



*Innovation, Sustainability, Efficiency, Community*

*Digital Engagement for Targeting the  
Limited Income Customer*

*Tuesday, June 26, 2018*



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- Who is SEEL
- Customer Engagement Methods
- Smart Phone Usage
  - Case study
- Digital Engagement Today
  - Demo



# Family of Companies



**Detroit, Michigan**

- Energy Efficiency & Optimization
- Turnkey Operations
- Pilot Management
- Residential Audit Programs
- Multifamily Program Management
- Contact Center Management
- Outreach & Community Partnership Management

Customers

- DTE Energy
- Ameren Illinois
- Georgia Power
- LG&E KU
- ComEd
- Entergy Mississippi
- City of Detroit
- Thumb Electric Cooperative
- Wyandotte Municipal Services

**Detroit, Michigan**

- Warehouse & Distribution
- Inventory Management
- Sorting & Repacking
- Sub - & Final Assembly
- Sequencing
- Quality Inspection & Testing
- Transportation Management
- Domestic & International Logistics
- Freight Forwarding
- Project Management
- Global Tracking & Tracing (web-based system)

Customers

- General Motors
- Honda
- Volkswagen

**Tupelo, Mississippi**

- Quality & Containment
- Inspection
- Sorting
- Re-work
- Sequencing
- Inventory Management
- Warehousing & Distribution

Customers

- APMM
- General Motors
- Nissan
- Toyota

**Detroit, Michigan**

- Human Resources Management
- Payroll Services
- Real Estate Services
- Staffing Services – Automotive, Energy, and Customer Service
- Security Management

Customer

All MCLJasco Companies

**Detroit, Michigan**

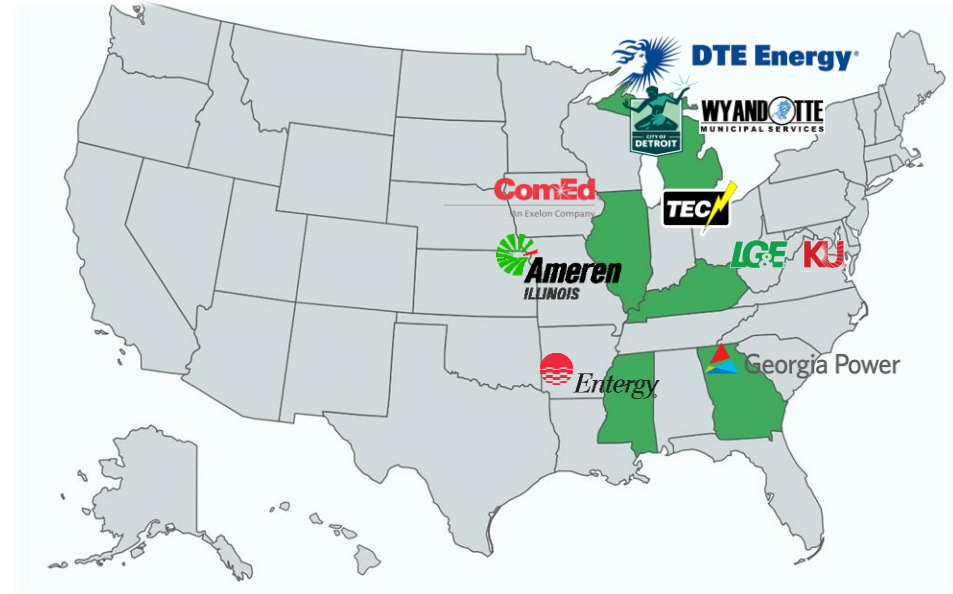
- Consolidation
- Deconsolidation
- Logistics
- Repackaging – Kitting
- Inventory Management
- Cross Docking
- MRO Fulfillment
- Shuttling
- Switching

Customers

- Consumers Energy
- DTE Energy
- US Census

## COMPANY OVERVIEW

- Established in 2009, as an energy efficiency implementation and management contractor
- 100% Service Disabled Veteran Owned (SDVOSB) and MBE Certified
- Seven offices in five states: Kentucky, Michigan, Illinois, Georgia, and Mississippi



## MISSION STATEMENT

While supporting our clients and delivering stellar customer service, SEEL is committed to providing energy and sustainability management services that effect change in the communities we service.

## PROGRAM EXPERIENCE

- **Income Qualified Programs:** LG&E and KU, DTE Energy, Georgia Power
- **Single Family and Multifamily Programs:** Entergy Mississippi, Georgia Power, DTE Energy
- **Lighting and Appliance Programs:** DTE Energy
- **Appliance Recycling Programs:** Ameren Illinois, DTE Energy, Thumb Electric, Wyandotte Municipal Services
- **Small Business Programs:** DTE Energy, ComEd

## EXPERTISE

### *OVER 175,000 INCOME QUALIFIED AUDITS AND WEATHERIZATION'S*

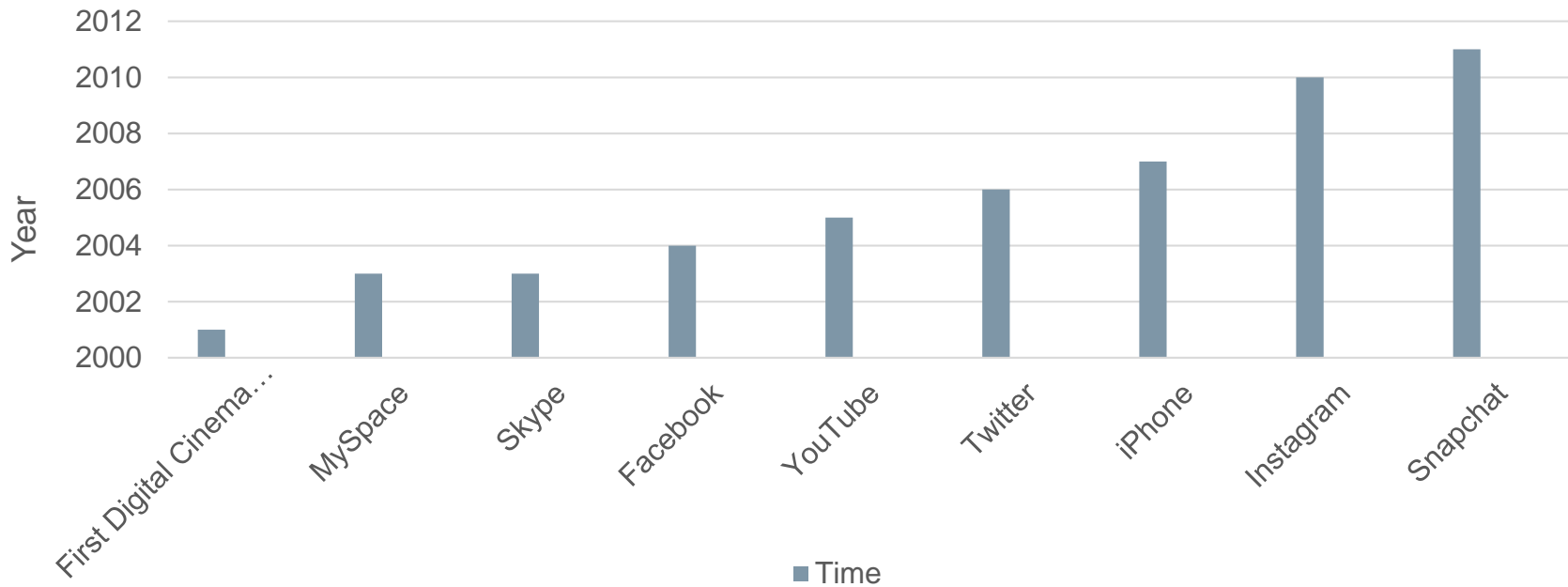
- Focuses on engaging hard to reach and historically underrepresented customers
- Deep Community Engagement
- Effective Collaboration with Energy Partners
- Superior Customer Satisfaction Ratings
- Dedicated Call Center
- Nationwide Recycling Initiatives



