



# Your Energy Audit



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## Home

Sample Job  
123 Main st  
Albany, NY 12203  
(555) 555-1234  
name@gmail.com

## Audit Date

Jan 23, 2020  
12:00 PM

## Audited By

**Paul Mendel**  
info@  
truebuildingperformance.com

## True Building Performance

Po Box 3041  
Albany, NY 12203  
Office 518-300-3998



**Thank you again for choosing True Building Performance to do your energy Audit!**

**Please let us know if you have any questions on the report or are interested in any detailed estimates.**

Some items may have dollar amounts attached to them just to show you estimated savings from making that type of upgrade and are not necessarily quotes/estimates/recommendations.

## Inside Your Report

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# Solutions for Your Home

Call us today to ask a question or discuss the next step!

## Totals

### Cost

\$ 15,664.00

### Estimated Savings

\$188 per year

This is an estimate of how much you could save starting in Year 1. Savings will only increase as energy prices rise over the years.

### Savings to Investment Ratio\*

For Package: 0.2

### Impact of upgrades

Energy Reduction	15%
Carbon (CO2) Savings	1 tons
Equivalent cars removed from the road	0.2/yr

DETAILS	INSTALLED COST	APPROXIMATE ANNUAL SAVINGS	SIR *
Insulate Attic	\$ 4,298.00	\$ 83	0.6
Seal Air Leaks	\$ 0	\$ 67	100
Whole House Fan Removal	\$ 400.00		
Basement Rimjoists	\$ 1,216.00	\$ -116	0
Upgrade Heating System	\$ 9,750.00	\$ 121	0.2
Upgrade Water Heater	\$ 0	\$ 32	100

\* SIR is the Savings to Investment Ratio. Simply put, if the SIR is 1 or greater, then the energy savings from the item will pay for itself before it needs to be replaced again. This metric is used to help prioritize the recommendations by financial merit.

# Insulate Attic

ATTIC

**Installed cost**

\$4,298

**Energy Savings**

Approx. \$83

**Savings to Investment Ratio**

0.6

**Why it matters**

Adding insulation to your attic can lead to a significant reduction in your utility bills. This process is often combined with careful air sealing of the ceiling from the attic side to ensure the new insulation perform at its maximum level.



## Notes to Homeowners

The attic is poorly insulated with 6 inch fiberglass batts in poor condition. Savings reflect adding 10 to 12 inches of cellulose after appropriate air sealing and baffling is completed for an r value of 50.

## Now & Goal

DETAILS	NOW	GOAL
<b>Attic</b>		
<b>Attic 1</b>		
Modeled Area	1228 ft <sup>2</sup>	1228 ft <sup>2</sup>
Insulation	12.5 R Value	49 R Value
Radiant Barrier?	No	No
Has Knee Wall?	No	No
Cool Roof?	No	No



# Seal Air Leaks

## AIR LEAKAGE

### Installed cost

\$0

### Energy Savings

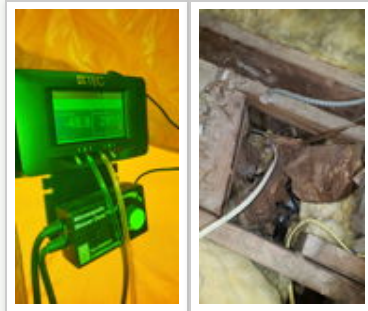
Approx. \$67

### Savings to Investment Ratio

100

### Why it matters

Air sealing is typically the most cost effective improvement you can make to your home. To properly seal out air leaks, a large fan called a blower door is used to depressurize your house. This makes air leaks easy to find, so corrective measures can be taken. A good air sealing job will dramatically increase the comfort of your home and help you save significant energy.



## Notes to Homeowners

A blower door test was performed at your home to determine the amount of air leakage the home has. The results of this test were 2915 CFM50 and the building airflow standard for your home is 2177 CFM50. Savings reflect air sealing all top plates, penetrations, and drop soffits like the one in the picture. The whole house fan located in the hallway needs to be removed and drywall hung to complete the air barrier needed to obtain this number. After completing the air barrier, the attic can be properly insulated to bring the attic to an r50.

