



Energy Efficiency: A Cost-Effective Approach to a Cleaner Future

Central Hudson

About Central Hudson



309,000

electric customers

84,000

natural gas customers



9,400

miles of transmission
& distribution lines



1,452

miles of transmission
& distribution pipelines

Regional Study Findings

AFFORDABILITY

Median income is not keeping pace with the cost of living

✓ *Housing*

✓ *Food*

✓ *Transportation*

✓ *Child Care*

✓ *Medical*

✓ *Taxes*



31 percent of households in the Mid-Hudson Valley are considered working poor, according to the United Way

New York State Green New Deal Goals

70%

Electric generation from renewable energy sources by 2030

100%

Electric generation of electricity from zero emission resources by 2040

-40%

Reduction in **greenhouse gas emissions** by 2030

-85%

Reduction in **greenhouse gas emissions** by 2050



6,000 MW of solar by 2025



3,000 MW of storage by 2030

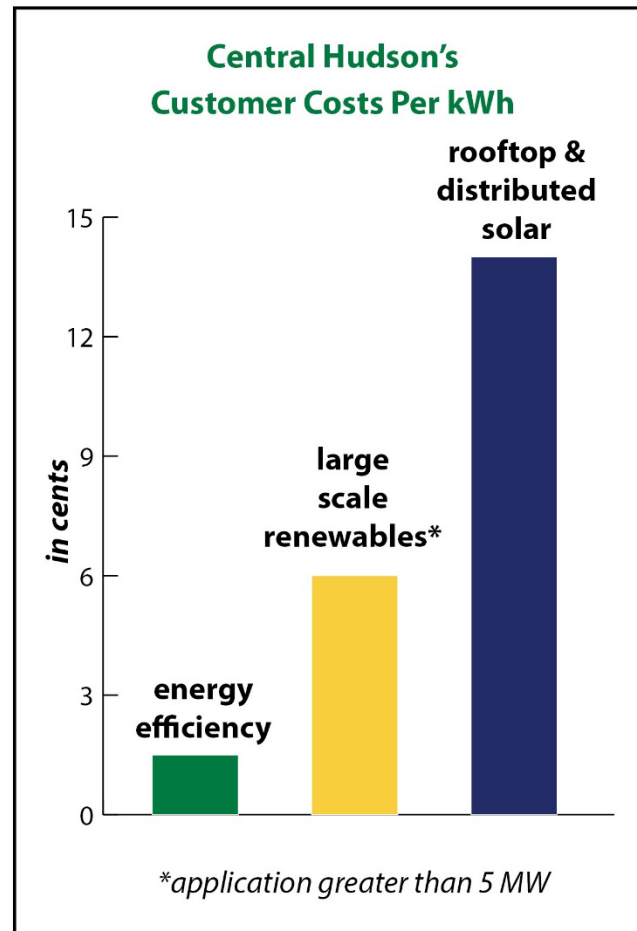


9,000 MW of off-shore wind by 2035

The bill sets greenhouse gas emissions baseline as 1990 emissions.

Energy Efficiency

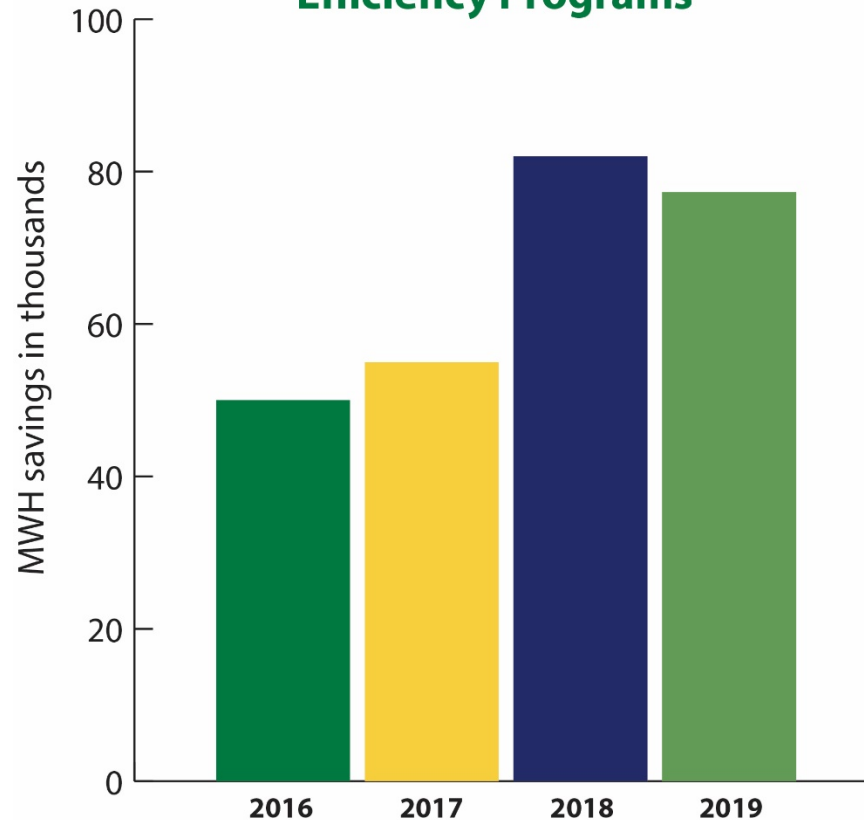
The most cost-effective approach to reduce energy use in support of New York State goals



