

Review of Electric Portfolio Hedging and Commodity Rate Mechanisms



**New York Public Service Commission
Technical Conference
May 15, 2014**

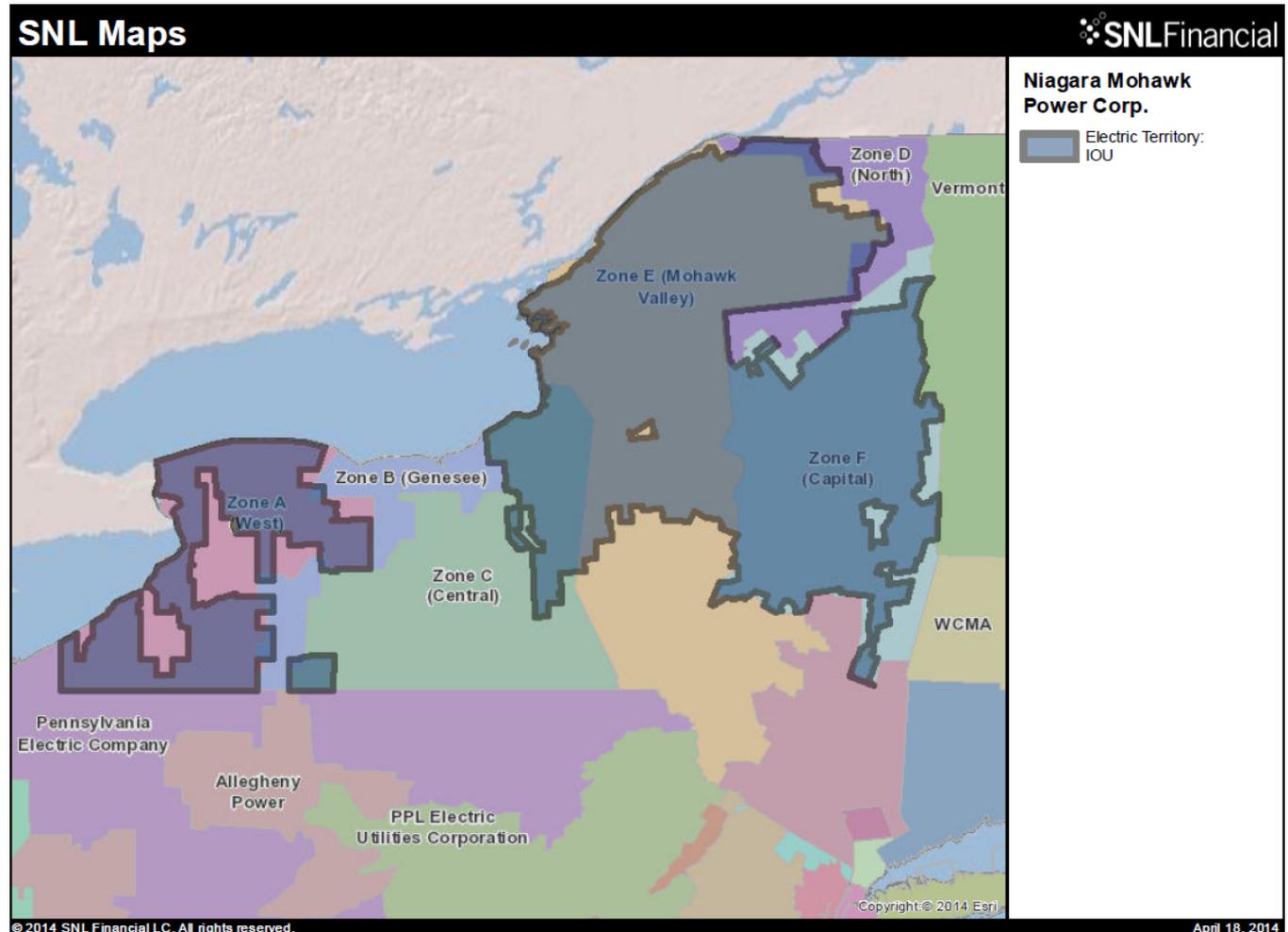


Agenda

- Overview of Electric Supply Portfolio and Hedging
- Overview of Electric Commodity Rate Mechanisms
- The Winter of 2013-14
 - Increase in Winter Electric Wholesale Prices
 - Winter Electric Supply Portfolio and Hedge Benefits
 - Winter Impact on Rates – Total Bill Volatility
 - Impact on Residential Typical Bills
 - Mechanics of the Commodity Rate Mechanisms
- Observations from this Winter
- Preparing for Next Winter and Beyond
- National Grid Outreach to Customers and Assistance to Manage Higher Bills

National Grid's Upstate NY Electric Portfolio

- New York State diverse footprint across NYISO Zones A through F
- Serve 1,600,000 electric delivery customers across New York
- Currently provide electric commodity supply of 14,000 GWh or 48% of delivery load
- 10,000 GWh or 71% of total commodity supply is for “mass market” (residential & small commercial) customers