## Now & Goal

DETAILS	NOW	GOAL
<b>Air Leakage</b>		
Blower Door Test Performed	Tested	Estimate
Blower Door Reading	2915 CFM50	2177 CFM50
Conditioned Air Volume	19648 ft <sup>3</sup>	
Wind Zone	2	
N-Factor	14.99	
Equivalent NACH	0.59 NACH	0.44 NACH
Effective Leakage Area	163.78 in <sup>2</sup>	122.31 in <sup>2</sup>
Equivalent ACH50	8.9 ACH50	6.65 ACH50
Kitchen Fan		
Bathroom Fan 1		
ASHRAE 62.2 Required mechanical ventilation rate	N/A CFM	N/A CFM



...CONTINUED

# Seal Air Leaks

DETAILS	NOW	GOAL
<b>Air Leakage</b>		
Minimum CFM50		1919 CFM50

## AIR LEAKAGE

### Installed cost

\$0

### Energy Savings

Approx. \$67

### Savings to Investment Ratio

100

### Why it matters

Air sealing is typically the most cost effective improvement you can make to your home. To properly seal out air leaks, a large fan called a blower door is used to depressurize your house. This makes air leaks easy to find, so corrective measures can be taken. A good air sealing job will dramatically increase the comfort of your home and help you save significant energy.

SAMPLE

# Whole House Fan Removal

CUSTOM MEASURE

Installed cost

\$400

Why it matters



## Notes to Homeowners

Whole house fan located in the hallway which is the equivalent 4 square foot hole in the ceiling allowing heat to escape into the attic. This vent should be removed and replace with sheetrock with a single coat of mud, for an improved thermal boundary

SAMPLE

# Basement Rimjoists

## BASEMENT

### Installed cost

\$1,216

### Energy Savings

Approx. \$-116

### Savings to Investment Ratio

0

### Why it matters

Insulating your basement walls will increase the overall temperature of your basement and make the floors above more comfortable. A fiberglass blanket with a vinyl backing can be installed along the basement walls. Or the walls can be framed out, insulated, and finished with drywall to make a "finished basement".



## Notes to Homeowners

The basement is a walk out basement in the back and framed to be finished. There was a few areas with fiberglass in very poor condition in the rim joists and no insulation on the foundation walls.

Recommend spraying 2" of closed cell foam in the rim joists

## Now & Goal

DETAILS	NOW	GOAL
<b>Basement</b>		
Modeled Basement Wall Area	1216 ft <sup>2</sup>	
Modeled Basement Floor Area	1228 ft <sup>2</sup>	
Modeled Basement Perimeter	152 ft	
Basement Heating	Intentional	Intentional
Basement Cooling	Intentional	Intentional
Basement Rim Joist Treatment	Separately	Separately
Basement Rim Joist Length	152 ft	
Basement Rim Joist Insulation	2 R Value	13 R Value



# Upgrade Heating System

## HEATING SYSTEM

### Installed cost

\$9,750

### Energy Savings

Approx. \$121

### Savings to Investment Ratio

0.2

### Why it matters

Install a more efficient furnace, boiler or heat pump. Depending on the age of the unit, substantial savings may be gained by replacing it with an Energy Star rated appliance. If you're heating with gas, look for a sealed combustion unit. They're much safer since the exhaust pathway from the unit is sealed and goes directly outside. If it doesn't quite make sense to replace your heating system now, be prepared to replace it with a high efficiency Energy Star unit when it finally wears out.



## Notes to Homeowners

2001 Utica natural gas boiler has a tested efficiency of 85 percent AFUE in fair condition. The suspended boiler fan located in the basement should be removed and hot water baseboards should be installed to evenly heat the basement. Savings reflect replacing this boiler with a 95 percent Bosch combination boiler and on demand hot water unit.

## Now & Goal

DETAILS	NOW	GOAL
<b>Heating System</b>		
<b>Hvac System 1</b>		
System Name	Hvac System 1	
Equipment Type	Boiler	
Upgrade action	Replace with a newer model	
% of Total Heating Load	100%	100%
Heating Energy Source	Natural Gas	Natural Gas
Heating Capacity	124000 BTU/h	131900 BTU/h
Heating System Efficiency	80 AFUE	95 AFUE
Heating System Manufacturer	Utica	Bosch
Heating System Model	MGB150HD	KWB-35-3
Heating System Model Year	2001	2020





# Upgrade Water Heater

## WATER HEATER

### Installed cost

\$0

### Energy Savings

Approx. \$32

### Savings to Investment Ratio

100

### Why it matters

Replace your water heater with a tankless model or a heat pump water heater to save energy and reduce the ability for dangerous Carbon Monoxide to leak into your home.



