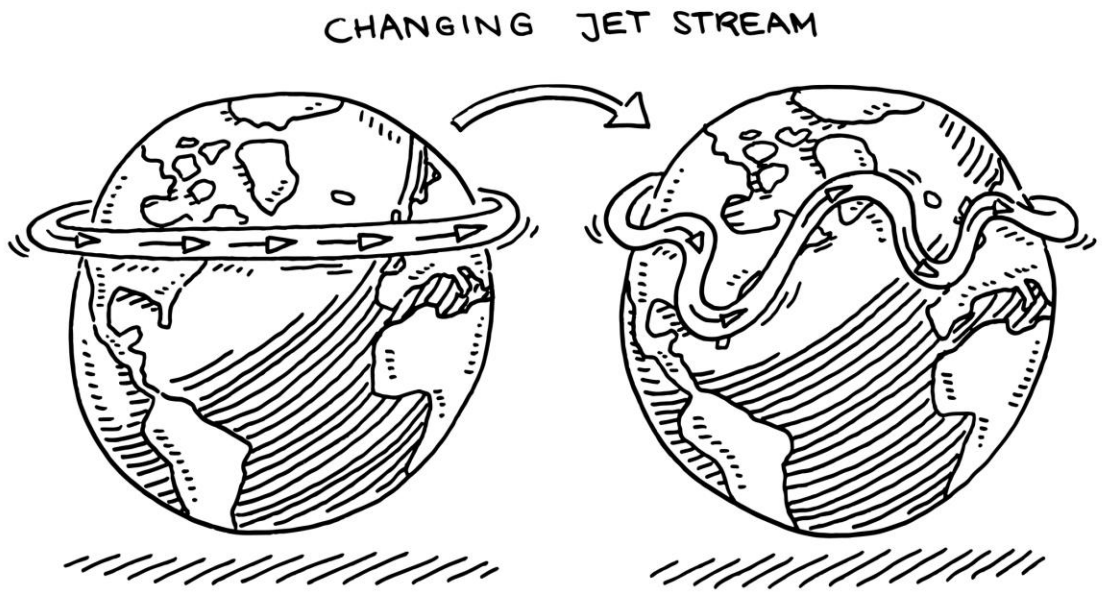
Energy Efficiency Tips

Customer Service Managers and Key Staff

Introduction

Energy Efficiency Tips

High bills and extreme weather



#1 reason existing customers contact our offices

The Variables

The Variables

Weather

Major Equipment Not Operating Correctly

Personal Comfort Setting

The Variables - Weather

What is a “degree day”? (source EIA.gov)

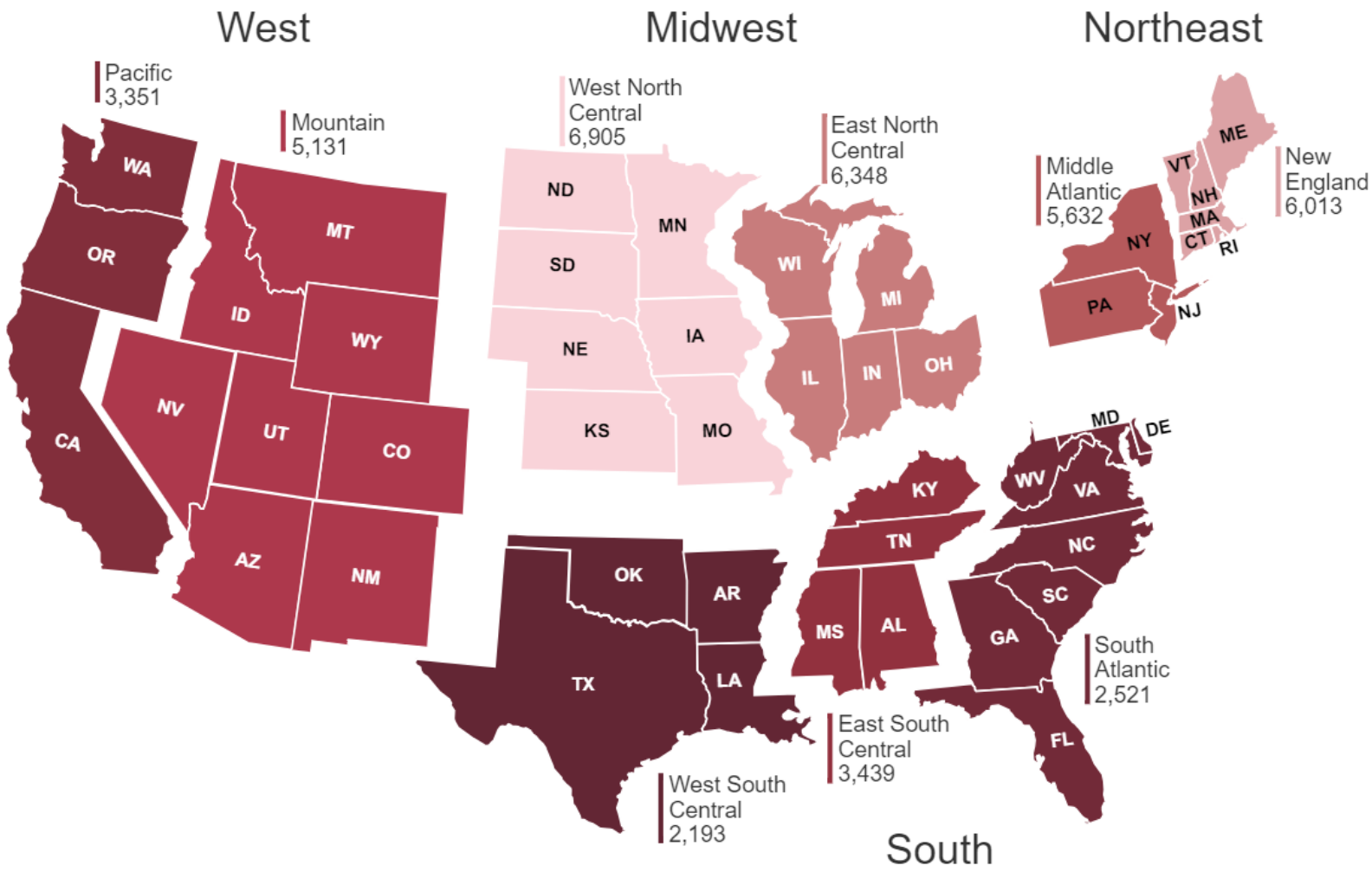
Degree days are measures of how cold or warm a location is. A *degree day* compares the mean (the average of the high and low) outdoor temperatures recorded for a location to a standard temperature, usually 65° Fahrenheit (F) in the United States. The more extreme the outside temperature, the higher the number of degree days. A high number of degree days generally results in higher energy use for space heating or cooling

The Variables - Weather

Heating degree days (HDDs) are a measure of how cold the temperature was on a given day or during a period of days. For example, a day with a mean temperature of 40°F has 25 HDDs. Two such cold days in a row have 50 HDDs for the two-day period.