# Utility Customer Engagement Methods



## Messaging Through Time



2001 – First digital cinema transmission by satellite in Europe of a feature film by Bernard Pauchon and Philippe Binant.

2003 – Myspace is launched.

2003 – Skype video calling software is launched.

2004 – What would become the largest social networking site in the world, Facebook is launched.

2005 – YouTube, the video sharing site, is launched.

2006 – Twitter is launched.

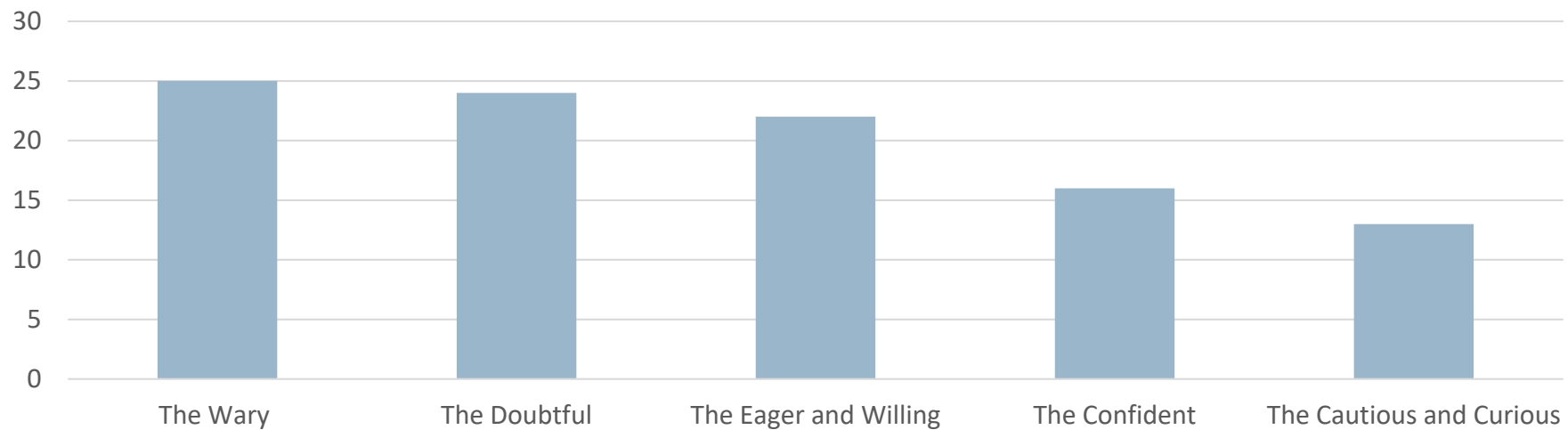
2007 - iPhone is launched.

2010 - Instagram is launched. iPad is created.

2011 - Snapchat is launched.



Five Groups of Americans ranging from most to least engaged with information



Relatively Engaged with Information	Demographics
<p>The Eager and Willing: They are active seekers. They express concerns about their online usage but they are anxious to improve their digital skills and information literacy.</p>	<p>52% of this group is made up of minorities. 31% are Hispanic; 21% are black. Some 38% are white.</p>
<p>The confident: They combine a strong interest in information, high levels of trust in information sources, and self-assurance that they can navigate the information themselves.</p>	<p>This group is heavily white, and well educated. 31% are between 18 and 29.</p>
<p>The cautious and Curious: They have a strong interest in news and information, a lot of tech access, but they do not have high levels of trust in information. They report significant levels of stress over trying new things.</p>	<p>Mostly Mirrors the demographic of the general population.</p>
<p>The Doubtful: They are leery of information sources and low interest in updating their digital skills.</p>	<p>Mostly middle-aged and white.</p>
<p>The Wary: They have the lowest level of trust in information sources. They also have the lowest broadband of smartphone adoption.</p>	<p>Heavily male (59%) and one-third are ages 65 or older.</p>

## 72% of Americans have used some type of shared or on-demand online service

% of adults who have ...



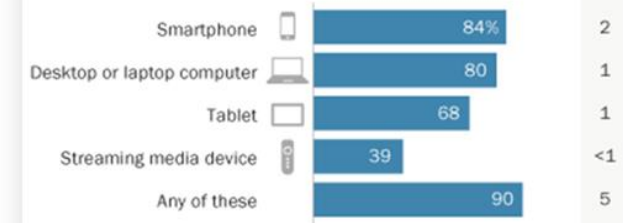
The demand for online services in America.

Normal technology use is determined by accessibility. These graphs depict the unrelenting desire for technological advances in every day life, and the need for businesses to rely on these resources to better assist customers.

## The typical American household contains multiple connected devices

% of U.S. adults who say their household contains a ...

Median number per household



Note: Streaming media device refer to devices such as an Apple TV, Roku, Google Chromecast or Amazon Fire TV.