## Notes to Homeowners

2010 Bradford White natural gas power vented hot water heater is a 40 gallon storage tank in good condition. Although in good shape, this water heater is past it's life expectancy. Savings reflect removal of this unit and replacing it with a Bosch combination boiler and on demand hot water unit.

## Now & Goal

DETAILS	NOW	GOAL
<b>Water Heater</b>		
<b>Water Heater 1</b>		
Fuel	Natural Gas	Natural Gas
Type	Tank Water Heater	Tankless Water Heater
ENERGY STAR	No	Yes
Energy Factor	67 EF	95 EF
Manufacturer	Bradford White	Bosch
Model	M1TW40S6FBN	KWB-35-3
Model Year	2010	2020

# Walls

## ADDITIONAL NOTES

### About this section

Additional notes are miscellaneous items that deserve a mention in your home's report. These mentioned items are not included in the cost or savings of your project.

### Why it matters

Insulating your walls can lead to a significant reduction in utility bills. This is done by drilling small holes in the wall cavities either from the inside or outside and filling the space with cellulose, fiberglass, or even foam insulation. If it's time to replace your exterior siding, then be sure to ask your contractor about adding a layer of rigid foam underneath the new sheathing of 1" or more.



### Notes to Homeowners

Aluminum sided exterior walls are 2 x 4 framed walls with 2 inches of fiberglass in the cavities. Due to the existing fiberglass, no improvements are recommended at this time.

# Windows

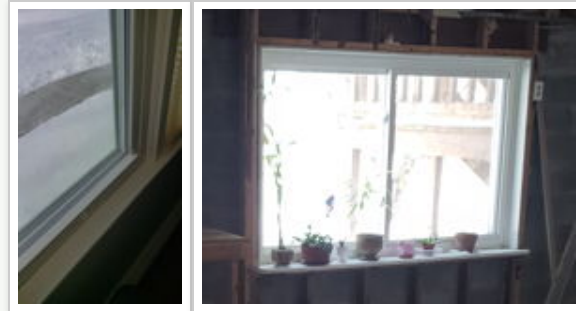
## ADDITIONAL NOTES

### About this section

Additional notes are miscellaneous items that deserve a mention in your home's report. These mentioned items are not included in the cost or savings of your project.

### Why it matters

Adding storm windows, solar screens or replacing your current windows can save energy and help reduce drafts or solar gain.



### Notes to Homeowners

The windows of your home are double pane, vinyl framed windows in good condition.

SAMPLE

# Upgrade Lighting

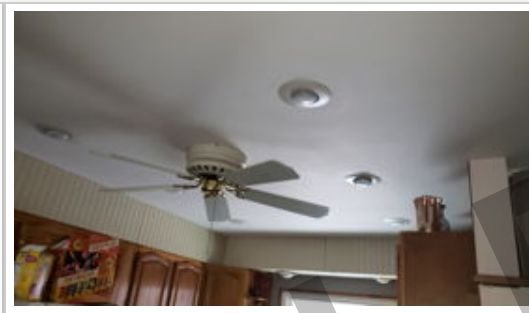
## ADDITIONAL NOTES

### About this section

Additional notes are miscellaneous items that deserve a mention in your home's report. These mentioned items are not included in the cost or savings of your project.

### Why it matters

Compact Florescent Lightbulbs (CFLs) use 1/4 of the energy of regular incandescent light bulbs and last 8 to 15 times as long. Light Emitting Diode (LED) bulbs use 12% of the energy of regular incandescent light bulbs and last up to 50 times as long. Replacing incandescent bulbs with CFLs or LEDs will save significant energy and replacement costs over time.



## Notes to Homeowners

Continue to upgrade all lights, lamps, and fixtures to LED bulbs.

# Solar Panels

## ADDITIONAL NOTES

### About this section

Additional notes are miscellaneous items that deserve a mention in your home's report. These mentioned items are not included in the cost or savings of your project.