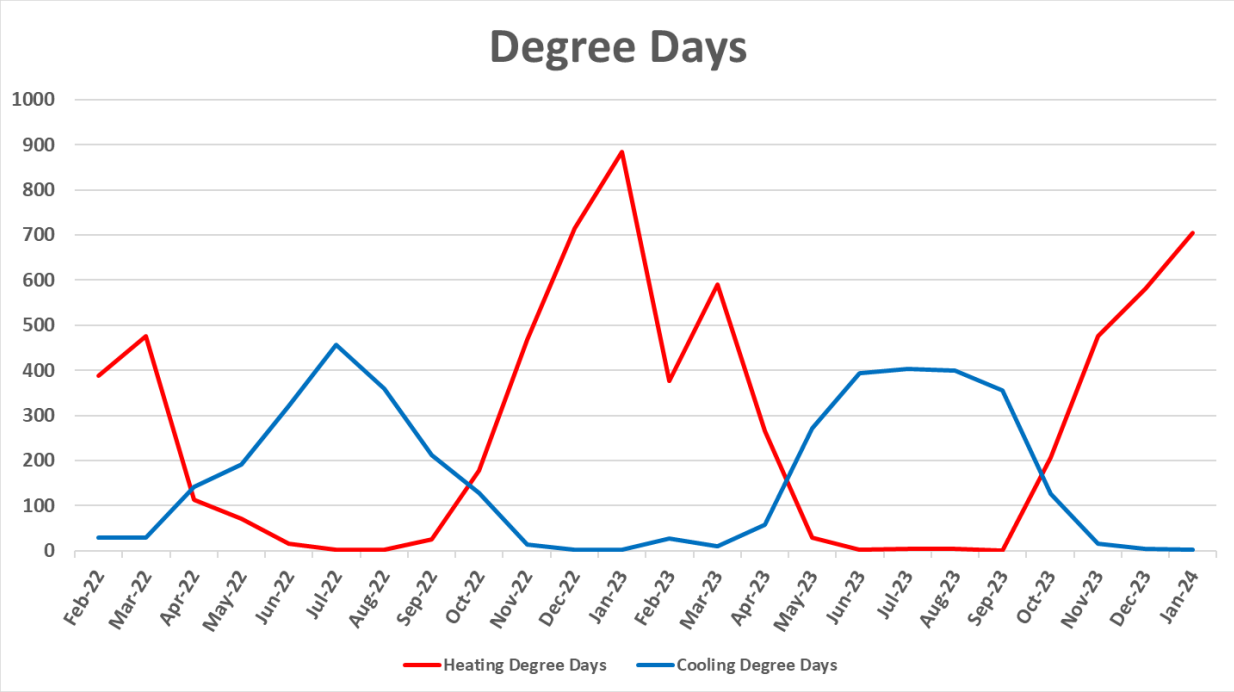
Cooling degree days (CDDs) are a measure of how hot the temperature was on a given day or during a period of days. For example, a day with a mean temperature of 80°F has 15 CDDs. Two such hot days in a row would have 30 CDDs for the two-day period.

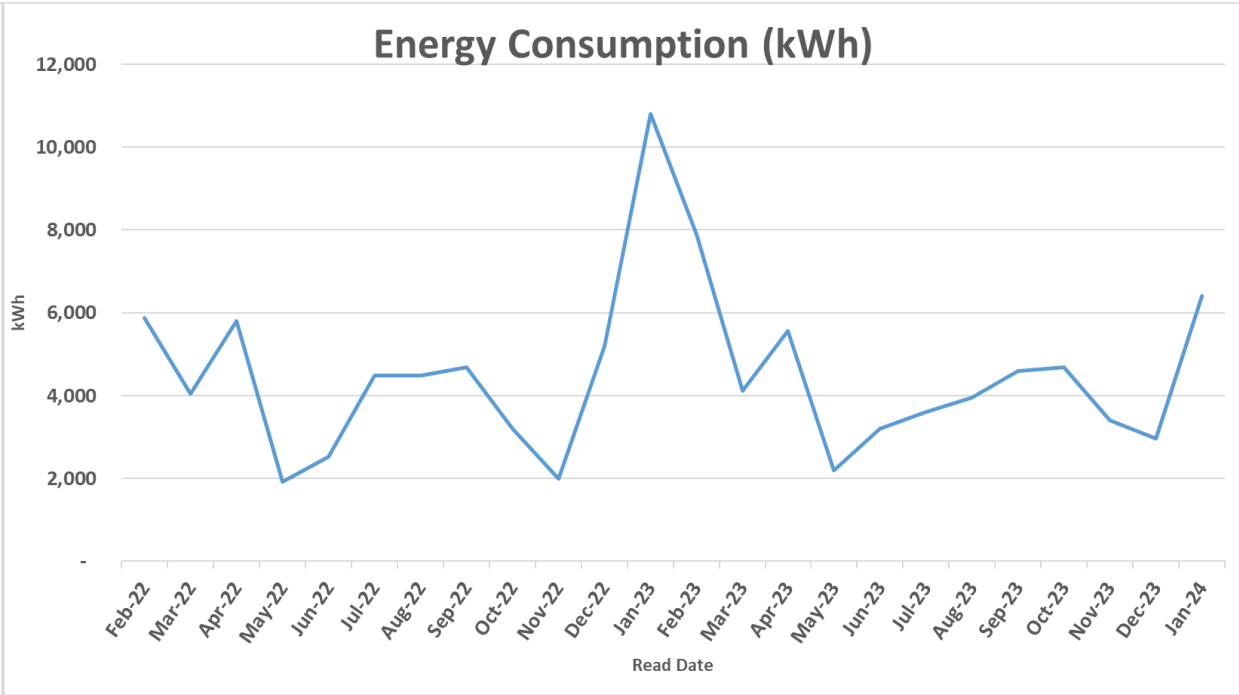
Heating degree days by census division in 2022



Data source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.10, July 2023
Note: Population-weighted degree days. Pacific division includes Alaska and Hawaii.

The Variables - Weather





The Variables – Major Equipment Not Operating Correctly

- HVAC Issues
- Thermostat set to "Aux" or "Em Heat"
- Heating and cooling together make up about 35%-40% of a typical bill
- New HVAC system can reduce energy use by 20% or more.
- Water heater is second largest energy user in homes, about 13% of bill.

The Variables – Major Equipment Not Operating Correctly

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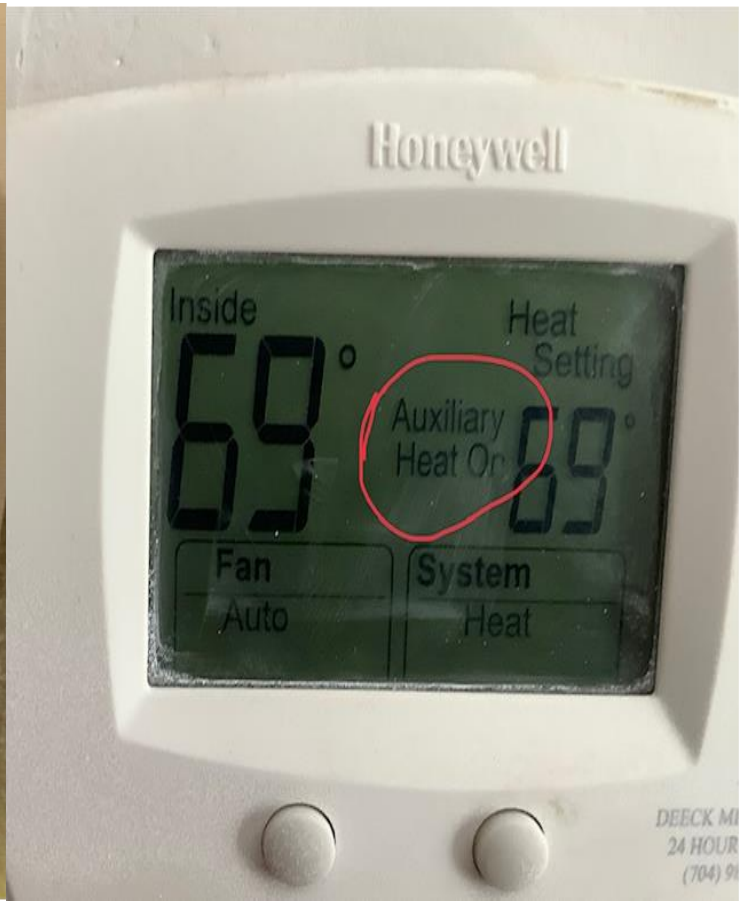
The Variables