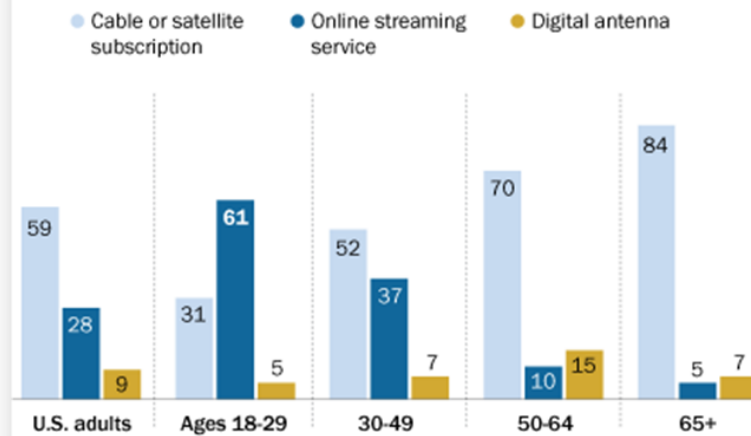
Source: Survey conducted Sept. 29-Nov. 6, 2016.

PEW RESEARCH CENTER

The variety of devices in American households

## Young adults use streaming services most to watch TV

% of U.S. adults who say \_\_\_ is the primary way they watch television



Source: Survey conducted Aug. 15-21, 2017.

PEW RESEARCH CENTER

Younger adults are using online streaming services as their go-to platform for watching television. About six-in-ten Americans ages **18 to 29** (61%) report that online streaming is the primary way they watch television, according to *Center survey data* from August of last year.

Based on a survey of 1,519 smartphone owners between the ages of **18 and 34** who were asked to keep a detailed diary of all of their online and offline video interactions--suggests that watching video on smartphones is "far less distracted than it is on TV." Specifically, watching video on TV was the sole activity for Millennials for just 28% of the time. (The rest of the time they were watching TV was spent multi-tasking--eating, texting, chatting to a friend, or even cooking.) In contrast, watching mobile video was the sole activity for over half (53%) of respondents.

What does this mean for low income families?

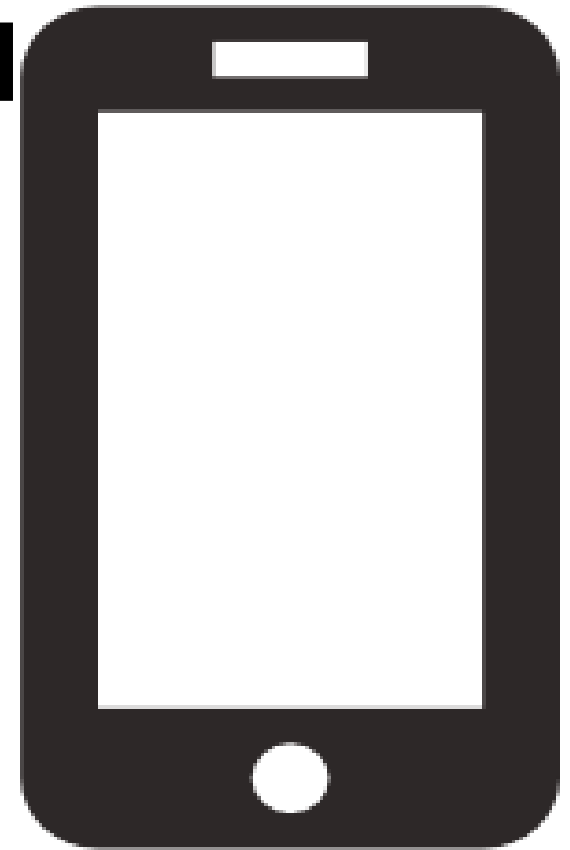
What are the numbers of low income families that use technology (More specifically smart phones) regularly?

64% of lower-income Americans now own a smartphone. One-in-five adults whose annual household income falls below \$30,000 are smartphone-only internet users, (Meaning that, they use their cellphones as their primary source for internet).



Results: Research shows that Low Income families are likely to use smart phones (And other digital technology) regularly. I.e: Marketing and working through apps and other digital engagement resources will not limit low income families from participation or services.

**What engagement  
methods do you  
use?**





**Smart  
Phone/Tablet  
Usage**



## OVERALL MESSAGE OF THIS SECTION

- Utilities need to engage all customers through digital channels with a focus on mobile apps and platforms
- This could be the only way to reach low income customers
  - Bill pay centers are going away
  - Addresses and landlines are constantly changing with this customer segment
  - Smart phones are prevalent among the low income community, even if internet is not available in their home

**Who has a smart  
phone or tablet?**

**Is your smart phone  
or tablet your  
primary internet  
source?**

**How often are you  
on your phone each  
day?**

Text SEEL to 797-979

# SMS SHORT CODES

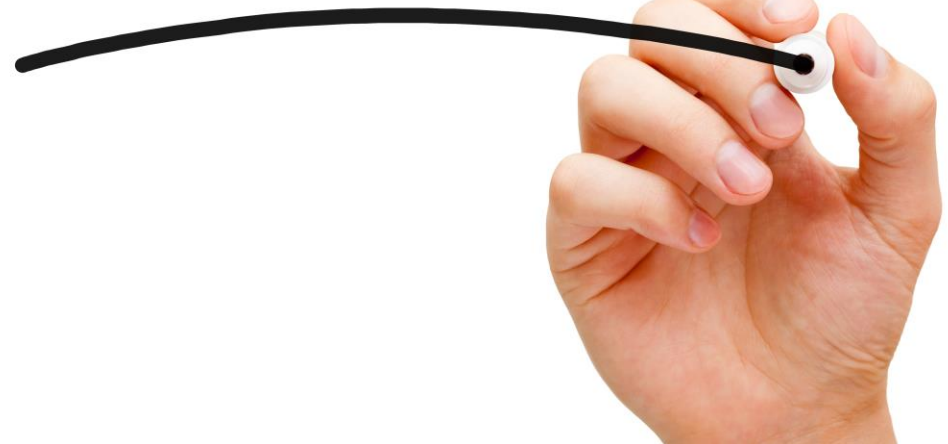
A strong focus will be placed on merchandising, which in this case is the retail promotion of energy efficiency offerings.

- Interaction – utilize ubiquitous keywords, such as *Program Name*, *Organization Name*, *INFO*, etc. to connect with customers/clients. These keywords can be texted to the selected short code and provide instantaneous interaction with customers.
- Merchandising – offer unique programs to customers with short lead time and little cost.
- Engagement – utilize SMS effort to get customers to engage by downloading the application.
- Branding – build the brand by leveraging a sophisticated and low cost mechanism to promote utility/program.
- Market Testing – real-time evaluation of messages and offers via direct advertising that can be measured.
- Targeting – industry promotions that enable micro-targeting by NAICS, SIC or other classification.



