EPRI wants to help you understand how you use electricity in your home so that you can identify ways to use it more efficiently and effectively. EPRI is working with your Initiative Administrator to make available to you a Watts Up?\textsuperscript{1} meter to help you measure how much electricity individual appliances and devices in your home consume. It’s as easy as 1-2-3, and you will find results insightful and actionable.

Once you have completed your electricity usage audit, you can optionally download the data to your computer before you return the meter to EPRI. Alternatively, you can wait for the report that we will deliver to your Initiative Administrator.

The electric device measurements you collect will be combined with those of others to create an overall picture of household electricity usage patterns, both the typical level and the diversity among consumers. We will analyze your measurements, compare them with those of others, and provide you with a useful summary and tips on how to use electricity more efficiently.

These data will help EPRI identify opportunities to improve device efficiency. We appreciate your participation in the Initiative. But don’t worry; we will protect your identity at every stage of the process. The information you provide will be protected and used only combined with data from other households.

Are you ready to find out how you really use electricity? Just follow the three-step process described below and then take action to improve the energy efficiency of your home.

\textsuperscript{1} The Watts Up? device is a commercial product manufactured by Electronic Educational Devices, Denver Colorado, www.wattsupmeters.com
EPRI Home Electric Device Audit
It’s as easy as 1-2-3

Step 1. Short-term audit – usage ratings of your home’s pluggable electric devices

In this step you will establish an overview of how much electricity the devices in your home use. This will take 1-2 hours.

First: In each room in your home, indicate on the Short-Term Audit Form the plug-in devices in the room:

1. Check one of the listed device types on the Short-Term Audit Form or write-in a description of the device in the blank spaces to help the subsequent interpretation of the usage you measure (for example, secondary TV- seldom used; lamp, VCR, TiVo or other device operating on a timing device).
2. Note devices that are plugged into an extension cord or strip with other devices.

Next: Plug the Watts Up meter into a wall receptacle (but not into a strip cord that contains devices you are going to record) and then plug in, one-by-one, some of room’s electric devices, or device groupings, into the Watt’s Up meter and:

1. Record on the Short-Term Audit Form the plug-in time of day.
2. Turn the device on.
3. Observe and record the usage rate indicated (WATTS) on the monitor record the largest watt value you observed in the screening column on the Short-Term Audit Form.
4. If the device has several levels of operation, like a fan or a three-way lamp, record the reading in several representative levels of use.
5. Record the un-plug time (again, in minutes and seconds) on the Short-Term Audit Form.

Then: After you have completed these short term measurements, rank the devices (1= largest, 2= second largest, and so on) using the levels you recorded, in descending order of the level of watts you observed visually

a. First by room;
b. Then overall

Now, go to Step 2 – Long-Term Audit
Step 2. Long-term audit for selected plug-in devices

The short-term audit indicates the rate of electricity usage when the device is on. The short term reading is sufficient to estimate total energy use per month for devices that are seldom used, or used for very short periods of time. But, for devices, or groupings thereof, that:

- typically operate over an extended period of the day
- operate 30 minutes or more when they are used

These require continuous metering, called profiling, to get an accurate picture of energy usage.

First: Select three (3) devices you want to monitor during this long-term audit. These devices should be ones that are used regularly – at least 30 minutes a day – or ones that operate all day. Some suggestions as to which devices to record are as follows:

- TVs, VCRs, video games, or other entertainment devices.
- A home or portable computer system.
- Small to medium sized appliances like, a microwave, coffee maker, clothes washer, etc.
- Specialized devices like exercise equipment or heating pads.
- Floor fans or electric heaters that are used regularly.
- A small window-unit air conditioner (if it has a standard wall plug).

Then: Conduct the long-term audit for each of the devices you selected. Each device on the long-term list should remain plugged into the Watts Up device continuously for four (4) days, to establish a characterization of the typical profiles. That means that the long-term audit will take 12 days. Once you have selected the devices to record, all you have to do is:

1. Use the Long-Term Audit Form to record your information.
2. Start with the first device, and plug it into the Watts Up meter.
3. Record the start time and day.
4. Plug the Watts Up meter into an electric socket or extension. You can use another outlet in the wall plug the device you are monitoring is plugged into, but not an extension cord that the device you are measuring is plugged into.
5. Leave the device connected for four (4) days.
6. If for some reason you deviate from what is typical usage of the device, just make a note on the audit describing that deviation, but keep the device plugged in, on your schedule, so you can complete the audit.
7. After four (4) days have elapsed, move the Watts Up meter to the next device on your schedule and proceed as described above.

Once you have completed the Profile Audit schedule, follow the instructions on how to return the device and you audit forms to EPRI.
Step 3. Submit your Watts Up meter and audit forms to EPRI

First: Optional – download your data to your PC, if you want. Follow the instructions that came in the package. Lost the instructions? Check with Arlette.

