

Twinfield
Home Energy Assessment

Name _____ (Optional)

Track annual electric use (tracking chart last page): Annual Hsehold Use: _____ Kwhrs
Statewide annual average household use: 6,800 Kwhrs

- If way above 6,800, probably can economically reduce use and cost of electricity
- Kwhrs (kilowatt hours) is a measure of electrical energy used. Your use is shown on your utility bill

Track annual fuel use (tracking chart last page)

Determine total annual BTUs/year used to heat your home by multiplying the BTU value of the fuel(s) used by the amount of fuel used each year.

Wood	22,000,000 BTUs/cord	x	_____ cords/yr	_____
Oil	138,000 BTUs/gallon	x	_____ gallons/yr	_____
Propane	91,000 BTUs/gallon	x	_____ gallons/yr	_____
Pellets	16,000,000 BTUs/ton	x	_____ tons/yr	_____
Total	BTUs/yr			_____ (1)
Square feet (sf) of heated space (length x width of all heated space)				_____ (2)
Calculate total heat energy used (BTUs/square foot/year) (1)/(2)				_____

Expected total heat energy use for tight /insulated home (BTUs/sf/yr) 40,000

- Easy low cost improvements are probable if use is significantly over 40,000 BTUs/sf/yr
- BTU British Thermal Unit is a measure of heat energy

Air Sealing: (usually the attic followed by the basement are the priority areas)

- Review from basement to attic, preferably on cold windy day
- Check for daylight, draft detected by feeling, smoke device, or infrared red thermometer
- Check sealing around doors/windows, plumbing in basement and attic, around chimney, along top of foundation and at ceiling/wall connections
- Check for seal at top of outside and partition walls in old homes
- Record results on a separate page attached to this form.

Seal all openings in the basement and attic and around doors/windows with foam / caulk or weather strips. Apply plastic to inside of windows if needed to seal them

Insulation: (Attic insulation is the most important insulation)

Existing Attic Insulation: Cellulose ___ Fiberglass ___ Foam ___ Depth ___

Air seal below attic cellulose or fiberglass insulation? Y/N

- Current suggestion for new construction is 18 inches of fiberglass or 20 inches of cellulose. Most existing homes have up to 12 inches. Experts generally do not recommend adding fiberglass insulation to existing homes; cellulose or foam is preferred.
- Need to have an airtight seal between the heated space and the attic to prevent heated air being lost to attic. Properly installed sheetrock usually provides this seal

Existing Sidewall Insulation: Cellulose ___ Fiberglass ___ Foam ___ Thickness ___

- Current suggestion for new construction is 12 inches of fiberglass or cellulose

Heating System Thermostat Settings _____ Day _____ Evening _____ Night

Programmable Thermostat Used? _____ Yes _____ No

- Can save 5 to 7% with a 10 F nightly reduction.

Professional Home Energy Audit Completed? _____ Yes _____ No

- A professional energy audit is highly recommended. It costs about \$400 but there may be a \$150 incentive available.
- The audit will expose all the air leakages points in the home. These represent the biggest loses of heat energy and associated unnecessary fuel expense.
- The audit allows a homeowner to fully identify the improvements needed and the order to address them to get the best return of energy saved to money spent. It will identify the low hanging fruit.
- The audit will test the air leakage before and after the improvements to see what was accomplished for the money spent.

Water Heater Type/Size _____ Gallon Electric Tank _____ Gallon Gas Tank
_____ Heated by Boiler _____ On Demand (no tank)

Temperature Setting _____ Age _____

Insulation Blanket? Y / N Pipe Insulation? Y / N

- Heater blanket is only for electric water heaters. Blanket saves more energy on older, less insulated heaters than new heaters
- On demand systems do not store hot water so no losses from the storage tank

- Energy is saved by setting the heater temperature at 120 F instead of 140 F. This setting is usually adequate
- Energy is saved by using pipe insulation on cold and hot for a few feet from heater.

Clothes Dryer Use: Loads/Week _____ Age _____ Electric _____ Gas _____

Use Maximum Load Size? Y/N Use Clothes Hanging? Y/N

- The electric dryer is one of the largest electric users along with electric water heater
- Hanging clothes inside or outside can really save energy/money, particularly compared to electric dryers.
- Using maximum size loads rather than more smaller loads saves energy.

Clothes Washer Use: Use Cold Where You Can? Y/N. Maximize Load Size? Y/N

Showers: #/Week _____ Average Length _____ Low Water Use Showerhead? Y/N

- The flow rating of so-called low-water-use (LWU) showerheads varies; flows as low as 1.5 gallons per minute can provide good shower performance.
- Check flow with cut-off milk bottle (2 quarts in 15 seconds = 2 gallons/minute)

Computers/TVs/Appliances and Other Electronics:

How many Computer Set-ups _____ How many TV Set-ups _____

Do you have power strips that connect each computer and TV so these units and all associated equipment can be fully shut down by closing one switch? Y/N

Do you Use the power strips to fully shut down power when not in use?

Which of your appliances is “Energy Star” rated? _____

- TVs, computers and associated equipment may not shut down fully when their switch is turned off; rather they will stay in a standby state to be ready to play immediately when you turn it’s switch back on. This standby state takes electricity and it can be a substantial amount. All of this equipment should be connected through a power strip with a switch that shuts off all power.
- Measure electric use by TVs, computers and 110 Volt appliances using a low cost energy meter (available on a loan basis). See for yourself how much power is used by TVs/Computers that are supposedly turned off. Compare the energy use by the appliance to that used by a new energy star appliance.
- Use www.energyguide.com to review energy use by your appliances

Lighting: # Incandescent _____ # Compact Fluorescent Lamps _____ # Other _____

Family Cars: No 1 Car: Miles per Gallon _____ Miles per Year _____
 No 2 Car: Miles per Gallon _____ Miles per Year _____
 No 3 Car: Miles per Gallon _____ Miles per Year _____

Current Behavior

Energy use tracked	Y/N
Unused lights and appliances shut off including standby loads	Y/N
Washer/dryer loads maximized	Y/N
Weather strips maintained	Y/N
Heating system tuned up regularly	Y/N
Heating system thermostat setting reduced at night	Y/N
Showers limited in length	Y/N
Unused sections of house closed off from direct heating	Y/N
Hot water heater temperature reduced	Y/N
Refrigerator and freezer temperatures increased (if appropriate)	Y/N

Free Home Energy Evaluations Available

Twinfield would like to train students to do preliminary energy evaluations of homes and provide this service, with appropriate supervision, to several homeowners. This should help some homeowners better understand possible energy issues in their home and give students some valuable experience in this important and expanding field. The Marshfield and Plainfield Energy Committee has performed similar energy home visits at about 75 homes and homeowners appreciated the additional information and suggestions it provided.

Would you and your parents/guardians be willing to have the student team visit your home and perform the assessment? Yes/No

Please contact Rich Phillips at 454-7702 krphil@myfairpoint.net if you are interested or want additional explanation.

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Resident Energy Use Tracking Form

Year

❖ **Monthly Energy Purchases**
(From utility bills and other invoices)

	Electricity	Gasoline	Oil Heat	Propane Heat	Wood Heat
	Kwhrs Elec	Gallons Gas	Gallons Oil	Gallons Propane	Cords Wood
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Annual					

❖ Enter total of all deliveries in the month received. (no delivery; no entry)