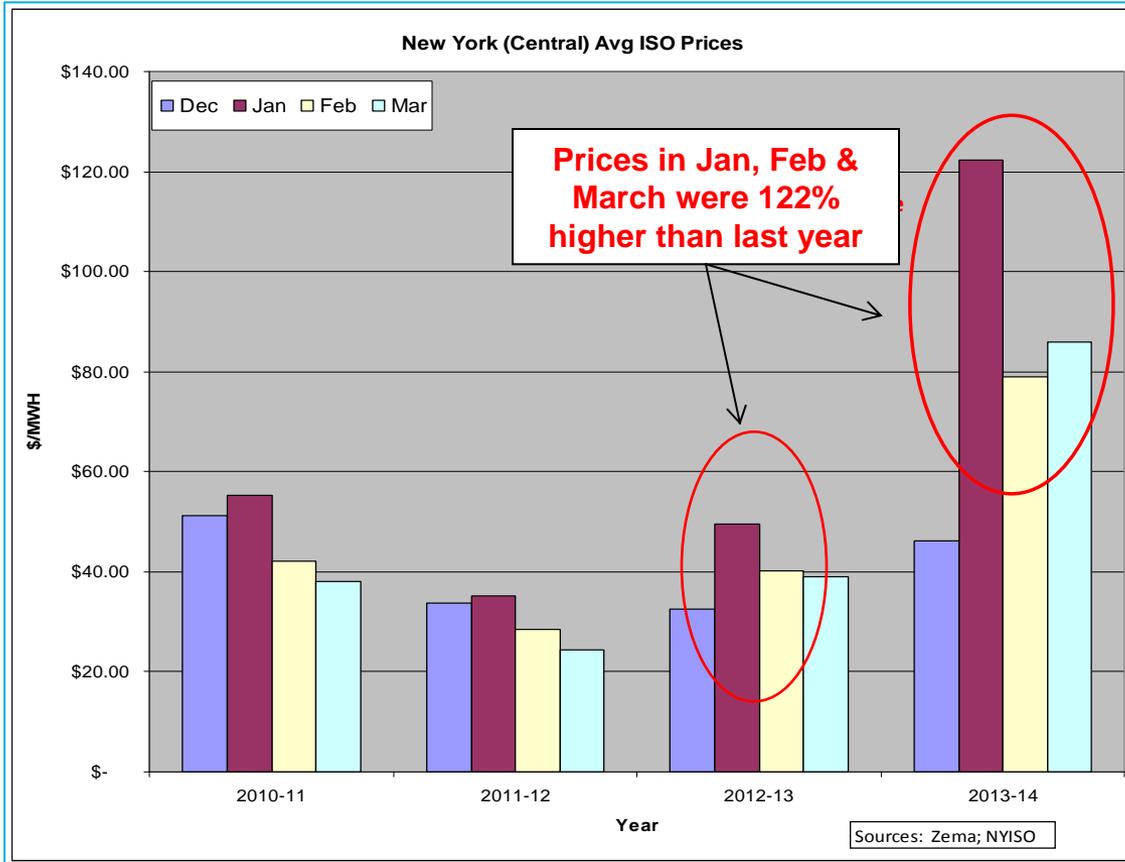
Overview of Electric Supply Portfolio and Hedging

- Hedging Strategy Objective:
 - To effectively mitigate electric price volatility for mass market customers and send accurate market price signals to encourage efficient energy usage
- Hedging Methodology:
 - Hedge energy and capacity with fixed price contracts and options using a systematic dollar-cost averaging / laddering & layering approach
 - Annual Hedge Target averages 55%; incorporates monthly shaping to allow higher hedge percentages during volatile peak load/price months (like Jan/Feb)
 - Continual review and analysis of portfolio risks and hedge results
- Portfolio Management:
 - Use various portfolio analytical tools to efficiently manage customer commodity rate volatility, while minimizing overall supply costs
 - Monte Carlo simulations are performed to examine the impacts of supply costs and rates through scenario analysis of market prices, zonal congestion, customer loads and types of hedges
 - Analysis provides the basis for the Company's monthly hedge execution plans, as well as the longer-term strategy

Overview of Electric Commodity Rate Mechanisms

- Current commodity rate mechanisms went into effect in January 2012
- “Mass market” customers (residential and small commercial) in each zone receive a fixed monthly retail commodity rate, based upon a forecast
- The monthly retail commodity rate has several components:
 - Electricity Supply Cost (“ESC”): A fixed price monthly market signal is sent through this zonal rate to encourage efficient energy use
 - New Hedge Adjustment (“NHA”): A socialized credit/charge across all zones of contribution of the hedge strategy that offsets the market volatility in the ESC
 - Reconciliations: These components “true-up” the difference between forecasted and actual costs on a two-month lag basis