## Notes to Homeowners

Solar electricity is a natural complement to an energy-efficient home. A well-designed solar electric system will provide decades of clean, reliable, low-cost electricity. Leased solar electric systems are typically offered by the corporate national solar installers, however it's far more beneficial to own the system to take full advantage of the incentives and tax credits. Also, ownership is not only a better investment for saving on your monthly utility bill, unlike leasing it adds to the resale value of a home. The professionals at Seed Solar will design a roof or ground-mounted solar electric system based upon your usage, provide the best low interest financing option, take care all the necessary permitting, and install an aesthetically pleasing system that will both save money on your utility bill as well as add value to your home for decades to come. Many financial incentives designed to promote growth of solar energy are currently in effect but may be gradually or suddenly phased out. Current incentives include:

- Federal & NYS Income Tax Credits
- NYSERDA Solar Electric Incentive Program – currently \$0.35 per watt (as of January 2018 but will decline as more systems are installed)
- A variety of low interest loans are available for residential solar installations
- Solar electric systems in New York State may be eligible for a 15-year property tax exemption due to the value added by the solar electric system

We highly recommend working with Seed Solar & Engineering. Call or email Seed Solar today so we can show you how much you can save! 800-580-0248 - [info@seedsolar.com](mailto:info@seedsolar.com) - [www.seedsolar.com](http://www.seedsolar.com)

# Health & Safety

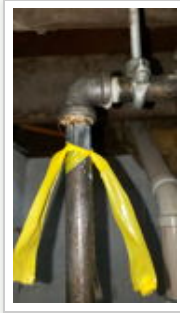
## What's This?

These tests are recommended by the Building Performance Institute (BPI). They can help identify potential health and safety concerns in your home.

## Test Summary

- Ambient Carbon Monoxide
- Natural Condition Spillage
- Worst Case Depressurization
- Worst Case Spillage
- Undiluted Flue CO
- Draft Pressure
- Gas Leak
- Venting
- Mold & Moisture

Passed    Failed    Warning



Gas leak detected at the 90 degree connection above the hot water heater.



The bath fan is poorly vented as it dips down in between bays in the attic and is not insulated allowing condensation in the rigid vent. This vent should be revented without any dips and properly insulated.



# Metrics

## About the metrics

These metrics are for the whole house in a pre and post-retrofit state.

The 'Baseline' savings numbers will likely not be the same as the actual energy consumption of the home. These numbers are weather normalized and then projected based on the 30 year weather normals data from NOAA. In other words, this is the modeled energy consumption of the home for a typical year, not the year that the utility bills were from.

FUELS	BASELINE	IMPROVED	SAVED
Total Fuel Energy Usage <small>therms/year</small>	1,327	1,099	228
Natural Gas Energy Usage <small>therms/year</small>	1,327	1,099	228

METRIC	BASELINE	IMPROVED	SAVED
Electric Energy Usage <small>kWh/year</small>	4,630	4,626	4
Total Energy Usage <small>MMBtu/year</small>	149.00	126.00	23.00
Fuel Energy Cost <small>\$/year</small>	\$ 1,088	\$ 901	\$ 187
Electric Energy Cost <small>\$/year</small>	\$ 463	\$ 463	\$ 0
Total Energy Cost <small>\$/year</small>	\$ 1,551	\$ 1,364	\$ 187
CO2 Production <small>Tons/year</small>	9.9	8.7	1.2
Payback <small>years</small>			0
Total Energy Savings			15%
Total Carbon Savings			12%
Net Savings to Investment Ratio <small>SIR</small>			0.2
Net Annualized Return <small>MIRR</small>			0%

HEATING & COOLING LOAD CALCULATIONS		
Heating Load <small>Btu/hr</small>	Base: 57,774	Improved: 54,443
Cooling Load: Sensible <small>Btu/hr</small>	Base: 21,016	Improved: 14,962
Cooling Load: Latent <small>Btu/hr</small>	Base: 800	Improved: 800
Winter Design Temperature	Outdoor: 7°	Indoor: 70°
Summer Design Temperature	Outdoor: 85°	Indoor: 75°



# Tech Specs

## Property Details

Year Built:	1956
Conditioned Area:	2456 ft <sup>2</sup>
Area Includes Basement:	Yes
Average Wall Height:	8 ft
House Length:	32 ft
House Width:	44 ft
Floors Above Grade:	2
Number of Occupants:	3
Number of Bedrooms:	3
Type of Home:	Single Family Detached
Front of Building Orientation:	West
Shielding:	Normal
Tuck Under Garage:	No

## Thermostat

Programmable Thermostat Installed:	No
Heating Setpoint High:	65 °F
Heating Setpoint Low:	65 °F
Cooling Setpoint High:	76-88 °F
Cooling Setpoint Low:	72-82 °F

