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
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.

Prices in Jan, Feb & March were 122% higher than 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

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.

![Graph showing 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.

![Graph for Zone C](chart1.png)

![Graph for Zone F](chart2.png)
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
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.
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
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

Help with Winter Bills

Flyers, brochures & Social Media

Bill Messages

Press Releases

Customer emails
Review of Electric Portfolio Hedging and Commodity Rate Mechanisms