- Content is King
  - Key Messages
  - Identified Target Audience(s)
  - Engaging/Personable
  - Up-to-date
  - Relevant/Targeted

CONTENT  
MARKETING

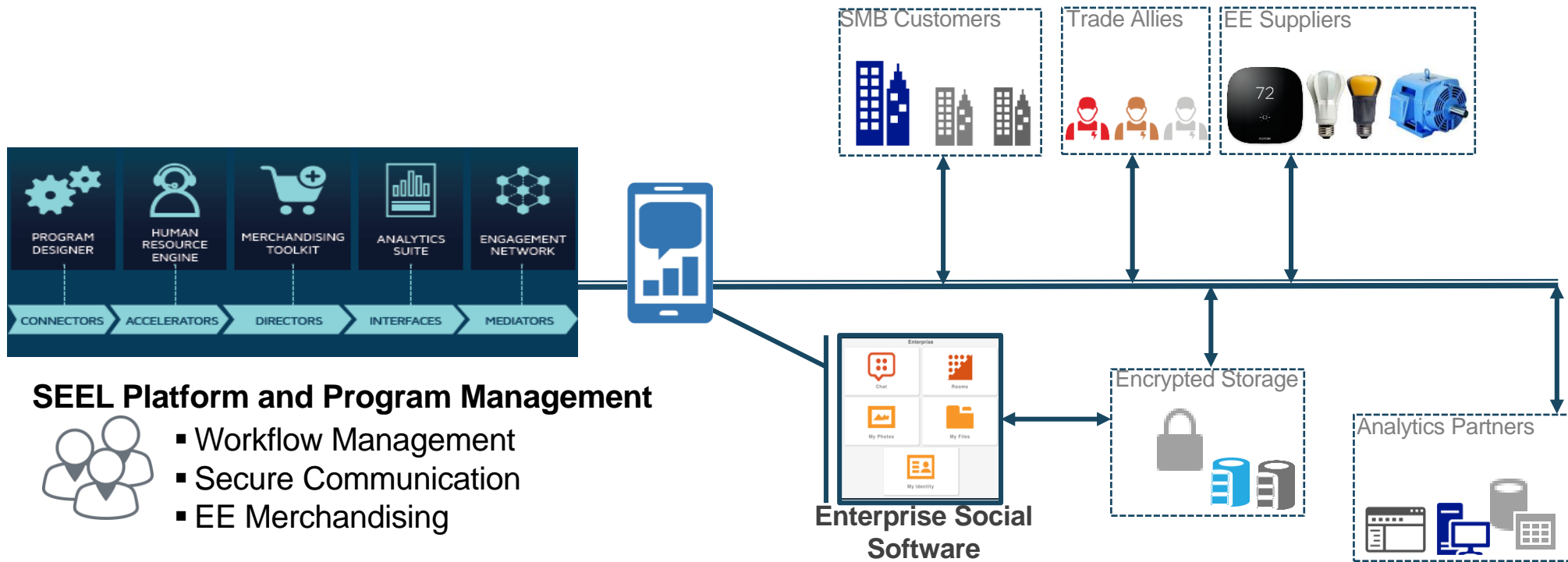


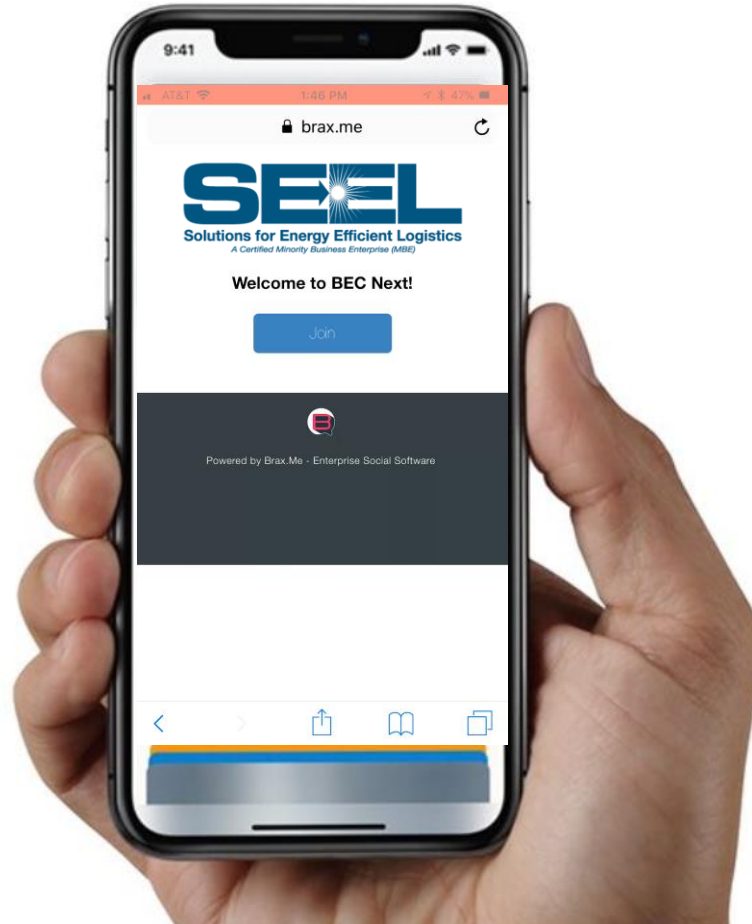


- Gamification
  - The process of adding games or gamelike elements to something (such as a task) so as to encourage participation
- Why is gamification important?
  - Encourages participation
    - Customer Recognition
    - Feedback
  - Data Collection
    - Understanding Consumer Behavior
  - Learning Experience
    - Teach/modify behaviors
- Other Key Elements
  - Organizational buy-in
  - Commitment to updating content

## THE SEEL ENERGY ECOSYSTEM

An Ecosystem is a complex network of interconnected business entities and systems that interact as a community within a physical or digital environment in order to create value. SEEL’s approach enables increased energy efficiency performance by connecting our multifaceted platform – storage, program management, analytics and merchandising capability – to Customers, Trade Allies and Business Partners.