The Variables

The Variables – Major Equipment Not Operating Correctly

The Variables – Major Equipment Not Operating Correctly

The Variables – Personal Comfort Settings

- DOE Recommended
  - 68°F heating
  - 78°F cooling
- Customer Preferences
  - >72°F heating
  - <74°F cooling
- Estimated heating and cooling energy savings of 3-5% for every degree up/down

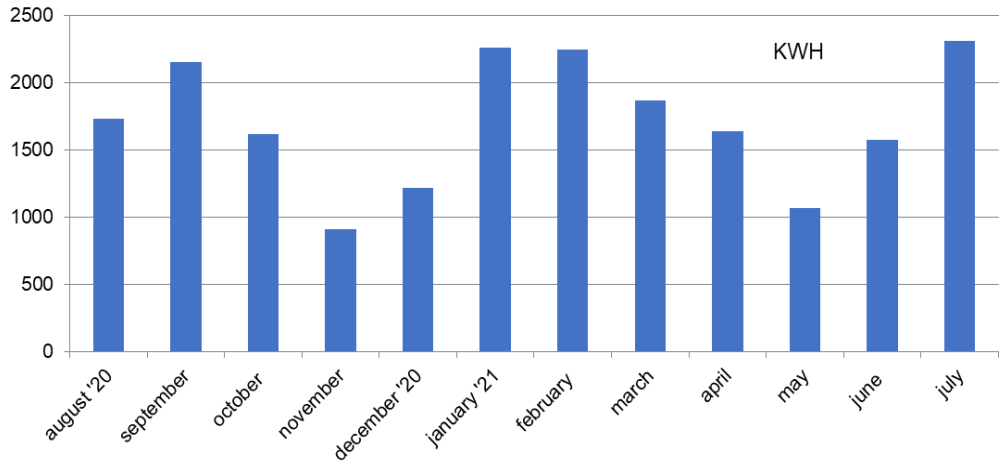
Tools You Should Use

Analyze billing history patterns and trends

12-month billing histories reveal customer use patterns

1.Shoulder Months and Base Load:

1. Definition: Shoulder months refer to transitional periods between peak and off-peak seasons.
2. Base load: The lowest month of usage approximates the baseline (use of all other appliances except heating and cooling).
3. Analyzing shoulder months helps identify variations in consumption.
4. The difference between peak month use and lowest month use is for either heating or cooling



2.Weather Comparison:

1. Correlating billing data with weather patterns provides insights into energy consumption fluctuations.
1. Identify anomalies such as unexpected spikes or drops in energy usage.

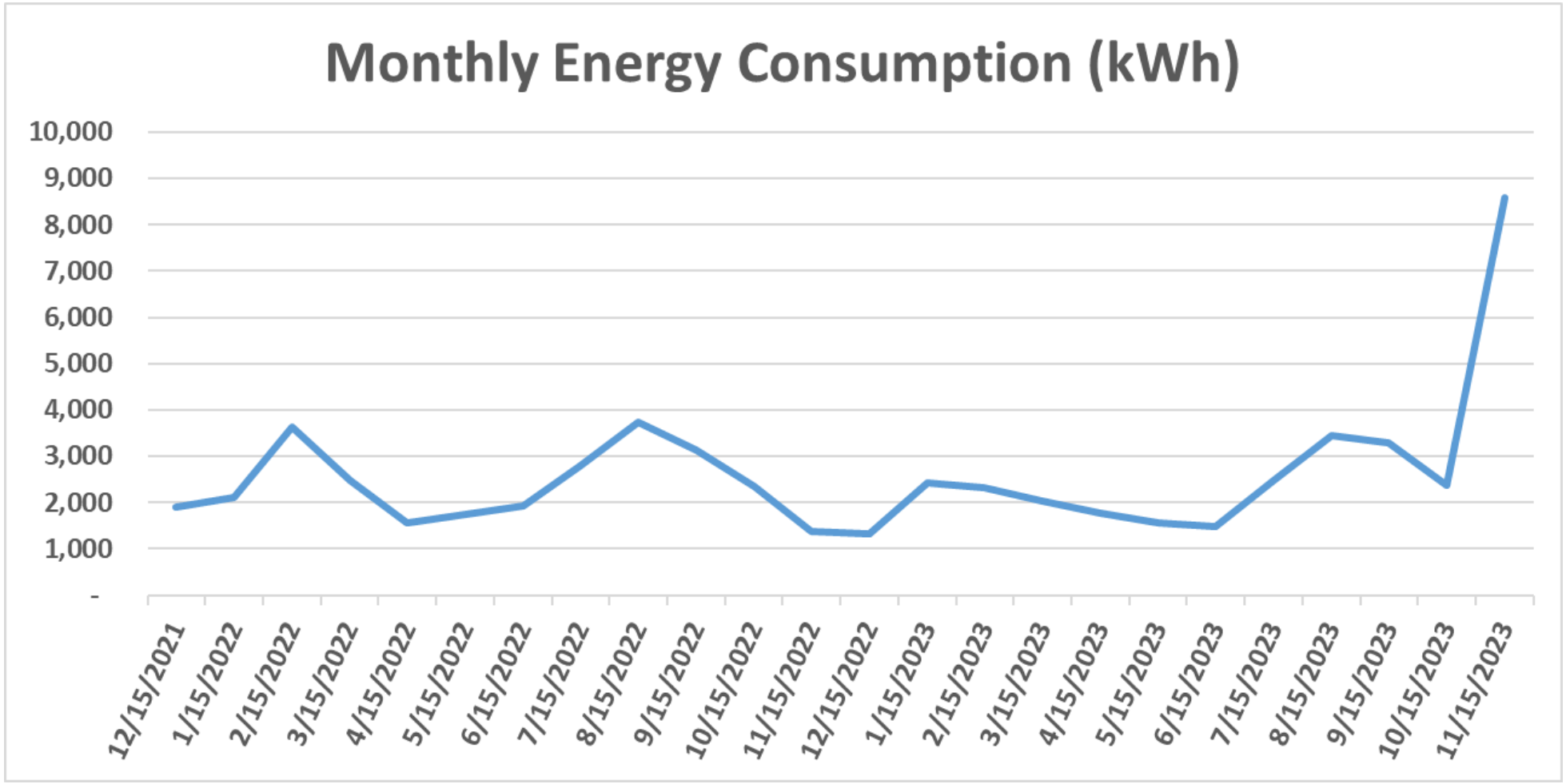
3.Lag in Bill Date vs. Read Date:

1. Understand any delay between meter readings and billing dates.
2. Analyze reasons for delays (e.g., meter reading schedules, billing cycles).