Increase in Winter Electric Wholesale Prices across NYS

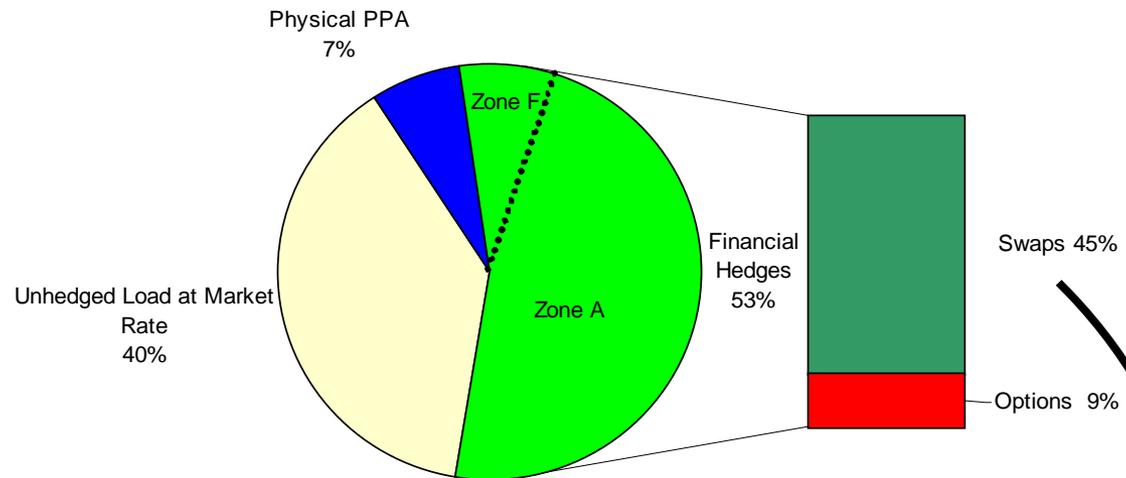


- Wholesale electricity prices saw a significant increase this past winter across NYS
- Zone C Day-Ahead market prices increased 122% over last year
- Zone F market prices rose 93%, while Zone A increased 116% over last year

Winter Electric Supply Portfolio and Hedge Benefits

- Peak winter months (Jan/Feb) were hedged at 60% of forecasted mass market customer sales
- Winter 2013-14 compared to previous year:
 - Increased overall hedge level by 5%
 - Increase in Zone F hedge level to 30% of Zone F forecasted sales
- Winter supply portfolio components
 - NYISO market purchases
 - Physical contracts
 - Financial hedges