Energy Efficiency Programs

Central Hudson has significantly ramped up its energy efficiency programs in response to the state's energy objectives.

Central Hudson's Energy Efficiency Programs



Central Hudson's portfolio of programs and incentives to help residential customers reduce energy use and protect the environment include:



Rebates on Energy-Efficient Products Online



Rebates on Energy-Efficient Products in Local Retailers



Behavioral Insights



Rebates on Heating Equipment and Heat Pumps



Recycling Program

Sealed

Home Energy Audits



Electric Vehicles



Energy Calculators



CenHub Peak Perks

Incentives Available for High Efficiency Natural Gas Heating Equipment



Get up to \$1,000 back on combi-boilers, up to \$675 back on furnaces and \$250 back on indirect water heaters

Incentives Offered To Reduce Emissions Through Electrification



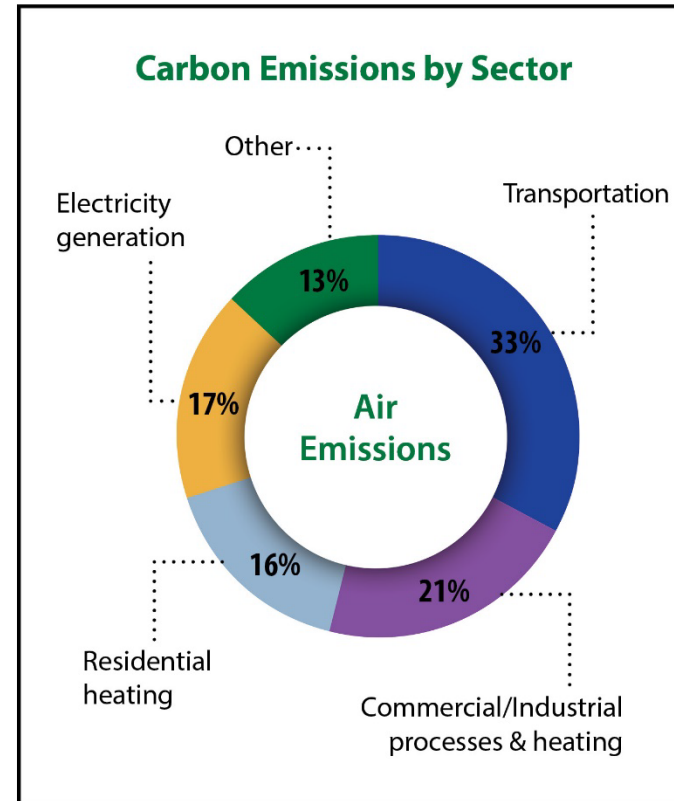
Electric Heat Pump Water Heaters



Air-Source Heat Pumps



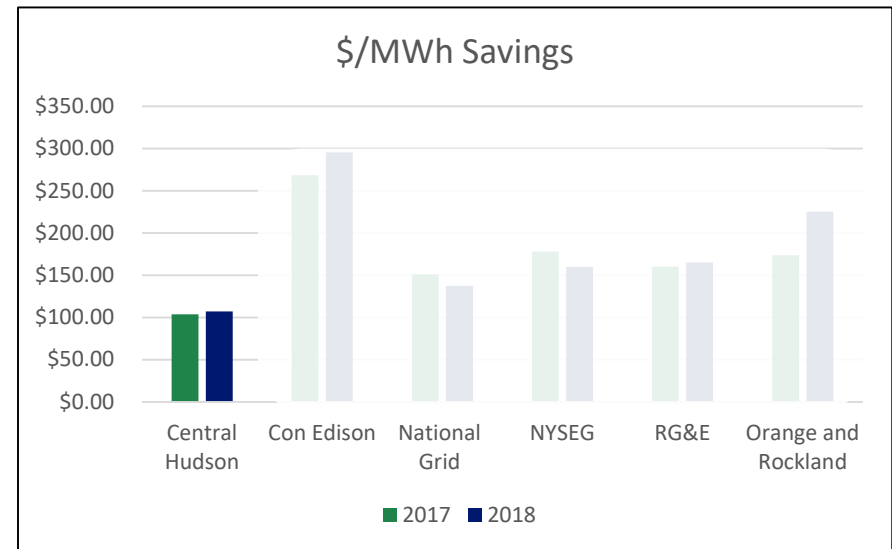
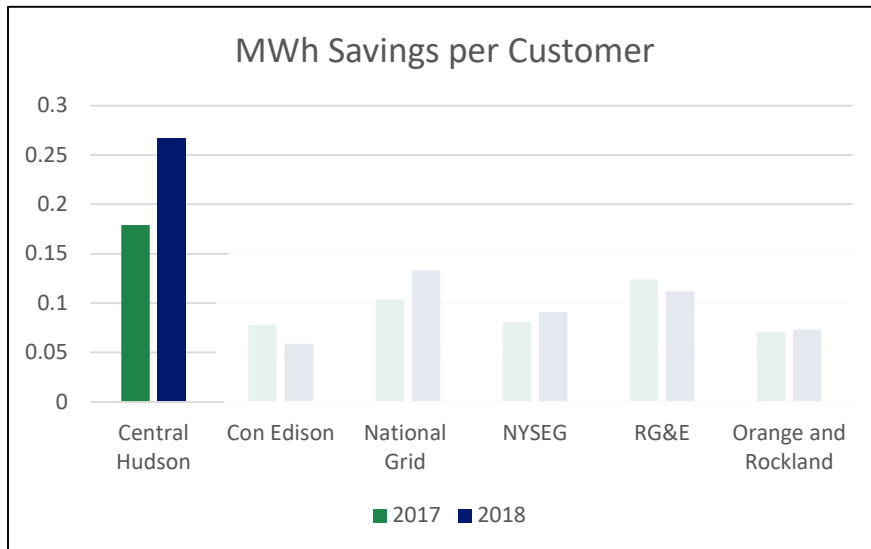
Geothermal Heat Pumps