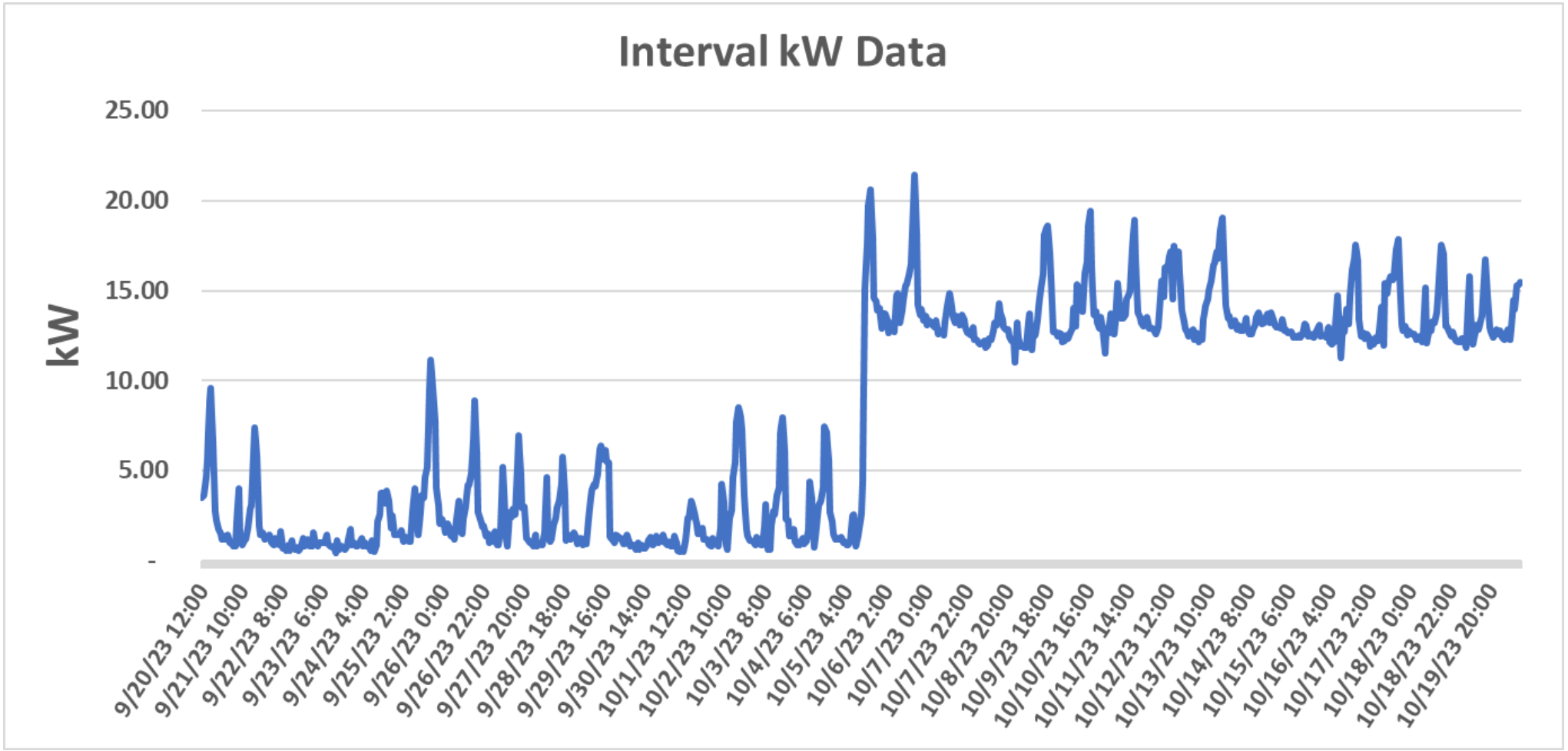
Smart Meter Data

- AMI – Advanced Meter Infrastructure
- Customer consumption data available down to every 15-minutes vs. One reading per month with traditional meters
- Pinpoint exactly when issues arise