National Grid Overall Winter RTC Position

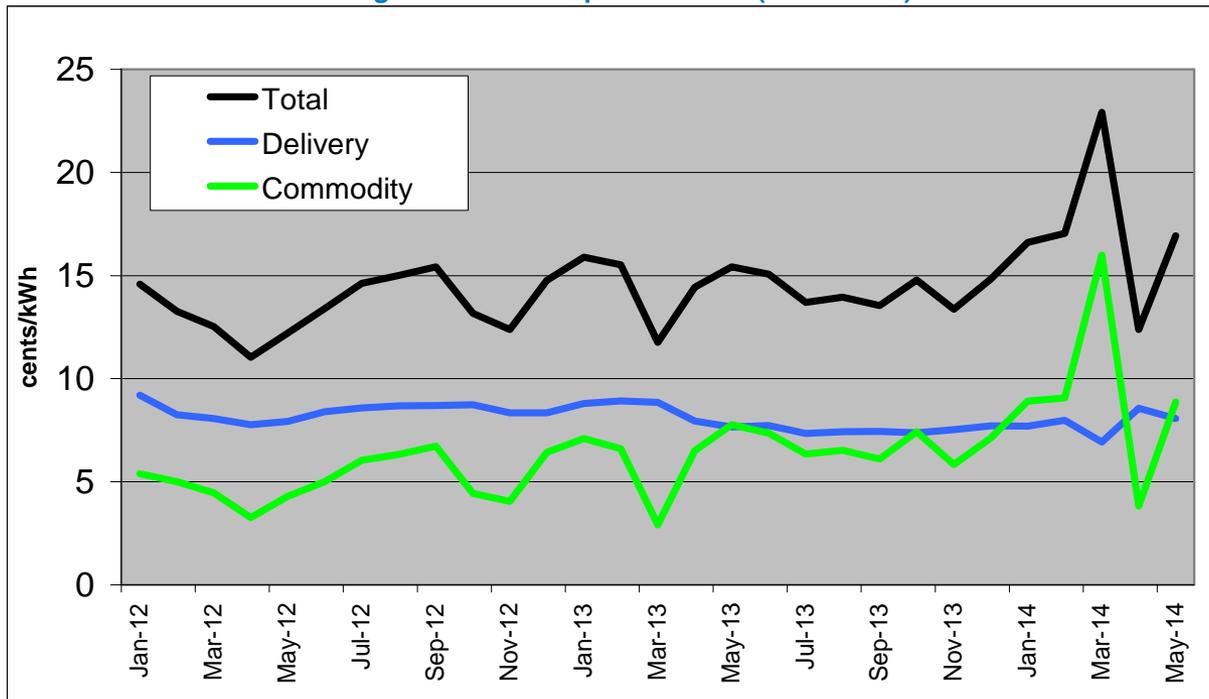


Hedges for Jan/Feb resulted in \$64 million of savings for mass market customers

Winter Impact on Rates - Total Bill Volatility

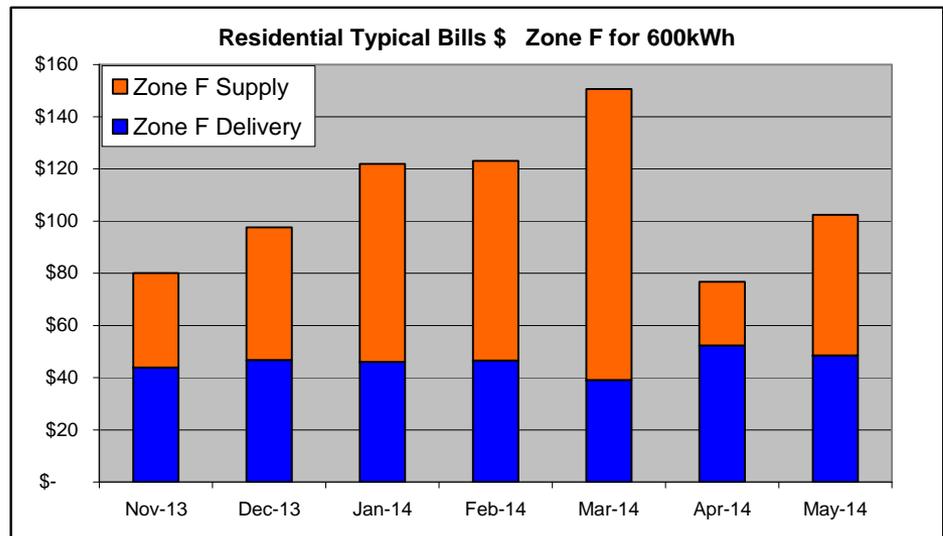
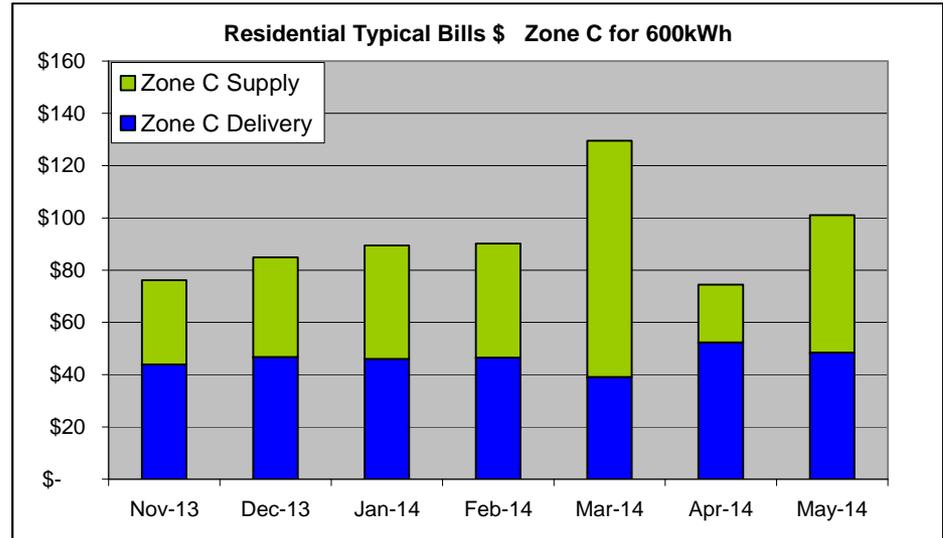
- Total bill volatility has been mainly caused by monthly supply prices which move with market prices
- This winter's dramatic market price increase caused a significant rise in total typical bill rates; these rates were compounded by reconciliations due to actual market price variances from forecasted prices

Average Rates in All Upstate Zones (cents/KWh)



