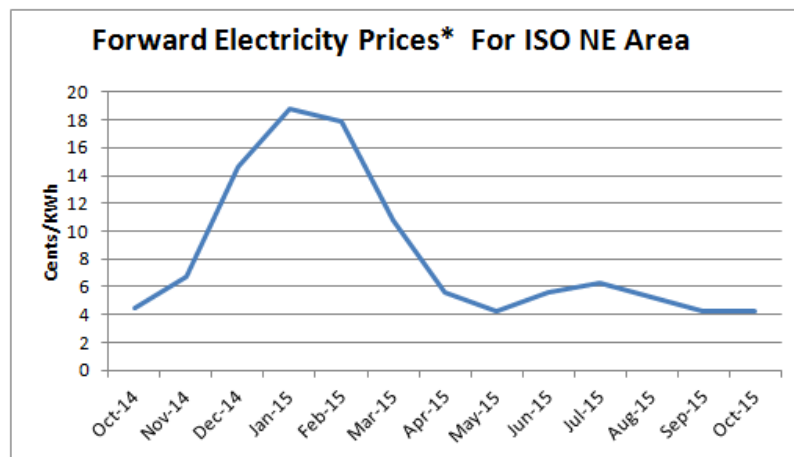
electrical markets. There are two types of wholesale electrical markets – the forward sales and the spot markets. Generators sell electricity into both of these markets.



In order to supply electricity to their default customers, the utilities have to forecast how much electricity will be required for a six-month period and then lock in the price of the forecasted amount of electricity *in advance*. This is carried out in the *forward sales* segment of the wholesale electrical markets. Although there is a cost associated with forward purchase commitments, they offer the advantage of locking in the rate of electricity purchases for the period. Should more electricity than forecasted be required, the utility has to purchase this extra electricity on the spot market.

Three NH utilities (NH Electric Co-op, Unitil, and Liberty Utilities) have just gone through the round of forecasting for this winter electricity supply. The utilities have estimated the number of default service customers and their total electricity consumption, and have gone out to markets and solicited bids for supplying this forecasted electricity through the winter months. The bids for Unitil and Liberty were reviewed, documented, and submitted as part of their default electrical service rate application to the NH Public Utilities Commission (PUC). The costs associated with these forward purchases of electricity are then included, without any mark-up by the utility, in the calculation of a single rate for winter months. The NHEC Co-op (NHEC) is unregulated and is not required to submit its rate adjustment calculation to the PUC.

The problem for default electricity customers is that the future prices for electricity for the next six months are high, as shown in the chart below. As the utilities lock in their supply and prices for the winter months, they are buying right into the winter price spikes.



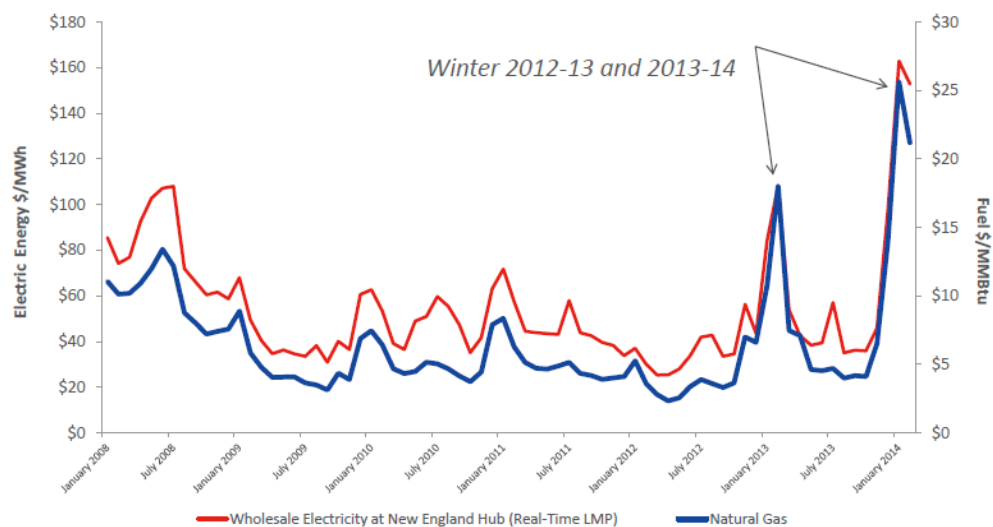
**CME 5MW Futures Prices: Delivery under the ISO New England Mass Hub 5 MW Peak Calendar-Month Day-Ahead LMP Futures , 10/2/14 Prices*

The difficulty with this approach is that the utilities are trying to forecast in September what their electricity sales in the winter will be. This is an enormous challenge because they have to forecast how cold the winter will be, how many customers they might have and their consumptions. They must then commit to purchasing that electricity in advance. However, if the winter is mild, the spot price could be lower. Of course, the opposite could happen: it could be a brutal winter, natural gas consumption could be sky high, and electricity prices could skyrocket like last winter. This is the challenge that the utilities and their regulators face. Is it better to lock in the price now – called “hedging” – or subject your customers to the gyrations of the spot markets where prices could be higher or lower than the forward market, or should some balance be struck between committing to a 100% hedge or a partial hedge? This is exactly the same decision we face at home. Do we commit to a fixed price for oil or natural gas over the winter months, or do we take our chances and hope it will be a warm winter and that oil and natural gas will be cheaper than that fixed-price contract. What would you do?