Next: Prepare the package for return. Here is the packing list:
1. Place the Watts Up meter in the package sent to you.
2. Add the USB cord and any other peripherals cords that came with the meter.
3. Put the audit forms you completed and the completed survey of household characteristics in an envelope, seal it, and add it to the package.

Finally: Deliver the package to:

Arlette Haddad
EPRI
942 Corridor Park Boulevard
Knoxville, TN 37932
Tel 865-218-8122

• If you downloaded the data you collected, you can perform your own analyses of device electric use.
• Your administrator will send all the data collected to EPRI, which will analyze the measurements and summarize the results and send them to your Initiative Administrator.

Thank you for participating in EPRI’s Metering Plug-In Loads Program.
EPRI Home Electric Device Audit
Household Survey

All the information you provide will be treated as confidential

1. Do you own (__) or rent (__) your home?

2. Which best describes your home (select one)
   • (__) Apartment
   • (__) Condo
   • (__) Mobile home
   • (__) Single-family house
   • (__) Multi-family house (how many units are there? (___))
   • Other – describe (________________________________________)

3. How large is your home? (___) rooms and (____) square feet

4. Does your home have a:
   • (__) Garage: if yes, is it (__) attached or (__) detached?
   • (__) Attic
   • (__) Basement

5. What year was your home built (___)? Last remodeled? (___)

6. How is your home (check all that apply):
   • Heated?: (__) Electric (__) oil (__) gas or propane (__) other _______
   • Air conditioned? (__) Central (__) window-number of units (___)

7. You and your family:
   • How many adults are living in your home?
     • Under 30 (___)
     • 31-50 (___)
     • Over 50 (___)
   • How many children and young adults are living in your home?
     • Under 5 years (___)
     • 6-10 years old (___)
     • 11-15 years old (___)
     • 16-20 years old (___)
8. Household income (average of last two years)
   • Under $20,000/year
   • $20-39,000/year
   • $40-69,000/year
   • Over 70,000/year

9. Electricity usage:
   • Attach electric bills of the most recent 12 months or indicate below the
     monthly bill amount and electricity usage (kWh)

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10. Electricity Usage Quiz – Answer True (T) or False (F)

   • (___) The energy used to produce light in an incandescent bulb is about 25% of the energy in the fuel (e.g. coal) used to generate it?

   • (___) A compact florescent bulb uses approximately 1/3 as much electricity as a conventional incandescent bulb.

   • (___) A plasma TV uses about the same amount electricity as an equally-sized LCD display TV?

   • (___) The set-top cable TV box uses more electricity than the typical refrigerator.

   • (___) The fastest growing element of household electricity usage in the U.S. is air conditioning.

Thank you for responding to the survey.
Guide to Using the Watts Up Meter

About the Watts Up Meter
The Watts Up meter is a scientific instrument designed to allow the collection of plug-load electricity usage in a variety of settings easily and quickly.

The device you have has been preprogrammed to collect specific information, including electric usage in Watts over continuous time intervals. When you plug it in, it starts recording immediately, even if there is not device plugged into the meter itself.

So, do not plug the Watts Up meter into a wall receptacle or any outlet until you are ready to start a device measurement, and unplug the Watts Up meter when that measurement has been completed.

If you leave it plugged in between measurements, the data register may become overloaded and result in your measurement data being compromised.

The Watts Up meter is an expensive instrument that we intend to make available to many households to help people better understand how they use electricity, and to develop a database that serves research and program needs of EPRI and its member utilities. Please use the device cautiously, and keep it safely stored between measurements.

Taking Baseline Measurements
Plug the Watts Up meter into a wall outlet. You are now ready to plug the device you wish to measure into the Watts Up meter. The meter will read the electricity usage of your plugged in device and will display it. Wait five minutes to allow the meter to collect and store enough data from your device and to display the average Watt value. Record your observation and unplug the device from the meter, and the meter from the wall outlet. You are now ready to move on to the next device you have chosen to measure. Plug it in for 5 minutes and record the constant Watt consumption it displays. Always remember, however, to unplug the device from the meter and the meter from the wall before you move on to the next device.

Taking Profiling Measurements
Follow the same instructions as above, but leave the device plugged into the Watts Up meter for the scheduled profiling period, and unplug the device form the meter and unplug the meter until your start the next profiling measurement.

Caution- Plug in only devices that are rated at under 1,500 Watts
The Watt’s Up Meter is designed to measure the electricity consumption of household devices rated at 1,500 Watts or less. While most plug loads in your household draw less than 1,500 Watts. Here is a list of some devices you might have in your home that exceed that threshold, and should not be plugged into the Watt’s Up meter:
1. Hair dryers that are rated at above 1500 Watts, for example; ConAir 1875 Watt Full-Size Hair Dryer
2. Portable electric heaters that are rated above 1500 Watts. However, many home portable electric heaters are at or below 1500 Watts, and can be plugged into the Watt’s Up
3. Several devices plugged into a strip extension cord or other multiple outlet device that add up to over 1,500 Watts.