## Heating & Cooling

Heating Design Load:	57774 Btu/hr
<b>Hvac: 1</b>	
System Name:	Hvac System 1
Equipment Type:	Boiler
Upgrade action:	Replace with a newer model
Heating Energy Source:	Natural Gas
% of Total Heating Load:	100%
Heating Capacity:	124000 BTU/h

Heating System Efficiency:	80 AFUE
Heating System Manufacturer:	Utica
Heating System Model:	MGB150HD
Heating System Model Year:	2001

## Appliances

<b>Range: 1</b>	
Range Fuel Type:	Natural Gas
<b>Oven: 1</b>	
Oven Fuel Type:	Natural Gas
<b>Clothes Dryer: 1</b>	
Dryer Fuel Type:	Electricity

## Clothes Washer

Type:	Front Load
Integrated Modified Energy Factor:	2.61 IMEF
ENERGY STAR:	Yes

## Dishwasher

Dishwasher Installed?:	Yes
Energy Factor:	0.55 EF
ENERGY STAR:	Yes

## Refrigerators

<b>Refrigerator: 1</b>	
Name:	Refrigerator 1
Refrigerator Age:	0-14
Refrigerator Size:	22+
ENERGY STAR:	No
Usage:	826 kWh/yr
Manufacturer:	Fridgidaire
Model:	FFSS231STS1
Model Year:	2019

## Refrigerator: 2

Name:	Refrigerator 2
Refrigerator Age:	0-14
Refrigerator Size:	22+
ENERGY STAR:	No
Usage:	826 kWh/yr
Manufacturer:	Whirlpool
Model:	WRT351SFYW00
Model Year:	2012

## Lighting

% CFLs or LEDs:	76-99%
Total # of Light Bulbs:	40
# of CFLs:	0
# of LEDs:	35
# of Incandescents:	5

## Doors

<b>Door: 1</b>	
Type:	1/2-Lite Steel, insulated
Area:	21 ft <sup>2</sup>
ENERGY STAR:	No
U Value:	0.26 U Value
<b>Door: 2</b>	
Type:	Steel, insulated
Area:	21 ft <sup>2</sup>
ENERGY STAR:	No
U Value:	0.16 U Value

## Exterior Walls

<b>Wall: 1</b>	
Modeled Area:	1216 ft <sup>2</sup>
Insulated?:	Yes





# Tech Specs

Siding:	Metal/vinyl siding
Construction:	2x4 Frame
Cavity Insulation:	7 R Value
Wall Cavity Insulation Type:	Fiberglass or Rockwool Batt
Continuous Insulation:	0 R Value

## Attic & Vaulted Ceiling

### Attic: 1

Modeled Area:	1228 ft <sup>2</sup>
Insulation Depth:	4-6
Insulation Type:	Fiberglass or Rockwool (batts or blown)
Insulation:	12.5 R Value
Radiant Barrier?:	No
Has Knee Wall?:	No
Cool Roof?:	No

### Foundation - General

Foundation: Basement:	100%
Foundation Above Grade Height:	4 ft

### Foundation - Basement

Modeled Basement Floor Area:	1228 ft <sup>2</sup>
Basement Wall Insulation:	Finished wall without Insulation
Basement Rim Joist Treatment:	Separately
Basement Rim Joist Insulation:	2 R Value
Basement Rim Joist Insulation Type:	Fiberglass or Rockwool Batt
Basement Heating:	Intentional
Basement Cooling:	Intentional

### Frame Floors

Modeled Floor Area:	0 ft <sup>2</sup>
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### Windows

#### Window 1

Window Area: North (Left):	15.1 ft <sup>2</sup>
Window Area: East (Back):	147.1 ft <sup>2</sup>
Window Area: South (Right):	0 ft <sup>2</sup>
Window Area: West (Front):	80.6 ft <sup>2</sup>
Type:	Double pane
Frame:	Vinyl
ENERGY STAR:	No
U-Value:	0.51 U Value
Solar Heat Gain Coefficient:	0.56 SHGC
Exterior Treatment: North (Left):	No Treatment
Exterior Treatment: East (Back):	No Treatment
Exterior Treatment: South (Right):	No Treatment
Exterior Treatment: West (Front):	No Treatment