Impact on Residential Typical Bills

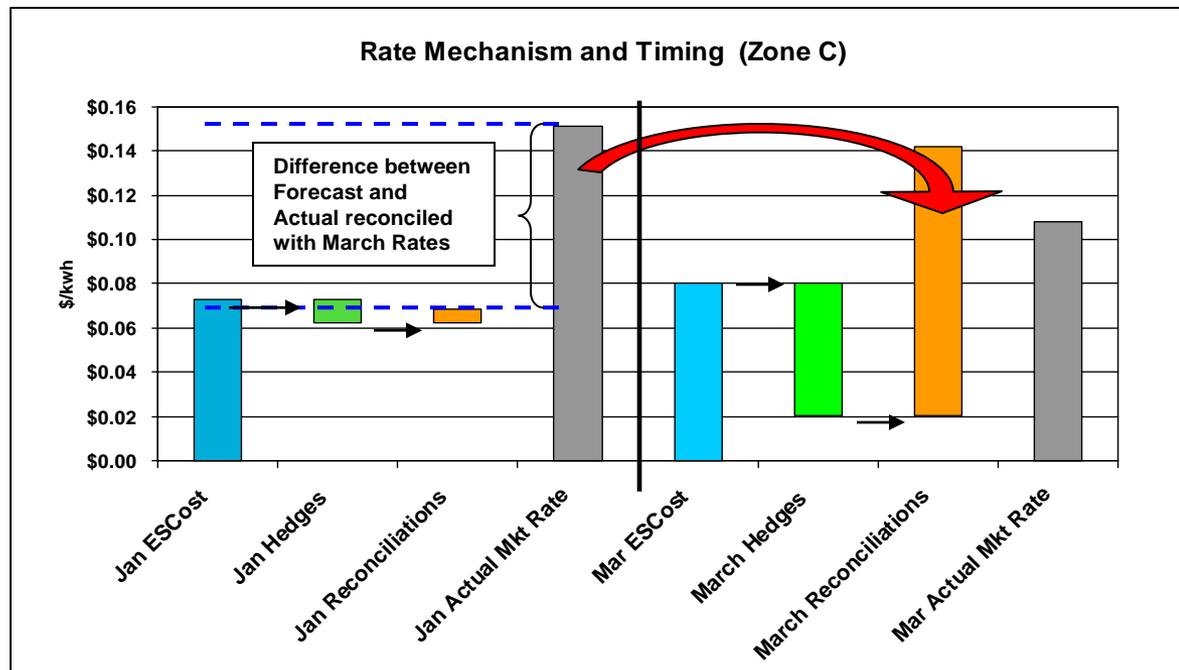
- Winter typical bill graphs show significant increase in supply costs
- Socialization of hedges: \$64 million in Jan/Feb benefits was credited to customers across several months
- Reconciliation of actual market prices vs forecast price causes volatility on two-month lag; reconciliation of January costs impacts March rates
- Socialization of reconciliations mutes actual impacts to zones
- \$32 million was deferred from February bills to maintain total bill rates equal to January bills



Mechanics of the Commodity Rate Mechanisms

January actual supply prices impacted March residential electricity bills

- Monthly supply prices are forecasted prior to the billing month
- Forecasts that are too high or too low are credited or charged to customer bills on a two-month lag
- Because January's actual supply prices were significantly higher than forecasted, the difference was collected in March bills (two-month lag)
- A residential customer in Zone C using 600 kWh in March saw a 44% total bill increase when compared to February's electricity bill



Observations from this Winter

- Extremely cold temperatures contributed to significantly higher fuel costs (specifically natural gas) for electric generators
 - High natural gas prices drove increase in power prices across all zones
 - Compounded by the Central-East transmission congestion that impacted Zone F
- Forecasted market prices can significantly contribute to customer bill volatility since difference from actual prices is reconciled on two-month lag
- A socialized reconciliation of the forecast error can also cause volatility in the incorrect zone
- Zone F's congestion component in market prices has become very volatile in the winter months, resulting in exposure to Zone F customers
- The hedges executed for the portfolio resulted in savings for mass market customers of \$86 million (November 2013 through March 2014)
 - However, per tariff design, the rate mechanisms socialized these savings across Zones A through F, and thus the hedges were not as effective to protect Zone F