Monthly Meter Data

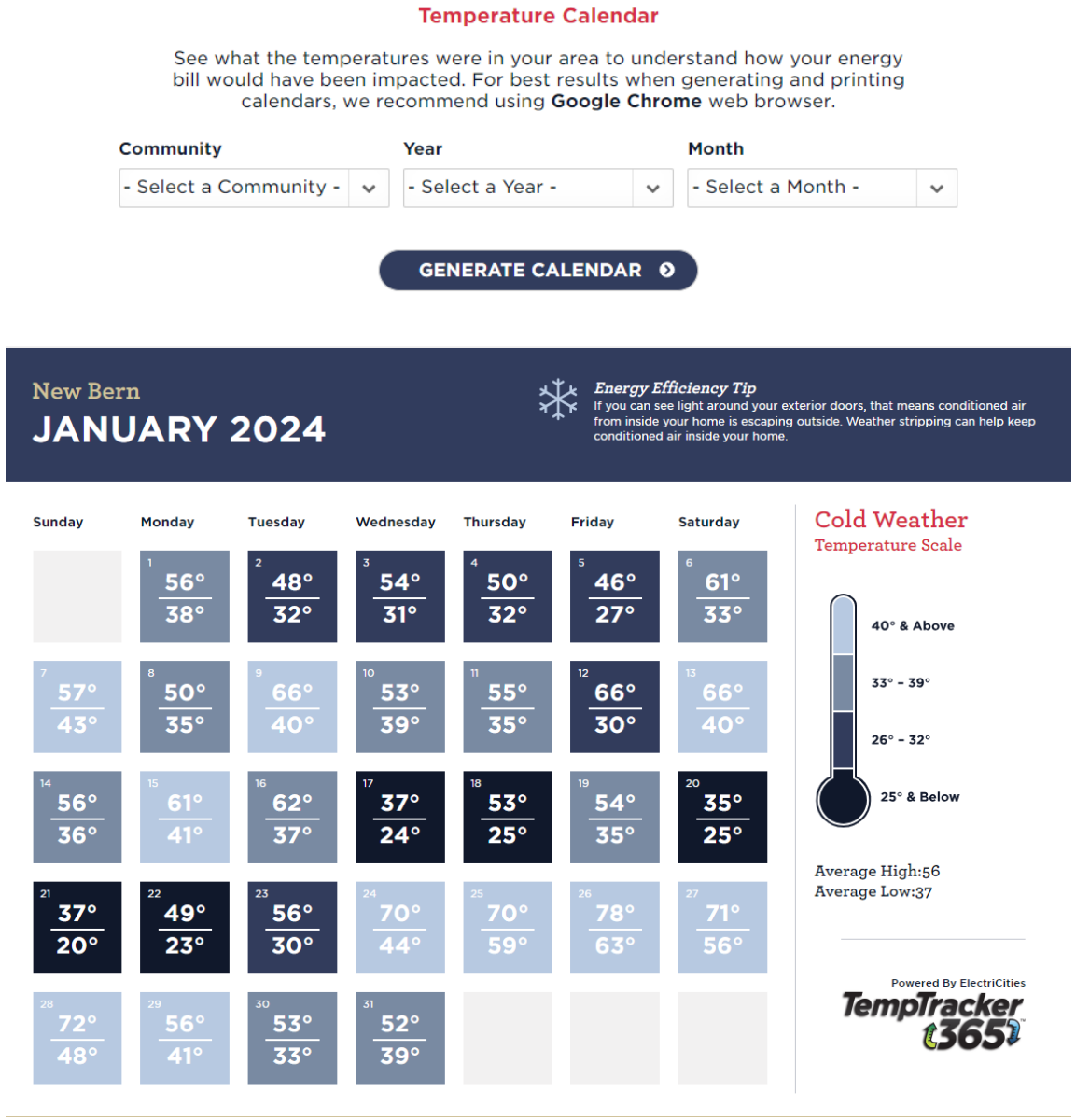


Smart Meter Data



TempTracker 365

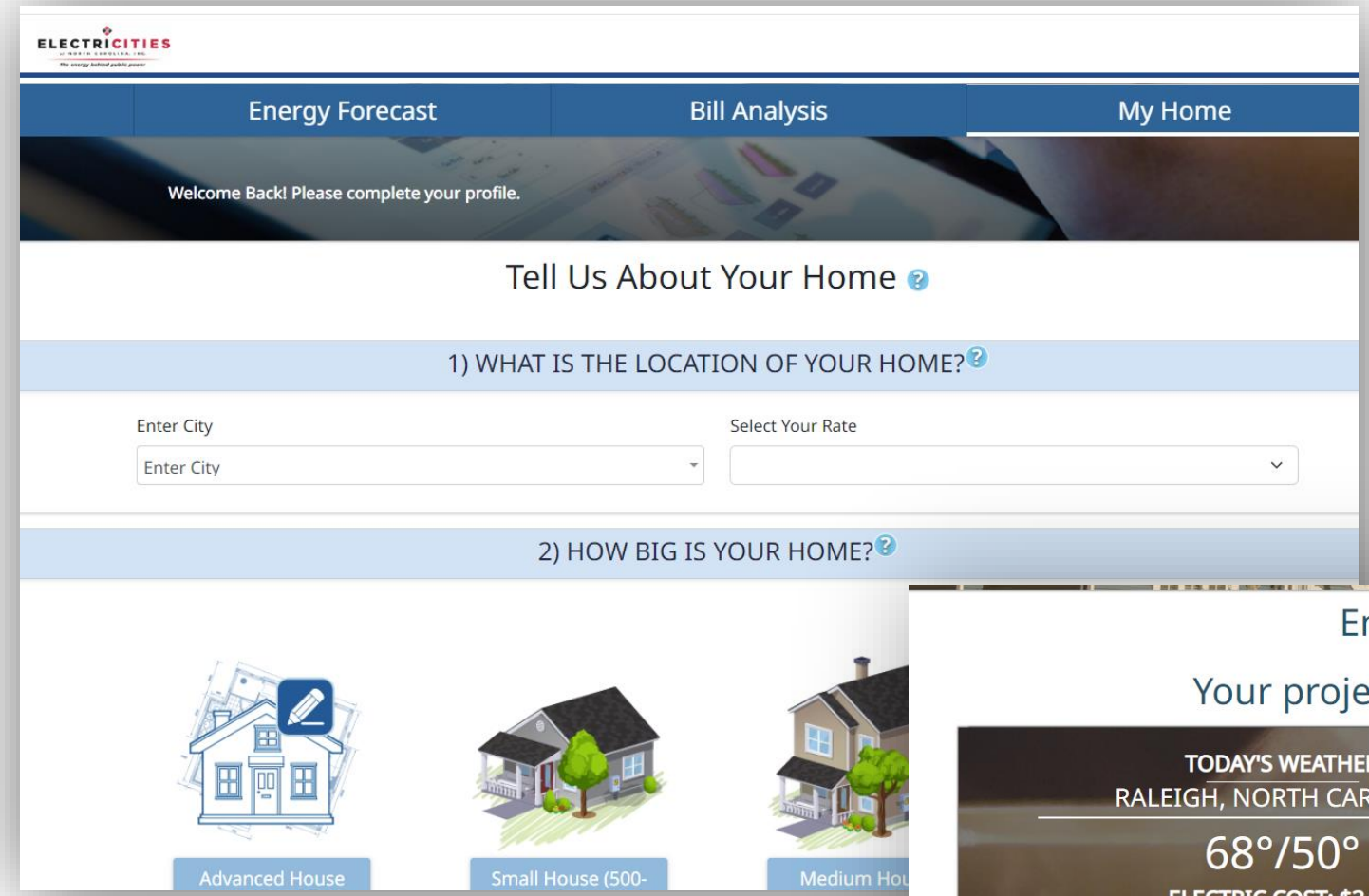
- TempTracker 365™ records daily high and low temperatures in ElectriCities member communities.
- Simply select the community, year, and month to generate a calendar to see the weeks and days that were extremely cold or hot.



Energy Forecast

- Use this tool to see how the upcoming weather in your area could impact your energy bill.

https://www.electricities.com/services/residential-services/


ELECTRICITIES
Energy Forecast
Bill Analysis
My Home
Welcome Back! Please complete your profile.
Tell Us About Your Home
1) WHAT IS THE LOCATION OF YOUR HOME?
Enter City
Enter City
Select Your Rate
2) HOW BIG IS YOUR HOME?
Advanced House
Small House (500-
Medium Hou


Energy Forecast - Electric Cost
Your projected Electric cost for this week is $26
TODAY'S WEATHER
RALEIGH, NORTH CAROLINA
68°/50°
ELECTRIC COST: $3.50
THIS WEEK'S FORECASTED ELECTRIC COST*
$26
* Costs are estimates based on your home's profile and the current forecast.

Energy Audits

Residential

- Visual checks of windows, insulation, moisture, air leaks
- Temperature checks, infrared scans
- Review weather history, customer comfort settings, equipment operation
- Review kWh history, weather, trends, city rep
- We provide an electronic report

Energy Audits

Commercial

- Similar review of equipment and settings as residential
- Often scheduled when a business is concerned about high bills or when they are looking for general energy efficiency tips
- Our team will schedule the audit with the business, and coordinate with city staff to attend
- We provide a report of findings for each audit