The regulators currently require Unitil and Liberty to hedge 100% of their six-month forecasted amounts and commit to the high winter prices. This has led to the higher winter default service rates posted by these utilities.

This brings us to the question of why future prices for electricity are so high in winter. In two words: natural gas. As we have closed down nuclear and coal-fired power plants in NE, [we are now generating 46%](#) of our electricity using natural gas. Depending on your viewpoint, that could be a good thing: it is a domestic fuel, cheap, and less polluting than coal. It does, however, make us very dependent on the natural gas market and fluctuations in natural gas prices. Natural gas is also used for heating and cooking and, in winter, we do not have the pipeline infrastructure to bring in enough natural gas for heating and electricity generation. During winter, the natural gas utilities and electricity generators suck very hard on the end of the natural gas straw and when demand increases, markets do what they are wont to do and prices increase accordingly. When natural gas prices increase, so do the prices of electricity. NE has experienced price spikes for both natural gas and electricity during the past two winters, as shown in the chart below.

High Gas Prices Drove Wholesale Electricity Prices to Record Levels over the Past Two Winters



Source: ISO-NE

Sam Evans-Brown, in a [recent NHPR report](#), does a great job of summarizing the natural gas situation in New England. The political cartoon by Bob Englehart of the *Hartford Courant* points to the irony of situation: there is an enormous amount of natural gas available in the US, but NE is at the end of the pipeline and that causes problems for us in the high-use winter months.



([click here to view](#))

Bob Englehart

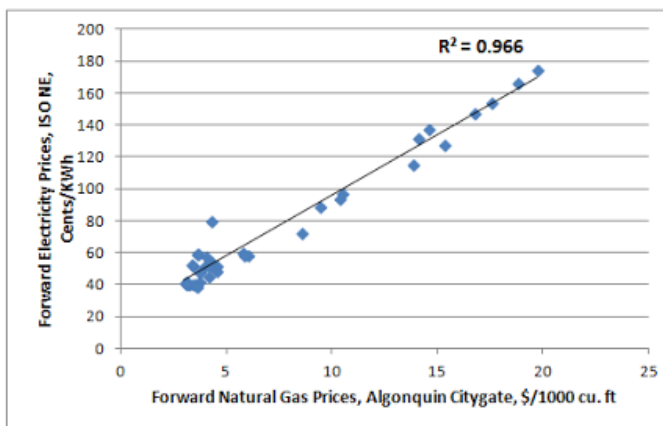
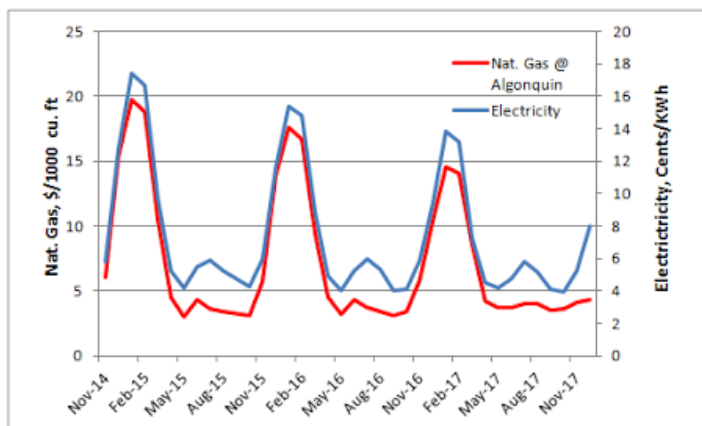
Hartford Courant

Dec 19, 2013

EditorialCartoonists.com

The future electricity prices are joined at the hip to the future natural gas prices. In the figure below, the leftmost chart shows the future prices of electricity and natural gas for the next three years, as provided by the forward markets. (The forward price of natural gas is calculated for the Boston Algonquin Citygate, which is a good proxy for NE natural gas pricing. See [The Price](#) for a discussion of natural gas citygate prices.) The winter spikes in forward electricity prices match the winter spikes in forward natural gas prices. Should you need convincing, the right-hand figure shows a direct and very strong correlation between future electricity future natural gas prices. In fact, the correlation coefficient is 0.966, which indicates a super-strong correlation. (Correlation coefficients vary between 0 and 1. A

coefficient of 1 indicates a perfect correlation, whereas a value of zero indicates no correlation.) Although correlation does not necessarily mean causation, in this case we can indeed be comfortable in concluding that high future natural gas prices lead to high future prices for electricity.