Energy Efficiency Benchmarking

Key Findings: Electric

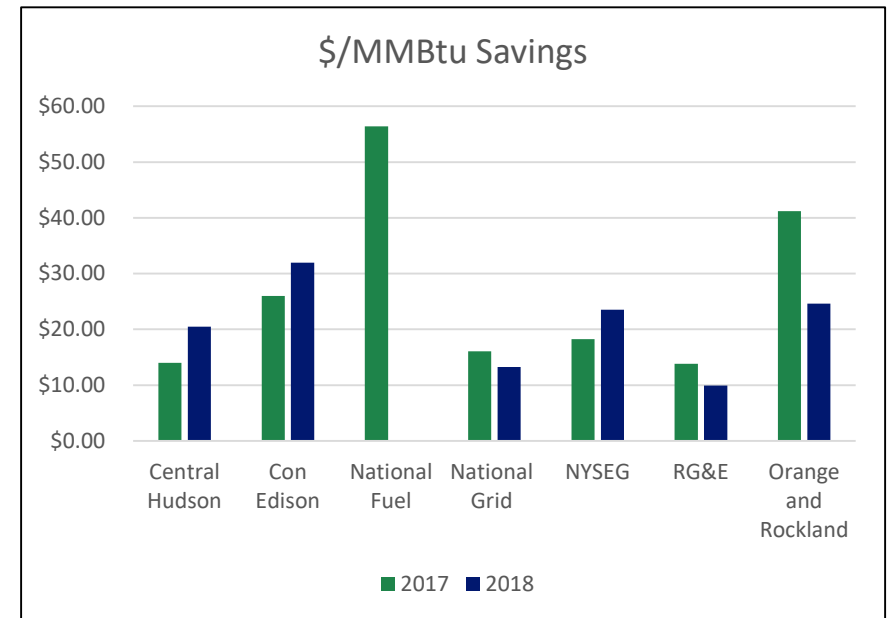
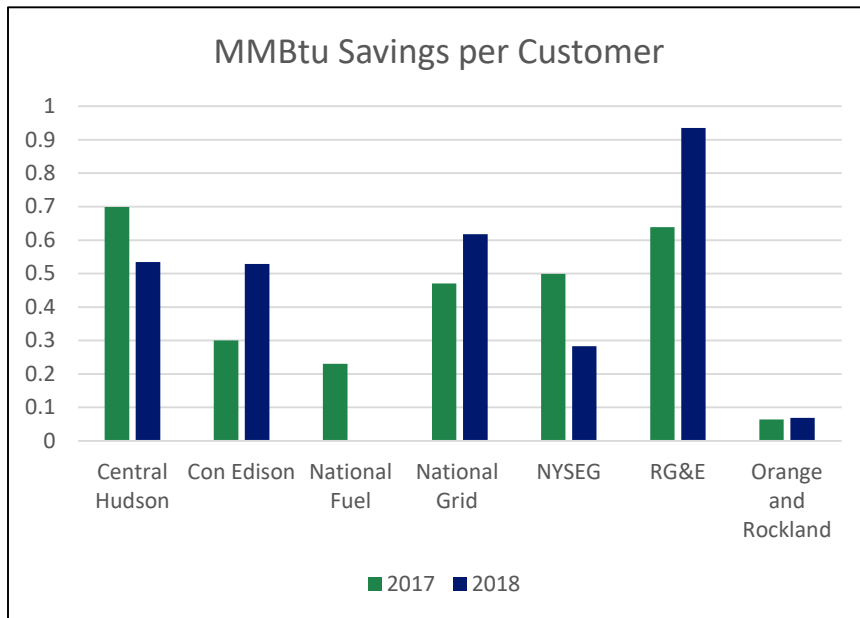
- Central Hudson had the highest MWh savings per customer in 2017 and 2018 among all the utilities in New York State.
- Central Hudson had the lowest cost/MWh savings in 2017 and 2018.



Energy Efficiency Benchmarking

Key Findings: Gas

- Central Hudson had the highest MMBtu savings per customer in 2017. The company's MMBtu savings per customer were approximately equal to the average in 2018.
- Central Hudson had the lowest cost/MMBtu savings in 2017. The company's cost/MMBtu savings was approximately equal to the average in 2018.



Distributed Energy Resource Utilization Metric

The DER Utilization metric is calculated as follows:

**DER Utilization (MWh) =
Community PV MWh annualized production**

- + Combined heat and power (“CHP”) MWh annualized production
- + Fuel cell MWh annualized production
- + Battery storage MWh annualized discharge
- + Battery storage MWh annualized charging

2019 DER Utilization Target:

DER Utilization (MWh)	6,612
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Actual YTD Results through 12/31/19

DER Utilization (MWh)	38,105
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New York State Clean Energy Initiatives

Costs to Electric Customers 2006-2025

Program	State	Central Hudson