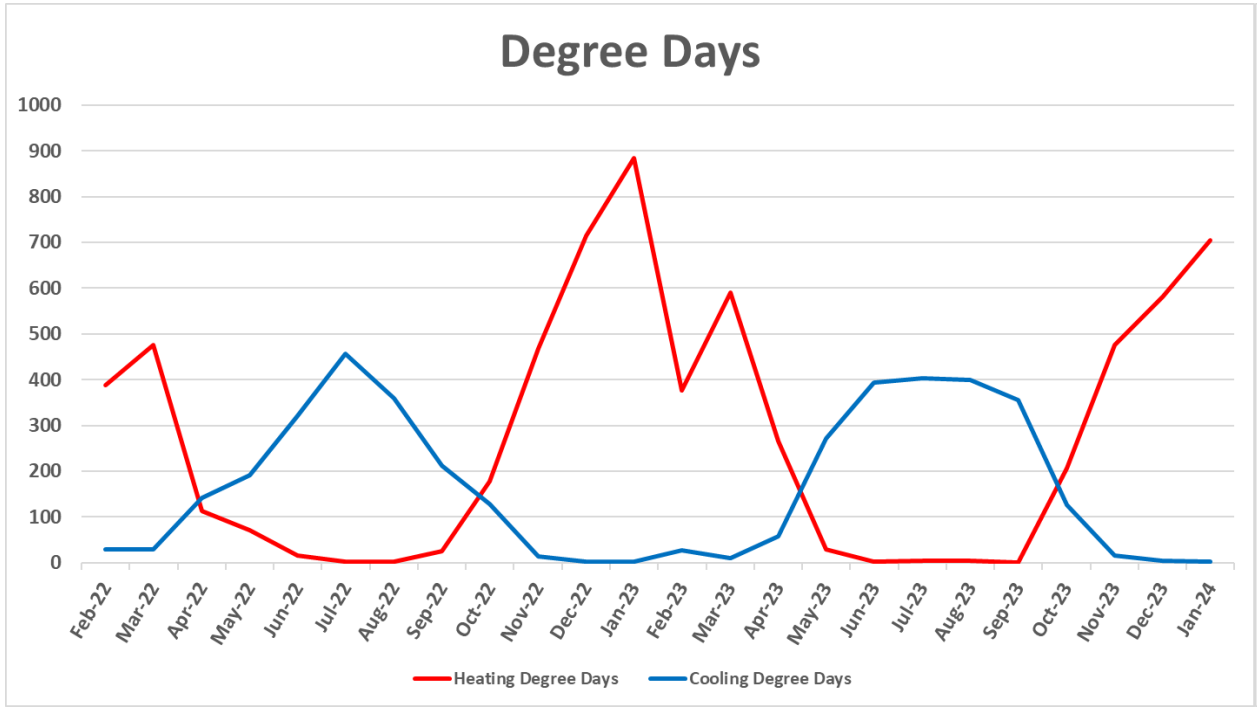
Solutions and Advice to Give

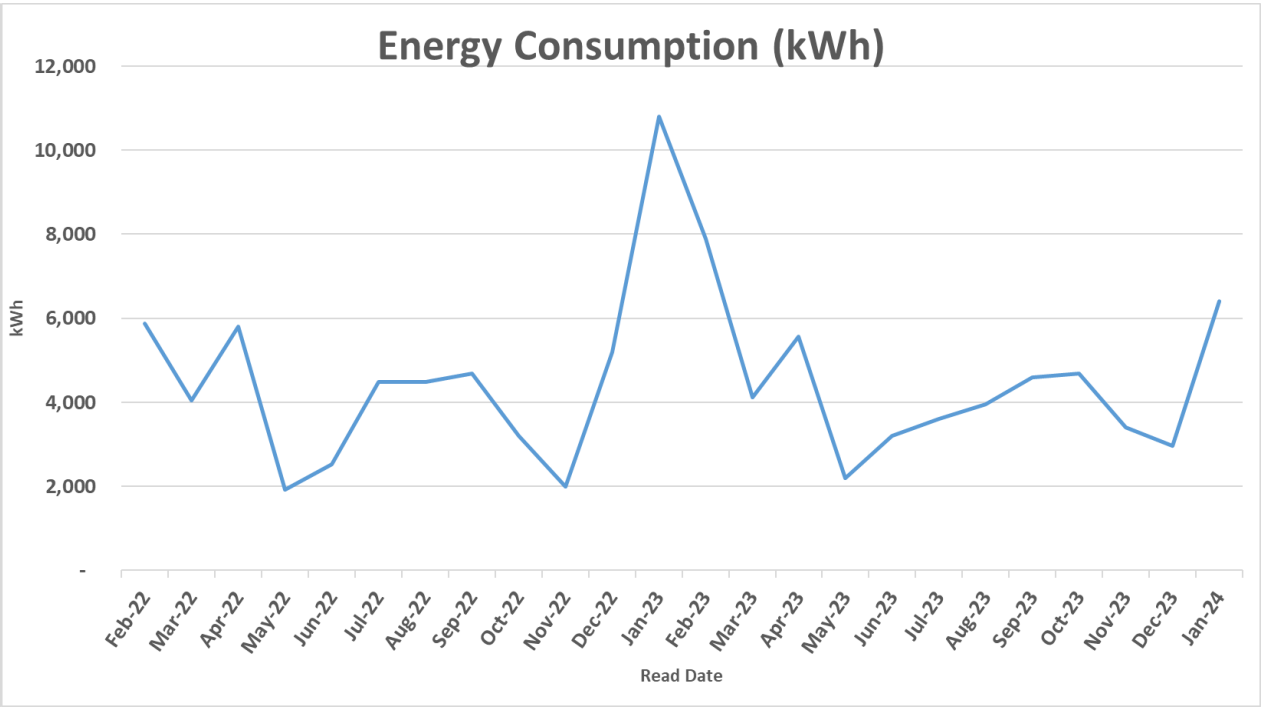
HVAC Recommendations

- Biggest impact on utility costs
- DOE Recommended Thermostat Setpoints
  - 68°F heating / 78°F cooling
  - ~3-5% HVAC energy savings for every degree up/down
- Impact of Weather (HDD/CDD)
- Periodic Service by qualified technician
- Return filters checked monthly
- Age and efficiency of equipment
- Heat strips and auxiliary heat
- Supply and return temps
- Is thermostat maintaining setpoint?