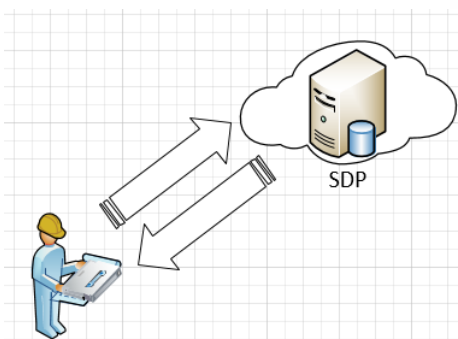
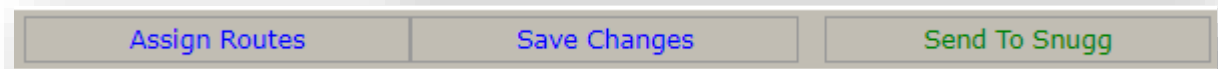
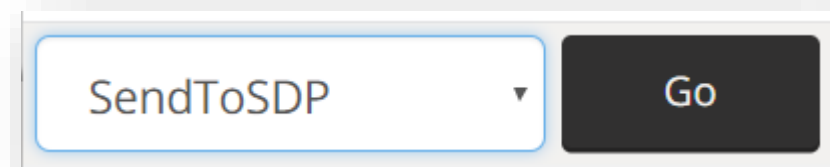
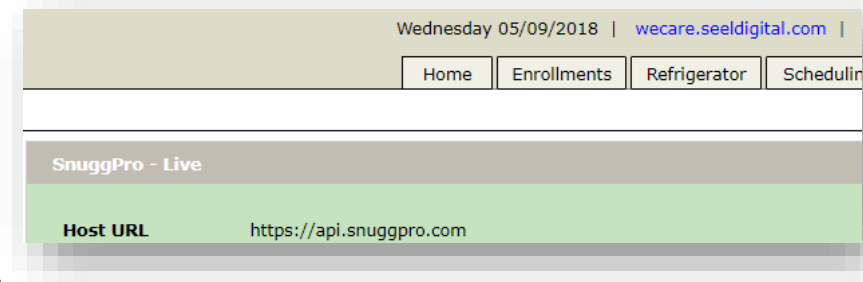


## – Content Suggestions

- Income verification forms
- DIY videos
- How to read my bill videos
- Energy Efficiency programs
- Customer case studies/videos
- Collaboration rooms
  - Q&A with the utility
  - Webinars

## THE SEEL DIGITAL PLATFORM (SDP)

- Time saving audit tool
- Clear, informative audit report
- Ease of use energy savings modeling tool
- Secure application programming interface (API)
- Safe, secure data exchange between Snugg Pro and SDP



## – Audit Inputs

The screenshot displays the SEEL Digital Platform Audit Tool interface. The browser address bar shows the URL <https://app.snuggpro.com/job/101152>. The main header identifies the job as "Gracie Jacks" with the address "1566 Athens Avenue SW, Atlanta, GA 30310" and a status of "RETROFIT COMPLETE".

The left sidebar contains a navigation menu with categories: MAIN (Jobs, Templates), JOB (Input, Refine, Finance, Report), and Settings (Settings, Support). The "Input" category is selected, and a list of building components is shown, including Building, Concerns, Utility Bills, Thermostat, HVAC, Appliances, Refrigerators, Lighting, Doors, Walls, Attic, Foundation, Windows, Air Leakage, Hot Water (DHW), Pools, PV, Health & Safety, and CAZ. The "Building" component is highlighted.

The main content area is titled "Building" and contains the following input fields:

- Year Built:** 1950 (#)
- Conditioned Area:** 1,008 (ft<sup>2</sup>)
- Area Includes Basement:** Yes (selected), No
- Average Wall Height:** 8 (ft)
- House Length:** 42 (ft)
- House Width:** 24 (ft)
- Floors Above Grade:** 1 (#)
- Number of Occupants:** 2 (#)

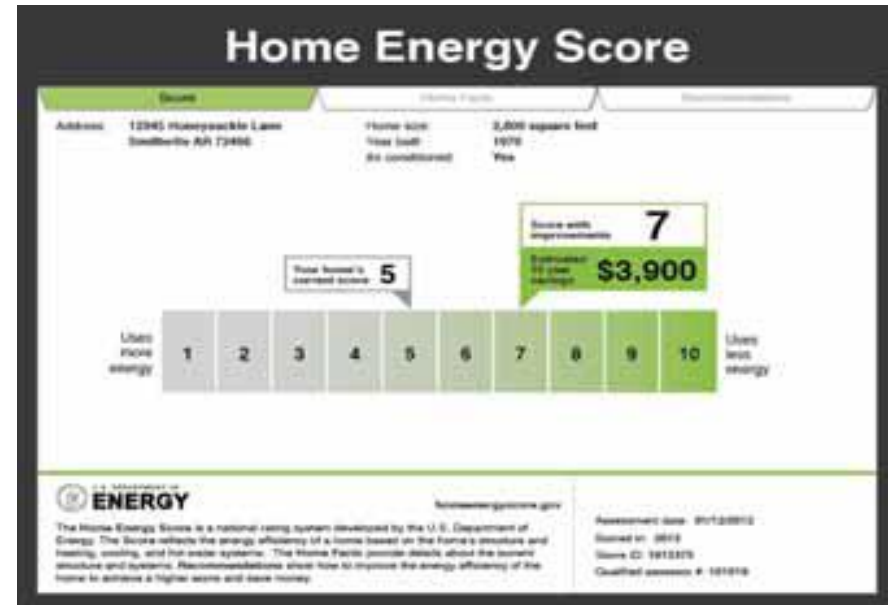
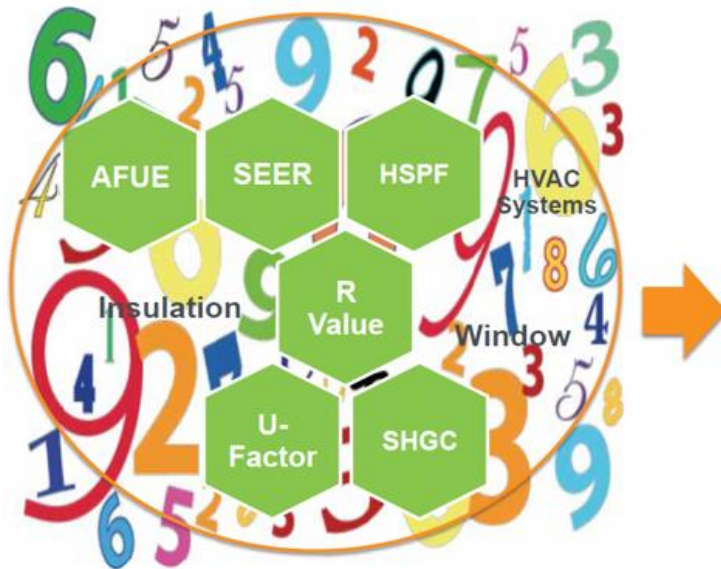
The right sidebar contains additional information:

- ACTIVE SECTION:** Building
- RELATED MEASURES:** Floor Above Garage or Cantilevers (Now & Goal ↗)
- KNOWLEDGE BASE: BUILDING:** About floors above garage or cantilevers, Length and width of home, Input Screen, Building Inputs, Floor Above Garage.
- FIELD HELP:** Click or tap on a field to see its description.