### Air Leakage

Blower Door Test Performed:	Tested
Blower Door Reading:	2915 CFM50
Conditioned Air Volume:	19648 ft <sup>3</sup>
Wind Zone:	2
N-Factor:	14.99
Equivalent NACH:	0.59 NACH
Effective Leakage Area:	163.78 in <sup>2</sup>
Equivalent ACH50:	8.9 ACH50
Kitchen Fan:	0 CFM
Bathroom Fan 1:	0 CFM
ASHRAE 62.2 Required mechanical ventilation rate:	N/A CFM

### Water Heating

#### Water Heating: 1

Fuel:	Natural Gas
Type:	Tank Water Heater
Age:	0-5

Location:	Indoors and within heated area
Temperature Settings:	Low (120-130 F)
ENERGY STAR:	No
Energy Factor:	67 EF
Manufacturer:	Bradford White
Model:	M1TW40S6FBN
Model Year:	2010

### Pool & Hot Tub

Pool:	No
Hot Tub:	No

### PV

#### Pv: 1

Has PV?:	No
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### Utilities

Utility Price: Natural Gas:	0.82 \$/Therm
Utility Price: Propane:	2.87 \$/Gallon
Utility Price: Fuel Oil:	2.48 \$/Gallon
Utility Price: Electricity:	0.1 \$/kWh
Utility Price: Wood:	0 \$/cord
Utility Price: Pellets:	0 \$/Ton

### Utility Bills

#### Electric

Electric Utility Provider Name	National Grid
Electric Account Number	19714-19110

#### Fuel

Fuel Utility Provider Name	National Grid
Fuel Account Number	19714-19110

### Contact Information

Paul Mendel



# Tech Specs

True Building Performance  
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Albany, NY 12203  
info@truebuildingperformance.com

## About This Report

Report Date: February 17, 2020  
Job ID: 161011  
NYSERDA

Report & modeling software: Snugg Pro™ 5.0

SAMPLE



# Glossary

**Annual Fuel Utilization Efficiency (AFUE)** The measure of seasonal or annual efficiency of a residential heating furnace or boiler. It takes into account the cyclic on/off operation and associated energy losses of the heating unit as it responds to changes in the load, which in turn is affected by changes in weather and occupant controls.

**Annualized Return** The return an investment provides over a period of time, expressed as a time-weighted annual percentage. This is the equivalent annual interest rate you would get if you put the same amount of money spent on the energy upgrade into a savings account.

**Asbestos** Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant, but is no longer used in homes. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems.

**British Thermal Unit (Btu)** The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit; equal to 252 calories.

**Carbon Monoxide (CO)** A colorless, odorless but poisonous combustible gas with the formula CO. Carbon monoxide is produced in the incomplete combustion of carbon and carbon compounds such as fossil fuels (i.e. coal, petroleum) and their products (e.g. liquefied petroleum gas, gasoline), and biomass.

**Cashflow** When financing energy efficiency improvements, cashflow is the difference between the average monthly energy savings and the monthly loan payment.

**Combustion Appliance Zone (CAZ)** A contiguous air volume within a building that contains a combustion appliance such as furnaces, boilers, and water heaters; the zone may include, but is not limited to, a mechanical closet, mechanical room, or the main body of a house, as applicable.

**Compact Fluorescent Light bulb (CFL)** A smaller version of standard fluorescent lamps which can directly replace standard incandescent lights. These highly efficient lights consist of a gas filled tube, and a magnetic or electronic ballast.

**Cubic Feet per Minute (CFM)** A measurement of airflow that indicates how many cubic feet of air pass by a stationary point in one minute.

**Carbon Dioxide (CO<sub>2</sub>)** A colorless, odorless noncombustible gas that is present in the atmosphere. It is formed by the combustion of carbon and carbon compounds (such as fossil fuels and biomass). It acts as a greenhouse gas which plays a major role in global warming and climate change.

**Energy Efficiency Ratio (EER)** The measure of the energy efficiency of room air conditioners: cooling capacity in Btu/hr divided by the watts consumed at a specific outdoor temperature.

**Energy Factor (EF)** The measure of efficiency for a variety of appliances. For water heaters, the energy factor is based on three factors: 1) the recovery efficiency, or how efficiently the heat from the energy source is transferred to the water; 2) stand-by losses, or the percentage of heat lost per hour from the stored water compared to the content of the water; and 3) cycling losses. For dishwashers, the energy factor is the number of cycles per kWh of input power. For clothes washers, the energy factor is the cubic foot capacity per kWh of input power per cycle. For clothes dryers, the energy factor is the number of pounds of clothes dried per kWh of power consumed.