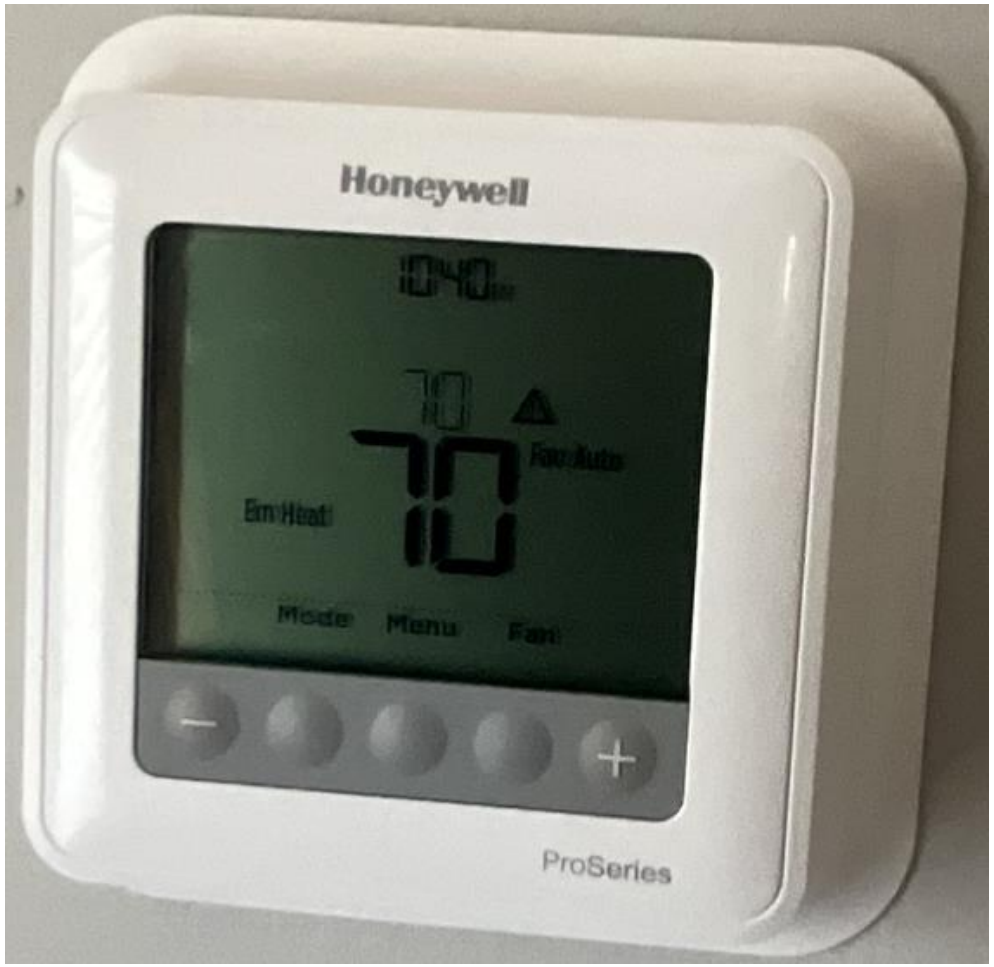
HVAC

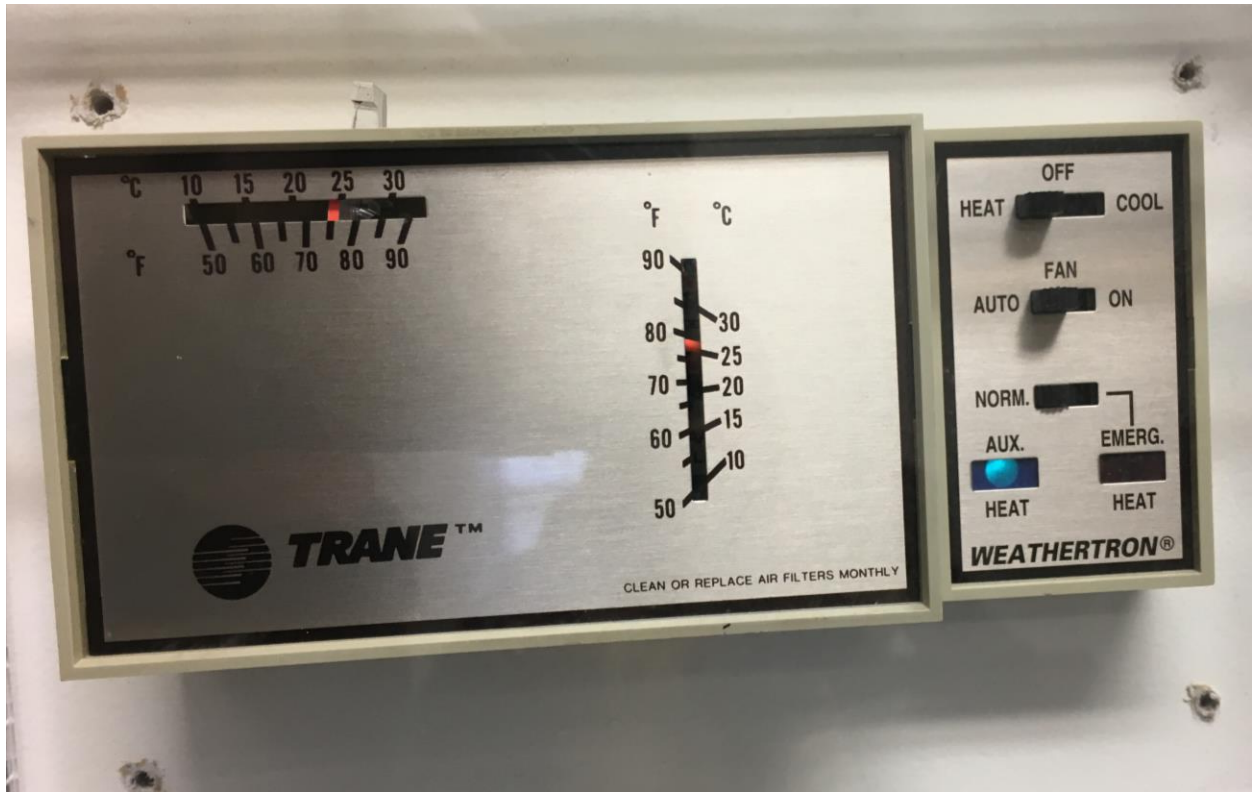
Impact of Weather on Monthly Energy Consumption



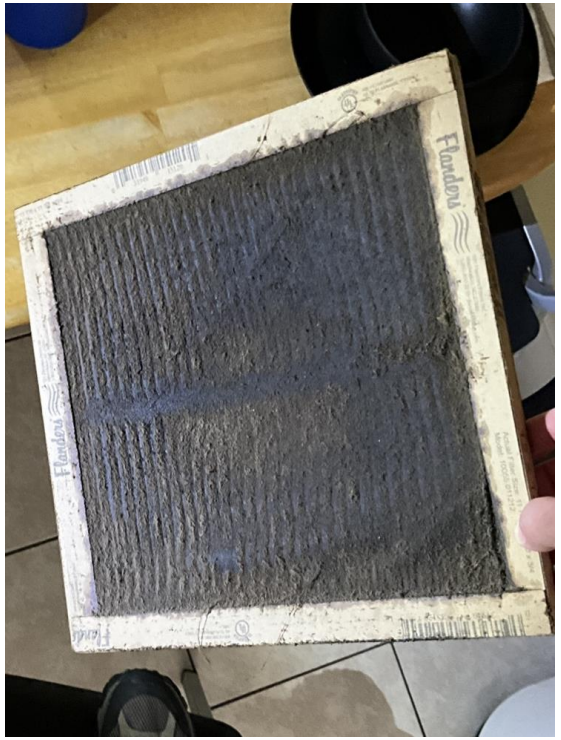


AC Recommendations – Thermostat Settings





HVAC Recommendations – Filters



HVAC Recommendations-Filters

Thermostat Recommendations

- Recommended setpoints
  - Heat – 68
  - Cool – 78
- Set it and forget
  - Commercial Considerations
- Set fan to Auto
- Avoid Emergency/Auxiliary Heat
- Smart thermostats allow more control flexibility