The Windows taskbar at the bottom shows the system tray with the time 8:05 PM and date 3/25/2018.

## Home Energy Score

- Offers homeowner an affordable, reliable, easy way to understand homes' energy performance in a standardized “miles-per-gallon” report
- Synthesizes complex home energy data into meaningful information and advice
- Engages and educates customers about energy efficiency practices and principles
- Intended to motivate homeowners to invest in residential energy efficiency
  - Simple and action-oriented
  - Ability to document and track investments in energy efficiency







## Home

Sample Report  
15 Glenwood St  
Albany NY, 12203

## Audit Date

Jul 2, 2015  
03:01 pm

## Audited By

**Sandy Michaels**  
Tech Support  
555-555-9988  
sandy@snugghome.com  
8 am to 6 pm

## Snugg Pro

PO Box 82  
Boulder CO, 80306  
Office: (720) 663-7836, ext 1  
8 am to 6 pm - Monday - Friday

## Your Home Audit



Don & Margery -

Thank you for inviting us to do an energy audit on your beautiful home! We've kept your concerns in mind during our inspection and testing. Let's discuss the recommendations found in this report and see what works best for you.

Thanks,  
Sandy

## Inside Your Report

- Cover
- Concerns
- Solutions
- Upgrade Details
- Health & Safety
- Additional Notes
- Rebates & Incentives
- Financing
- Metrics
- Tech specs
- Glossary
- HES



## We listened to you!

As our client, we want to make sure we are addressing all of your concerns for your home. If we have missed any concerns in this report, please let us know right away.

## Concerns

### Air Leaks

Air leaks have been noticed around the window frames, and especially around the front door.

### Heating system is old

Furnace needs to be replaced for additional comfort and health & safety issues.

### Kitchen gets too hot

The primary culprits are the large number of halogen can lights. Replacing these lights with new efficient bulbs will dramatically reduce the heat created by the lighting.



## Solutions for Your Home

### Totals

#### Cost

\$ 11,625

#### Estimated Savings

\$3,587 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

Package SIR: 2.4

There are many reasons to upgrade. An SIR greater than 1 pays for itself over the equipment lifetime.

#### Impact of upgrades

Energy Reduction	43%
Carbon (CO2) Savings	12 tons
Equivalent cars removed from the road	2.5/yr

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

DETAILS	INSTALLED COST	APPROXIMATE ANNUAL SAVINGS	SIR *
Seal Air Leaks	\$ 1,015	\$ 295	5.8
Attic Improvements	\$ 1,907	\$ 516	8.1
Seal Duct Work	\$ 3,195	\$ 1,098	6.9
Insulate Walls	\$ 5,508	\$ 420	2.3

\* 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.



## AIR LEAKAGE

### Installed cost

\$1,015

### Energy Savings

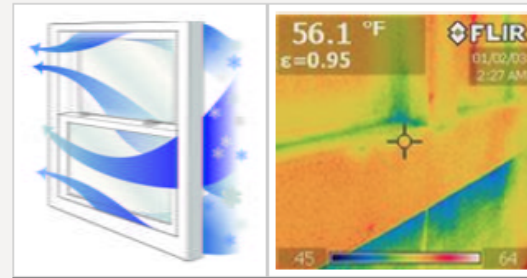
Approx. \$295

### 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.

## Seal Air Leaks

Good air-sealing and a continuous air barrier between the attic and the home's conditioned (living) space are important, not only to save energy and reduce fuel bills, but also to prevent moisture problems in the attic.



Air leakage at Windows:

## Now & Goal

DETAILS	NOW	GOAL
<b>Air Leakage</b>		
Blower Door Reading	3628 CFM50	2540 CFM50
Conditioned Air Volume	21546 ft <sup>3</sup>	
Wind Zone	2	
N-Factor	14.99	
Equivalent NACH	0.67 NACH	0.47 NACH
Effective Leakage Area	203.84 in <sup>2</sup>	142.71 in <sup>2</sup>
Equivalent ACH50	10.1 ACH50	7.07 ACH50
Kitchen Fan		
Bathroom Fan 1		
ASHRAE 62.2 Required mechanical ventilation rate	N/A CFM	N/A CFM
Minimum CFM50		2082 CFM50



## Attic Improvements

ATTIC

### Installed cost

\$1,907

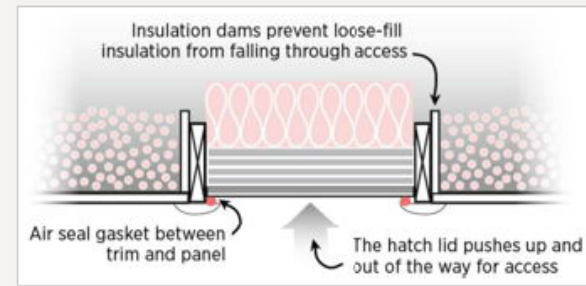
### Energy Savings

Approx. \$516

### 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.

The current level of insulation in the attic is low and uneven. Taking the R Value to a consistent 49 will vastly improve the comfort and efficiency of your home.



Insulate the Attic Hatch: Openings used for access to the attic such as access panels, doors into kneewalls, or dropdown stairs should be air sealed and insulated.

### Now & Goal

DETAILS	NOW	GOAL
<b>Attic</b>		
Attic 1		
Modeled Area	1197 ft <sup>2</sup>	1197 ft <sup>2</sup>
Insulation	5 R Value	49 R Value
Radiant Barrier?	No	No
Has Knee Wall?	Yes	Yes
Knee Wall Area	45 ft <sup>2</sup>	45 ft <sup>2</sup>
Knee Wall Cavity Insulation		12.95 R Value
Cool Roof?	No	No





## Seal Duct Work

### DUCTS

#### Installed cost

\$3,195

#### Energy Savings

Approx. \$1,098

#### Why it matters

If you have a forced air system for heating or cooling, sealing the connections and penetrations with mastic will ensure that all of the air makes it to where it was designed to go. This increases the efficiency of your heating and cooling system and improves comfort. If you have a boiler system for heating, insulating the pipes will increase the effectiveness of the system.



If ducts are located in an unconditioned space, such as a vented attic or vented crawlspace, they should be sealed and insulated to prevent heat loss due to air leaks and conduction and to provide some protection against harsh conditions.