Preparing for Next Winter and Beyond

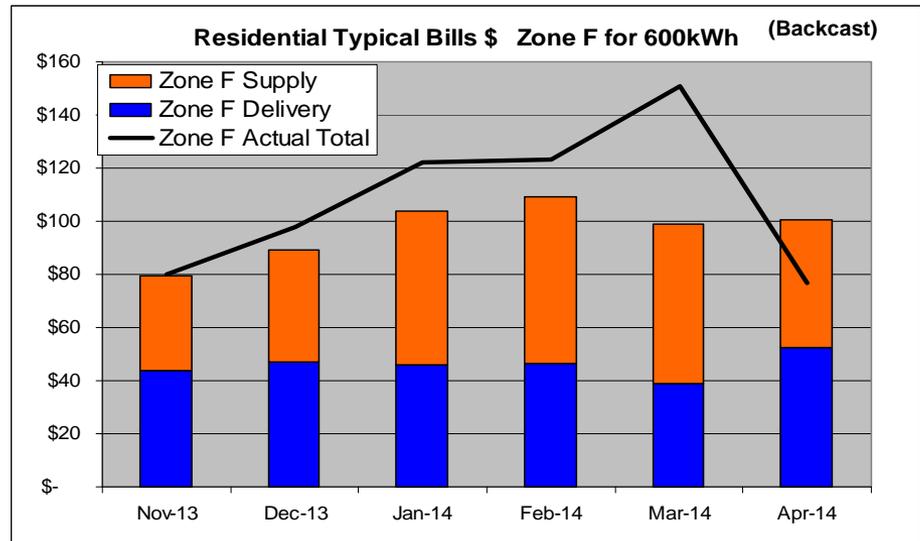
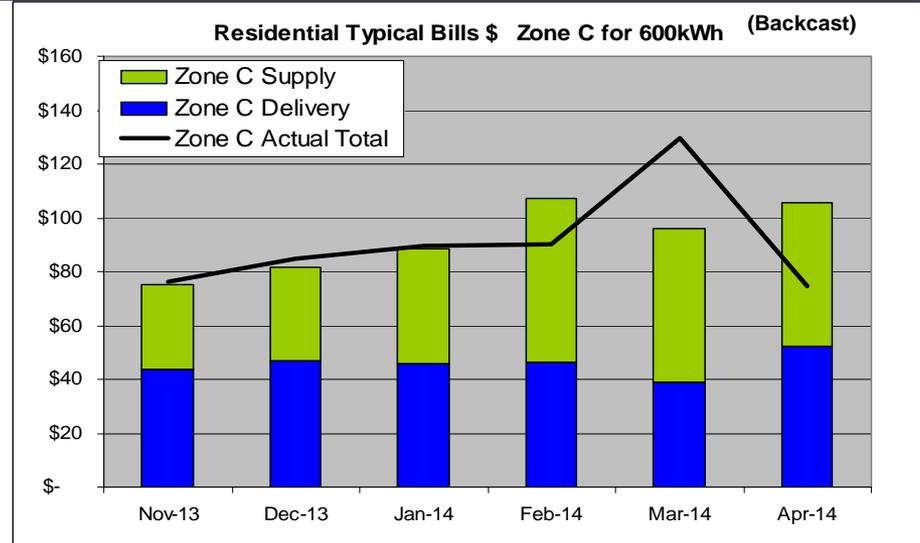
- National Grid is concerned about next winter's prices since natural gas and electric transmission constraints continue to exist
- National Grid proposed to modify its commodity rate mechanisms and will enhance its hedging strategy to further mitigate price volatility and commodity rate increases
 - Enhancements to supply portfolio hedging
 - Separate portfolio for Zone F and Zonal Region A-E allows for a better alignment of hedges and reconciliations with customers in the zone
 - Modifications to retail commodity rate mechanisms
 - In addition to zonal market rates, provide zonal hedging rates so hedging benefits are effectively attributed to specific regions (Zone F and Zonal Region A-E)
 - Region-specific flexibility of delaying reconciliation recovery so that rate impacts can be mitigated in the case of extreme market increases
- With these changes, the new zonal hedge rates (zonal NHA) will allow benefits of separate hedge portfolios to be effective in reducing customers' monthly supply cost volatility in all zones

Backcast Analysis

Results of Impact on Typical Bills

- A backcast analysis was performed on actual data
 - Analyzed separate supply portfolio and zonal hedge rates for Zone F and Region A-E, in addition to a revised tariff provision to allow flexible reconciliation recovery

- Customers in Zone F could have benefited by a 32% reduction in retail supply costs in January through March 2014



Winter's Impact: Record-Breaking Cold and Energy Bills

- One of the coldest winters on record has resulted in increased demand for and cost of energy supply
- We've suffered through prolonged, extremely cold temperatures
 - January temperatures were as much as 25 degrees below normal
 - March saw temperatures up to 23 degrees below normal
- Volatility in weather resulted in volatility in wholesale electricity prices and a swinging impact on monthly bills
- Higher bills are challenging and, in some cases, a hardship
- It was important for National Grid to reach out to all its stakeholders, focus on the winter impact on bills, and provide transparency on the issues
- National Grid has taken steps to mitigate the increases for our customers



National Grid Takes Action to Help Customers

- **Consumer Advocacy/Low-Income Outreach:** Our Consumer Advocates handled unprecedented high volume of customer referrals; hosted webinars; provided one-on-one assistance and counseling; partnered with key social service agencies to ensure customers have access to all available resources
 - Offering first-of-its-kind Customer Assistance Expositions to connect customers with all low-income organizations in single location -- DSS, HEAP, SNAP, Office of the Aging, NYSERDA, CNY Food Bank, Catholic Charities, Literacy CNY and Syracuse Educational Opportunity Center
- **Credit & Collections Programs:** Increased outbound phone calls to offer payment agreements and budget plan to avoid suspension of service; training to phone reps on 'soft skills'; updated procedures and training to promote budget billing
- **Payment Options:** Heavily promoting a variety of options including our Budget Plan, which lets customers spread out high winter bills over the course of a year
- **Energy Efficiency:** From simple no-cost tips to more comprehensive programs, we offer energy saving solutions to match individual needs



National Grid Takes Action to Help Customers (cont'd)

- **Hedging Strategies:** National Grid hedges electricity prices for mass market customers by locking in prices at different times (dollar cost averaging) to help reduce electricity supply price volatility
- **Deferral:** Took unprecedented step of deferring a 20-30 percent electricity supply price increase in February; temporary \$32 million credit for residential and small commercial customers helped stabilize energy costs

National Grid Emergency Customer Care Program

- Corporate contribution of \$1 million to reopen Care and Share to provide grants of up to \$250 to 4,000 low-income electric customers who are facing disconnection
- One-time emergency payments applied to May bills for low-income customers:
 - Incremental arrears forgiveness of \$250 to 4,000 customers enrolled in AffordAbility program (\$1 million)
 - Bill credit of \$20 for 110,000 low income customers to mitigate high winter electric commodity bills (\$2.2 million)
- Targeted outreach to low-income customers and community service agencies
 - Customer Assistance Expo
 - Advocates meeting with low-income partners and agencies across upstate NY



Consistent Customer Outreach

nationalgrid
HERE WITH YOU. HERE FOR YOU.