Water Heaters

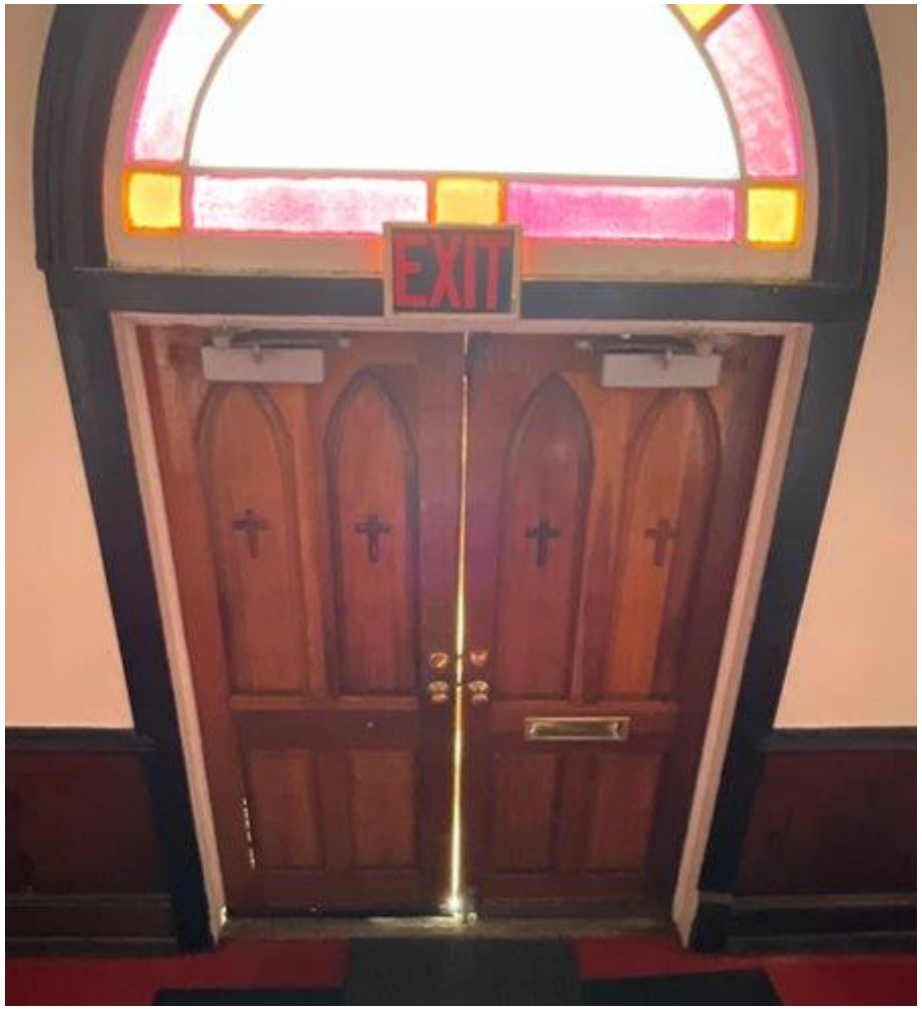
- As a rule of thumb, water heaters should be set no higher than 120 degrees

- You can advise customers to use the vacation setting or turn it to the lowest temperature when away for more than a few days.

Insulation/ Building Envelope

- **Unsealed areas result in...**
  - **Heat gain in summer months**
  - **Heat loss in winter months**
  - **Both increase the work needed by HVAC**
- **Properly seal openings between conditioned and unconditioned spaces**
- **Ensure external openings are sealed**
- **If you can see light, it is <u>NOT</u> sealed**

Insulation/ Building Envelope



Windows

- Ensure windows are properly closed/sealed
- Better off sealing what you have
  - Double pane windows are more efficient than single pane but...
  - Long payback if you are just considering energy savings
- Cold weather
  - Repair/replace storm windows (older homes)
  - Close curtains at night to reduce drafts
  - Caulk
  - Add low-E film to keep heat in
- Warm weather
  - Close curtains on south and west facing during the day
  - Use white drapes, shades, blinds to reflect heat away
  - Install awnings on south and west windows for additional shade
  - Install reflective films on south facing windows to reduce solar gain

Windows

Windows

LED Lighting

The LED advantage

- **LEDs are very energy efficient, using up to 80% less energy than conventional lightbulbs**

Replacement strategy

- **Start with high usage areas**

- **Lighting rebate program in Agency 1 for C&I customers**

LED Lighting

LED Lighting

It All Adds Up

Understanding how much your household appliances cost helps you manage your bill.

Appliance	Cost*
Space Heater (1,500-watt)	$45.00
Air Conditioner (room unit)	$27.00
Attic Fan	$1.88
Ceiling Fan	$2.25
Clock	$0.20
Clothes Dryer	$6.77
Clothes Washer	$1.02
Coffee Maker	$1.20
Computer (desktop)	$6.00
Computer (laptop)	$0.75
Curling Iron	$0.09
Dehumidifier	$1.40
Dishwasher	$2.84
Electric Blanket	$2.40
Electric Frying Pan	$1.56
Freezer (-10 yrs old)	$8.65
Freezer (+10 yrs old)	$16.00
Hair Dryer	$0.30
Heat Pump (3 tons)	$104.20
iPad	$0.11
iPhone	$0.50

Appliance	Cost*
Iron	$0.50
LED Christmas Lights	$1.63
Lightbulb (LED)	$0.08
Lightbulb (Incandescent)	$0.46
Microwave	$3.25
Pool Pump (1 hp)	$84.00
Radio	$0.90
Refrigerator (-10 yrs. old)	$5.59
Refrigerator (+10 yrs. old)	$8.93
Sewing Machine	$0.11
Stove (cooktop and oven)	$12.86
Television (55 inch LED)	$1.25
Toaster	$0.35
Vacuum Cleaner	$0.30
Water Heater (40-50 gal; 3 ppl)	$38.66
Cable Box	$3.00
CPAP Machine	$3.00
Oxygen Concentrator	$9.00
Xbox	$2.00
Whirlpool Tub	$20.00

*Cost per month assumes average electricity cost of 12.5 cents per kWh. Costs are approximated; you may use more or less electricity depending on how efficient your appliances are, how well-insulated your home is, the number of people in your home, and your lifestyle.
*https://www.eia.gov/electricity/annual/

ELECTRICITIES of NC

Visit www.ElectriCities.com to learn more.

Todo Suma

Comprender cuánto cuesta los aparatos de su hogar lo ayudará a administrar su factura.

*Supone un costo promedio de electricidad de 12.5 centavos por kWh. Los costos son approximados; Puede usar más o menos electricidad dependiendo de qué tan efficientes sean sus electrodomésticos, qué tan bien aislado esté su hogar, la cantidad de personas en su hogar, y su estilo de vida.
*https://www.eia.gov/electricity/annual/

Rev. 12.5.2022

Aparato	Costar*
Calentador de espacio de (1,500-vatios)	$45.00
Aire acondicionado (unidad de habitación)	$27.00
Ventilador de ático	$1.88
Ventilador de techo	$2.25
Reloj	$0.20
Secadora de ropa	$6.77
Lavadora de ropa	$1.02
Cafetera	$1.20
Equipo (escritorio)	$6.00
Computadora (portatil)	$0.75
Rizador	$0.09
Deshumidifacador	$1.40
Lavavajillas	$2.84
Manta eléctrica	$2.40
Sartén eléctrica	$1.56
Congelador (–10 años)	$8.65
Congelador (+10 años)	$16.00
Secador de pelo	$0.30
Bomba de calor (3 toneladas)	$104.20
iPad	$0.11
iPhone	$0.50

Aparato	Costar*
Plancha de ropa	$0.50
Luces LED de Navidad	$1.63
Bombilla (LED)	$0.08
Bombilla (Incandescente)	$0.46
Microonda	$3.25
Bomba de piscina (1 hp)	$84.00
Radio	$0.90
Frigorifico (–10 años antiguo)	$5.59
Frigorífico (+10 años antiguo)	$8.93
Máquina de coser	$0.11
Estufa (estufa y horno)	$12.86
Televisión (55 pulgadas LED)	$1.25
Tostador	$0.35
Aspiradora	$0.30
Calentador de agua (40-50 gal; 3 personas)	$38.66
Caja de cable	$3.00
Máquina CPAP	$3.00
Concentrador de Oxígeno	$9.00
Xbox	$2.00
Bañera de hidromasaje	$20.00

ELECTRICITIES of NC

Visite www.ElectriCities.com para obtener más información.

Communications Support

https://www.electricities.com/services/corporate-communications/bill-inserts-request-form/

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