**Heating Seasonal Performance Factor (HSPF)** The measure of seasonal efficiency of a heat pump operating in the heating mode. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of heat delivered for every watt-hour of electricity used.

**Heat Recovery Ventilator (HRV) / Energy Recovery Ventilator (ERV)**

A device that captures the heat or energy from the exhaust air from a building and transfers it to the supply/fresh air entering the building to preheat the air and increase overall heating efficiency while providing consistent fresh air.

**Light Emitting Diode (LED) Lighting** An extremely efficient semiconductor light source. LEDs present many advantages over incandescent light sources including lower energy consumption, longer lifetime, improved physical robustness, and smaller size.

**Modified Internal Rate of Return (MIRR)** This is your return on investment. Roughly speaking, if you invested the same amount of money for this project (listed on this report as the total cost) into a bank account, your equivalent interest rate from all of the energy savings would be the MIRR.

**N-Factor** A factor of how susceptible your house is to wind, influenced by weather patterns, location, and the number of floors in the home. Used in the calculation of NACH.

**Natural Air Changes per Hour (NACH)** The number of times in one hour the entire volume of air inside the building leaks to the outside naturally.

**Payback Period** The amount of time required before the savings resulting from your system equal the system cost.

**R-Value** A measure of the capacity of a material to resist heat transfer. The R-Value is the reciprocal of the conductivity of a material (U-Value). The larger the R-Value of a material, the greater its insulating properties.

**Radon** A naturally occurring radioactive gas found in the U.S. in nearly all types of soil, rock, and water. It can migrate into most buildings. Studies have linked high concentrations of radon to lung cancer.

**Rim Joist** In the framing of a deck or building, a rim joist is the final joist that caps the end of the row of joists that support a floor or ceiling. A rim joist makes up the end of the box that comprises the floor system.

**Seasonal Energy Efficiency Ratio (SEER)** A measure of seasonal or annual efficiency of a central air conditioner or air conditioning heat pump. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of cooling delivered for every watt-hour of electricity used by the heat pump over a cooling season.

**Savings to Investment Ratio (SIR)** A ratio used to determine whether a project that aims to save money in the future is worth doing. The ratio compares the investment that is put in now with the amount of savings from the project.



# Rebates & Incentives

## Assisted Home Performance with ENERGY STAR

Each year, New York State homeowners waste hundreds of dollars in energy. Many feel powerless in the face of high energy bills and are unaware of what they can do to control these costs. The Assisted Home Performance with ENERGY STAR program makes it easy and affordable to make the smart investment in a more energy-efficient home, helping income-eligible homeowners across the State lower their energy bills and live more comfortably all year long.

It provides those who qualify with a discount covering 50% of the cost of eligible energy efficiency improvements up to \$4,000 per project for single-family homes. Two- to four-unit residential homes with income-eligible residents may qualify for a discount of up to \$8,000.

To learn more go to:  
[on.ny.gov/2nqLVNo](https://on.ny.gov/2nqLVNo)

## Residential Financing Options

NYSERDA offers two loan options to help New York State residents finance energy efficiency and renewable energy improvements made through NYSERDA's programs. NYSERDA offers lower interest rates to lower income New Yorkers and those who cannot qualify for traditional financing. Talk to your participating contractor and select the loan that works best for you. Loans are not incentives or rebates, and must be paid back.

These loan options can be used with the following NYSERDA programs:

- Home Performance with ENERGY STAR and Assisted Home Performance with ENERGY STAR® use home assessments to inform homeowners where their house is wasting energy
- The NY-Sun program makes solar-generated electricity accessible and affordable by converting sunlight into electricity
- Renewable Heat NY supports the installation of high-efficiency, low-emission, wood-heating technology

### On-Bill Recovery Loan

With the On-Bill Recovery Loan, your monthly payments may not exceed your estimated average monthly energy cost savings. Your loan payments are built right into your utility bill so you will not have an extra bill each month. Your energy savings essentially pay for your work.

Learn more here:  
[on.ny.gov/2ndo3Ly](https://on.ny.gov/2ndo3Ly)

### Smart Energy Loan

The Smart Energy Loan is a more traditional loan that you repay monthly via check or automatic payment.

Learn more here:  
[on.ny.gov/2ndo3Ly](https://on.ny.gov/2ndo3Ly)