Help with Winter Bills

We are suffering through one of the coldest winters on record, and this has had a direct impact on energy bills. At National Grid, we want to do everything we can to help you through this tough winter.

Please stop by

Tuesday, March 4, 2014
9:00 am - 4:00 pm
Bethesda House
634 State Street
Schenectady, NY 12307

Consumer Advocates will be available to help you with billing questions and payment options.

Help with Winter Bills

We are suffering through one of the coldest winters on record, and this has had a direct impact on energy bills. At National Grid, we want to do everything we can to help you through this tough winter.

TOP 10 WAYS TO DECREASE YOUR UTILITY BILL:

1. Insulate walls, ceilings and windows where you can.
2. Choose the right lights: Using five Compact Fluorescent Lights (CFLs) can save you \$9 per month.
3. Limit the use of space heaters: Used for 12 hours a day, they can cost up to \$60 per month.
4. Switch to ENERGY STAR® appliances: They use up to 40 percent less energy than conventional models sold before 2001.
5. Think before you wash and dry clothes. Dry only full loads of laundry and use the cold water setting on the washer.
6. Upgrade electronics. Turn off computer at night and save up to \$10 per month.
7. Lower your thermostat when you're asleep or away. A 3-5 degree adjustment can save up to 16 percent a year on your heating and cooling bills!
8. Change furnace filters. Change every month to save on energy costs and extend the life of your investment.

The Budget Plan Spreads Out Payments
Cold weather and increased energy use mean higher bills this winter. National Grid is already taking steps to lessen the impact of high commodity prices on customer bills this winter. We also offer a Budget Plan which makes it easier to manage your energy payments by taking the seasonal "peaks and valleys" and spreading your projected use into monthly balanced payments. You still pay for the amount you use — no more or less — but your usage is divided into 12 monthly payments. Enrolling is easy!
To sign up visit www.ngrid.com/nybudgetplan.

Help with winter bills

We know this very cold winter has been very challenging for you. Before we begin programs and services to help you during this difficult time.

Billings and payment options

Our payment options provide easy ways to pay and manage your energy bill.

Understand my bill and rates

This information will help you understand your bill and the rates you are charged.

My usage and cost graphs

Personal record breaking cold temperatures have substantially increased fuel supply prices for electricity and gas, resulting in customer bills.

Help with winter bills

National Grid will defer electricity supply increases due to unusually cold weather this season.

Energy efficiency services

Using energy efficiently pays off. The ability to lower your energy bills is in your hands. Find up and advice that can help you use energy wisely.

Learn more ways to lower my bill

Discover of items on your bill
Unexplained my bill
Bill credits

Coping With High Winter Bills

All of us across New York are suffering through one of the coldest winters on record. We're using more gas and electricity, so we stay warmer and keep warm, and the rate we pay for these fuels has increased dramatically. We know the higher energy bills you're seeing are very challenging for you. That's why National Grid asked for and received approval from the NY Public Service Commission to take a February increase in electricity supply costs provide you with some immediate relief. We also offer a variety of programs and services that can help you manage your energy costs, including:

- Payment Options** - We have a variety of options including our Budget Plan which lets you spread out your high winter bills over the course of a year.
- Financial Assistance** - We have consumer advocacy programs to help low-income eligible customers pay their bill.
- Energy Efficiency** - From simple no-cost tips to more comprehensive programs we have the energy saving solution to match your individual needs.

We encourage you to take advantage of these programs during this very difficult time. To learn more go to www.ngrid.com/nybudgetplan or visit www.ngrid.com. Thank you.

Record-breaking cold and your electricity bill.

Here in New York we have all suffered through one of the coldest winters on record, and this has directly impacted our energy bills.

We'd like to take this opportunity to explain what is changing these prices and offer some ways to help manage your energy costs.

What's behind the higher bills?

1. Higher electricity and natural gas supply prices in the marketplace; and
2. Increased energy consumption by homes and businesses.

The "supply" portion of your bill.
Energy supply prices are set by the market, not National Grid. If we purchase energy — either gas, electricity or both — on your behalf, we pass on those costs directly without a markup.

The "delivery" portion of your bill.
Delivery charges cover our costs to operate and maintain our distribution system and are based by regulatory rate agreements. While the electric delivery portion of your bill has decreased slightly over the years, it will fluctuate based on the amount of energy you consume. National Grid does make a profit on the delivery of gas and electricity.