### Now & Goal

DETAILS	NOW	GOAL
<b>Ducts</b>		
<b>Central</b>		
Duct Location	Attic (unconditioned)	Attic (unconditioned)
Duct Insulation	No Insulation	R-8 Duct Insulation
Duct Leakage	30% - Very leaky	Seal to 6% Leakage
Duct Efficiency	68.18%	88.43%



## WALLS

### Installed cost

\$5,508

### Energy Savings

Approx. \$420

### 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.

## Insulate Walls



Insulate exterior walls:

By "dense packing" cellulose insulation in your wall cavities, air leaks and drafts will be dramatically reduced. To install the insulation, contractors will lightly pry up a few rows of siding on your house and temporarily remove it. They will then drill a 2" hole in the sheathing for every wall cavity. A blower pushes cellulose insulation at high speed through a hose into the holes, filling the wall cavity. Great care is taken to ensure the cellulose fills into every part of the wall.

### Now & Goal

DETAILS	NOW	GOAL
<b>Walls</b>		
<b>Wall 1</b>		
Modeled Area	1887.64 ft <sup>2</sup>	1887.64 ft <sup>2</sup>
Siding	Wood/Fiber Cement siding	
Construction	2x4 Frame	
Cavity Insulation	7 R Value	13 R Value
Continuous Insulation		
<b>Wall 2</b>		
Modeled Area	629.21 ft <sup>2</sup>	629.21 ft <sup>2</sup>
Cavity Insulation		13 R Value
Continuous Insulation		





## 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 ☑

☑ Passed   ☒ Failed   ⚠ Warning



### Install a Low Level Carbon Monoxide Monitor

CO detectors are highly recommended in homes with fuel-burning appliances. The detectors signal homeowners via an audible alarm when CO levels reach potentially dangerous levels.

### MOLD & MOISTURE

Moisture control is the key to mold control. Molds need both food and water to survive; since molds can digest most things, water is the factor that limits mold growth. Molds will often grow in damp or wet areas indoors. Common sites for indoor mold growth include bathroom tile, basement walls, areas around windows where moisture condenses, and near leaky water fountains or sinks. Common sources or causes of water or moisture problems include roof leaks, deferred maintenance, condensation associated with high humidity or cold spots in the building, localized flooding due to plumbing failures or heavy rains, slow leaks in plumbing fixtures, and malfunction or poor design of humidification systems. Uncontrolled humidity can also be a source of moisture leading to mold growth, particularly in hot, humid climates.

### ELECTRICAL

Have an electrician look at the wall plugs that are located near a water source, to see if a GFCI (ground-fault circuit interrupter) is recommended.

CAZ (combustion appliance zone) test results:



## Water Sense

### 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

On a national scale, if every home in the United States installed WaterSense labeled showerheads, we could save more than \$2.2 billion in water utility bills and more than 260 billion gallons of water annually. In addition, we could avoid about \$2.6 billion in energy costs for heating water. EPA.gov.



Save water and protect the environment by choosing WaterSense labeled products in your home.



Showering is one of the leading ways we use water in the home, accounting for nearly 17 percent of residential indoor water use—for the average family, that adds up to nearly 40 gallons per day.



## 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 Typical Meteorological Year for the past 30 years (TMY30). In other words, this is the energy consumption of the home for a typical year, not the year that the utility bills were from.

## Metrics

METRIC	BASELINE	IMPROVED	SAVED
Fuel Energy Usage <small>therms/year</small>	352	352	0
Electric Energy Usage <small>kWh/year</small>	35,891	16,246	19,645
Total Energy Usage <small>MMBtu/year</small>	158.00	91.00	67.00
Fuel Energy Cost <small>\$/year</small>	\$ 255	\$ 255	\$ 0
Electric Energy Cost <small>\$/year</small>	\$ 6,554	\$ 2,966	\$ 3,588
Total Energy Cost <small>\$/year</small>	\$ 6,809	\$ 3,221	\$ 3,588
CO2 Production <small>Tons/year</small>	23.8	11.8	12.0
Payback <small>years</small>			8
Total Energy Savings			43%
Total Carbon Savings			50%
Net Savings to Investment Ratio <small>SIR</small>			2.4
Net Annualized Return <small>MIRR</small>			8.0%

### HEATING & COOLING LOAD CALCULATIONS

Heating Load <small>Btu/hr</small>	Base: 122,712	Improved: 57,650
Cooling Load: Sensible <small>Btu/hr</small>	Base: 70,014	Improved: 33,723
Cooling Load: Latent <small>Btu/hr</small>	Base: 1,533	Improved: 1,123
Winter Design Temperature	Outdoor: 7°	Indoor: 70°
Summer Design Temperature	Outdoor: 85°	Indoor: 75°



## Tech Specs

### Property Details

Year Built:	1928
Conditioned Area:	2394 ft <sup>2</sup>
Includes Basement:	No
Average Wall Height:	8.5 ft
Floors Above Grade:	2
Number of Occupants:	2
Number of Bedrooms:	4
Type of Home:	Single Family Detached
Front of Building Orientation:	East
Shielding:	Normal
Tuck Under Garage:	Yes

### Thermostat

Programmable Thermostat Installed:	No
Heating Setpoint High:	65-68 °F
Heating Setpoint Low:	68 °F
Cooling Setpoint High:	75 °F
Cooling Setpoint Low:	75 °F

### Heating & Cooling

Heating Design Load:	122712 Btu/hr
<b>Hvac: 1</b>	
System Name:	Central
Equipment	Central Heat Pump (shared ducts)
Type:	
Upgrade action:	Replace with a newer model
Heat Pump Inverter:	Yes
% of Total Heating Load:	100%
Heating Capacity:	100000 BTU/h
Heating System Efficiency:	8.2 HSPF
Heating System Model Year:	1988

% of Total Cooling Load:	100%
Cooling Capacity:	24000 BTU/h
Cooling System Efficiency:	14 SEER
Duct Location:	Attic (unconditioned)
Duct Insulation:	No Insulation
Duct Leakage:	30% - Very leaky
Duct Efficiency:	68.18%

### 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:	Top Load
Integrated Modified Energy Factor:	0.64 IMEF
ENERGY STAR:	No

### Dishwasher

Dishwasher Installed?:	Yes
Energy Factor:	0.43 EF
ENERGY STAR:	No

### Refrigerators

<b>Refrigerator: 1</b>	
Refrigerator Age:	22-24
Refrigerator Size:	19-21
ENERGY STAR:	No
Usage:	840 kWh/yr

### Lighting

% CFLs or LEDs:	1-25%
Total # of Light Bulbs:	45
# of CFLs:	6
# of LEDs:	0
# of Incandescents:	39