Returning now to the table that shows the default service rates for the four utilities, we note that Unitil, Liberty, and NHEC reflect increases of 59%, 76%, and 71%, respectively, over last winter's rates. Although NHEC also shows a large increase, their winter rates are substantially lower. Based on what I have been able to learn, these lower rates are due to diversification in the way NHEC purchases its electricity. NHEC does not hedge 100% of its forecasted needs just six months ahead. Instead, it commits to forward purchases many years out and to some just a few months out. It also purchases electricity directly from generators through long-term (20-year) power purchase agreements and will also purchase some of its power on the spot market where it is able to take advantage of lower spot prices at times. As an unregulated utility, NHEC clearly has more discretion than the regulated organizations and some might suggest that these direct comparisons are unfair. I disagree, because comparisons of these different approaches are important in trying to figure out what works best for NH ratepayers.

The Co-op model has a lot of attractive features. The customers are the shareholders and they are not incentivized by returns on capital or dividends. They want reliable supply and the lowest possible prices for electricity and the whole organization is focused to deliver this. With the other utilities, I don't see the same incentives to keep down electricity prices. The regulated utilities, Unitil, Liberty, and PSNH, are required to pass on the costs of electricity to their customers without any mark-up so there is little motivation for them to search out alternatives to minimize energy prices.

NHEC has a long-term view of electricity prices and, to my mind, the "next six months" approach at Unitil, Liberty and PSNH, as required by regulation, is far too short-term. Wholesale reliance on short-term forward markets does not seem to be the best approach. There is certainly merit to the diversification and flexibility of supply model used by NHEC and I wonder whether consideration should not be given to incentivizing the regulated utilities to develop a longer-term view of electricity supply. One way to do this may be to allow the utilities the flexibility to diversify their electricity supply and reduce the price of electricity below that of the short-term forward markets and to share significantly in any resultant savings.

While researching this post, it struck me that there is considerable variety in the types of electrical utility and a great deal of experimentation occurring in NH. NH arrived early to the deregulation ball and then pulled back when things went awry in California (see [Should I Stay or Should I Go?](#)). As a result we have an integrated utility, PSNH, still in the generation, transmission, and distribution business; we have two deregulated utilities, Unitil and Liberty, that are out of the generation business and who buy all their electricity on the wholesale markets; we have a cooperative in NHEC which is not regulated by the NH PUC; and we have a few

municipal electric companies. With all of these options in NH, we have a unique opportunity to figure out which model is the best, and which consistently and reliably delivers low cost electricity to NH ratepayers.

The past two winters have seen a refrain of "Gonna Take You Higher"* and I anticipate that the NH annual average electricity price will rise again this year. When deregulation was introduced, we expected the markets to automatically deliver lower electricity costs. This has not always happened. Sure, we have run into cold winters, natural gas pipeline capacity issues, and the shutdown of nuclear and coal plants, but deregulation appears to have fallen short on some of its promises. This requires some reflection and is certainly worthy of a future blog post.

Electricity markets are different from other energy markets, many of which have an inventory buffers in the form of storage or stockpiles to overcome temporary interruptions and market dislocations. Electricity, on the other hand, needs to be simultaneously generated and consumed: it cannot be stored, and the underlying market components and structures are hellishly complicated. There are a limited number of market players, liquidity can be problematic at times, and – regardless of the cost – it needs to be "on" all of time. Moreover, in NE, the market for electricity now rests on top of the local market for natural gas – another commodity for which local storage is very limited and where delivery constraints come into play. With so much of our electricity dependent on natural gas, we could even reach situations where there is insufficient natural gas to generate the electricity we need. From this viewpoint, it appears that heavy dependence on natural gas has compromised the reliability of our electricity supply. This is all frightfully messy.


I am a proponent of the letting the invisible hand of the market do its work, but it does need to do so under the very visible and intelligent hand of regulation. My 1/8 of a KWh worth is that progress has been made but there is still work to do to get things right for NH electricity rate payers.

Until next time, remember to turn off the lights when you leave the room.

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(*Gonna Take You Higher – A line from the chorus of Sly and the Family Stone's tune, *Want to Take You Higher*, and a great example of the funky soul music from the 1960s. This was one of the tunes in the Family Stone's set at Woodstock when they played it at 3 am and had the crowd chanting "Higher". Here is a video of a 1969 show that gives you a sense of the power and drive of Sly and the Family Stone. Enjoy [I Want to Take You Higher](#).)

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ABOUT ME



 **Mike Mooiman - Franklin Pierce University**

My name is Mike Mooiman and I am an Associate Professor in the MBA program at Franklin Pierce University. I have a largely technical background with Masters' degrees in Chemistry, Business and a PhD in Metallurgical Engineering. During my career I have always had an interest in energy issues and reducing energy consumption in manufacturing operations. At Franklin Pierce, I have had the opportunity to build a new type of MBA program – one that could look at energy issues from a business and sustainability viewpoint. This is our MBA in Energy and Sustainability Studies and in this program students can spend about 25% of their MBA studies studying and thinking about energy and sustainability matters. It is our goal that these students will enter the workforce with a good understanding of energy issues and will be able to assist and direct the companies they join in these matters. In fact some of our graduates are already doing so. Some are working in sustainable agriculture, others for energy services companies and others are starting up energy businesses in South America.

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