How we can help.
While we can't control supply prices, we have taken action to minimize how they affect your bill by:

- Using gas and electricity hedging strategies to reduce price spikes, and
- Deferring a \$20 million increase in February electricity supply prices for upstate New York residential and small business customers and spreading the costs out to summer months when your bills are typically less.

Help with Winter Bills

Budget Plan spreads out payments

Cold weather and increased energy use mean higher bills this winter. National Grid is already taking steps to lessen the impact of high commodity prices on customer bills this winter.

Need more help?
We also offer a Budget Plan which makes it easier to manage your energy payments by taking the seasonal "peaks and valleys" and spreading your projected use into monthly balanced payments. You still pay for the amount you use — no more or less — but your usage is divided into 12 monthly payments. Enrolling is easy!

To sign up visit www.ngrid.com/nybudgetplan

ACCOUNT NUMBER: 05137-62100		BILL DATE: Mar 16, 2014	
Basic Service Charge (including 8.0 thermal)			
Heat/Hot Water	0.0389	47 thermal	
Overhead/THS Charge	0.0688	177 thermal	
Adjustment for Change from Normal Weather	-0.0788		
Delivery Service Allow.	0.0078	201 thermal	
System Service Charge	0.0024	201 thermal	
Our Size Assessment	0.0024	201 thermal	
Fuel Surcharge	2.2492		
Total Gas Delivery			
Electricity Supply			
Electricity Supply	0.1189	1874 kWh	
Market Function	0.008888	1874 kWh	
Energy	-0.0888	1874 kWh	
Total Electricity Supply			
Our Supply			
From National Grid			
Gas Supply	0.440827	201 thermal	
Market Function	0.02112	201 thermal	
Total Gas Supply			
Total Supply Services			
Other Charges/Adjustments			
Financial Billing Credit			
Net Monthly Charges			
Total Other Charges/Adjustments			
For Your Information			
The amount of the financial billing credit included in the "Delivery Service" portion of your bill depends on whether a financial billing credit may be included. Contact us at www.ngrid.com for more information.			
Billing			
Next Billing Period:			

News

FOR IMMEDIATE RELEASE
January 29, 2014

Contact: Patricia Fazio
618-433-3833

NATIONAL GRID TO DEFER ELECTRICITY SUPPLY INCREASE DUE TO UNUSUALLY COLD WINTER SEASON

NY Public Service Commission approves emergency plan to help mitigate increase in February commodity costs on National Grid upstate NY bills

Customers Encouraged to Enroll in Balanced Billing Option

January 29, 2014 - www.ngrid.com has received and received approval to defer upcoming increases in electricity supply prices for upstate New York residential and small business customers. The approval will help the company address electricity customers' better manage their energy costs during an unusually cold winter season.

Costs for electricity supply — the actual energy itself — for upstate New York have increased substantially in the past few months due to colder-than-normal weather conditions and dramatic rises in the cost of natural gas that fuels many electricity-generating stations. These increases, coupled with much higher-than-typical usage, prompted the company to take action to help stabilize energy costs for its customers.

As a result of this approval the electricity supply increases for February that would have increased total bills approximately 20 to 30 percent will be deferred for recovery in future months. Additionally, the company is encouraging customers to further mitigate the impact of high supply prices by enrolling in the budget billing program, which will spread high winter bills over the course of a year. There is no cost to enroll in the budget billing plan.

National Grid does not control or set the cost of electricity or natural gas supply, but purchases the commodity on behalf of its customers and passes that cost on directly without markup. Even the

News

FOR IMMEDIATE RELEASE
March 4, 2014

Contact: Dave Broy
716-537-7144
Patricia Fazio
618-433-3833
Virginia Linnartz
315-457-7700

NATIONAL GRID OFFERS IT'S UPSTATE NEW YORK CUSTOMERS HELPFUL TIPS TO MANAGE ENERGY USAGE AND WINTER BILLS

MARCH 4, 2014 - One of the coldest winters on record continues to grip across New York, and this has had a direct impact on energy bills. At www.ngrid.com, we want to do everything we can to help our upstate New York customers through this tough winter.

Involving and encouraging customers to take steps to lessen their homes and businesses' more energy efficient and better manage their energy bills. While functions may be working harder, these tips can help to save energy and money.

Top 10 Ways to Decrease Your Utility Bill:

- Insulate walls, ceilings and windows where you can.
- Choose the right lights: Using five Compact Fluorescent Lights (CFLs) can save you \$9 per month.
- Limit the use of space heaters: Used for 12 hours a day, they can cost up to \$60 per month.
- Switch to ENERGY STAR® appliances: They use up to 40 percent less energy than conventional models sold before 2001.
- Think before you wash and dry clothes. Dry only full loads of laundry and use the cold water setting on the washer.
- Upgrade electronics. Turn off computer at night and save up to \$10 per month.

Flyers, brochures & Social Media

Bill Messages

NationalGrid.com

Customer emails

Press Releases

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