### Doors

<b>Door: 1</b>	
Type:	Wood
Area:	21 ft <sup>2</sup>
ENERGY STAR:	No
U Value:	0.46 U Value
<b>Door: 2</b>	
Type:	Wood with Storm
Area:	21 ft <sup>2</sup>
ENERGY STAR:	No
U Value:	0.31 U Value

### Exterior Walls

<b>Wall: 1</b>	
Modeled Area:	1887.64 ft <sup>2</sup>
Insulated?:	Yes
Siding:	Wood/Fiber Cement siding
Construction:	2x4 Frame
Cavity Insulation:	7 R Value
Continuous Insulation:	0 R Value
<b>Wall: 2</b>	
Modeled Area:	629.21 ft <sup>2</sup>
Insulated?:	No
Cavity Insulation:	0 R Value
Continuous Insulation:	0 R Value

### Attic & Vaulted Ceiling



## Tech Specs

### Attic: 1

Modeled Area:	1197 ft <sup>2</sup>
Insulation Depth:	1-3
Insulation Type:	Fiberglass or Rockwool (batts or blown)
Insulation:	5 R Value
Radiant Barrier?:	No
Has Knee Wall?:	Yes
Knee Wall Area:	45 ft <sup>2</sup>
Knee Wall Cavity Insulation:	0 R Value
Knee Wall Continuous Insulation:	0 R Value
Cool Roof?:	No

### Foundation - General

Foundation: Basement:	50%
Foundation: Crawlspace:	50%
Foundation Above Grade Height:	2 ft

### Foundation - Basement

Modeled Basement Floor Area:	348.5 ft <sup>2</sup>
Basement Wall Insulation:	None or Bare Walls
Basement Wall Cavity Insulation:	0 R Value
Basement Continuous Wall Insulation:	0 R Value
Basement Rim Joist Treatment:	Same as Basement Wall
Basement Heating:	Incidental-Desired (e.g. leaky ducts)
Basement Cooling:	Incidental-Desired (e.g. leaky ducts)

### Foundation - Crawlspace

Modeled Crawl Floor Area:	348.5 ft <sup>2</sup>
Crawlspace Type:	Unvented - Unconditioned Crawl
Crawlspace Insulation:	Crawlspace is uninsulated
Crawl Cavity Insulation:	0 R Value

### Frame Floors

Modeled Floor Area:	500 ft <sup>2</sup>
Floor Cavity Insulation:	7 R Value
Floor Continuous Insulation:	0 R Value

### Windows

#### Window: 1

Window Area: North:	107.86 ft <sup>2</sup>
Window Area: East:	143.82 ft <sup>2</sup>
Window Area: South:	107.86 ft <sup>2</sup>
Window Area: West:	143.82 ft <sup>2</sup>
Type:	Single pane
Frame:	Vinyl
ENERGY STAR:	No
U-Value:	0.89 U Value
Solar Heat Gain Coefficient:	0.64 SHGC
North Overhang Depth:	2 ft
East Overhang Depth:	2 ft
South Overhang Depth:	2 ft
West Overhang Depth:	2 ft
Exterior Treatment: North:	No Treatment
Exterior Treatment: East:	No Treatment
Exterior Treatment: South:	No Treatment
Exterior Treatment: West:	No Treatment

### Air Leakage

Blower Door Reading:	3628 CFM50
Conditioned Air Volume:	21546 ft <sup>3</sup>
Wind Zone:	2
N-Factor:	14.99
Equivalent NACH:	0.67 NACH
Effective Leakage Area:	203.84 in <sup>2</sup>
Equivalent ACH50:	10.1 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:	21-25
Location:	Garage or Unconditioned Space
Temperature Settings:	High (140-150 F)
ENERGY STAR:	No
Energy Factor:	56 EF

### Pool & Hot Tub

Pool:	No
Hot Tub:	No

### Utilities

Utility Price: Natural Gas:	0.72 \$/Therm
Utility Price: Propane:	2.87 \$/Gallon
Utility Price: Fuel Oil:	4.3 \$/Gallon
Utility Price: Electricity:	0.18 \$/kWh
Utility Price: Wood:	0 \$/cord
Utility Price: Pellets:	0 \$/Ton

### Utility Bills

#### Electric

Electric Utility Provider Name	Easter
Electric Account Number	

#### Fuel

Fuel Utility Provider Name	
Fuel Account Number	



## Tech Specs

### Contractor Contact Information

Sandy Michaels

Tech Support

Snugg Pro

PO Box 82

Boulder, CO 80306

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### About This Report

Report Date: March 15, 2017

Job ID: 46777

Report & modeling software: Snugg Pro™ 5.0





## 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.

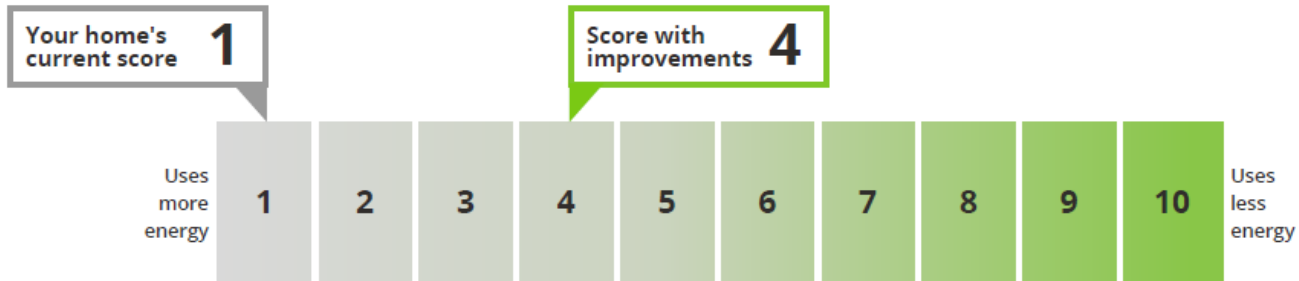
**Seasonal Energy Efficiency Ratio (SEER)** A measure of seasonal or annual efficiency of a central air conditioner or air conditioning heat pump. It takes into account the variations in temperature that can occur within a season and is the average number of Btu of cooling delivered for every watt-hour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



## Home Energy Score

ADDRESS: 15 Glenwood St  
Albany, NY 12203  
HOME SIZE: 2,394 square feet  
YEAR BUILT: 1928  
AIR CONDITIONED: Yes



Learn more at [homeenergyscore.gov](http://homeenergyscore.gov)



The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The **Score** reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems.

OFFICIAL ASSESSMENT | Assessor ID TST-Snugg | Assessed on Mar 14, 2017 | Label ID# 148091 | v2016



# Why Does It Matter



# Q&A