Zero Emissions Credits	\$5,013,087,000	\$92,244,000
Renewable Energy Credits	\$1,362,882,000	\$25,465,000
System Benefits Charge*	\$1,220,718,000	\$48,984,000
Renewable Portfolio Standard*	\$1,540,669,000	\$79,622,000
Energy Efficiency Portfolio*	\$1,979,636,000	\$102,813,000
Clean Energy Fund	\$3,404,506,000	\$185,486,000
NY-Sun	\$943,773,000	\$51,419,000
NY Green Bank	\$742,190,000	\$40,436,000
Utility Energy Efficiency	\$2,994,641,000	\$112,474,000
Net Metering	\$1,038,851,000	\$101,500,000
Community Distributed Generation	\$410,858,000	\$56,892,000
Offshore Wind	pending	pending
Energy Storage	pending	pending
Total	\$20,651,811,000	\$897,335,000

* Previously authorized amounts for these programs for years 2016 and forward were reallocated to the Clean Energy Fund, NY-Sun and NY Green Bank with the establishment of the Clean Energy Fund Framework in January 2016.

Next Steps: What is Central Hudson Doing?



600,000 LEDs distributed annually through the Residential Lighting Program through 2025



Achieve savings of 442 million kWh with high efficiency equipment rebates through 2025



15,000 heat pumps to be installed by 2025 at an annual rate 376% higher than 2018



40% increase in energy efficiency targets by 2025



9,300 solar installations interconnected with 350 more proposed



Working to add **750 residential and 150 commercial gas customers** annually