# GREEN OFFICE RESOURCE: BATTERIES

*When it comes to battery use and disposal, go back to the basics:* ***rethink, reduce, reuse, recycle.***

**Battery types**:

- Lead acid (Pb) Batteries - Cars, trucks and emergency lighting
- Nickel Cadmium (NiCd) Batteries - Cordless phones, tools and two-way radios
- Nickel Metal Hydride (NiMH) Batteries - Camcorders, cameras and bar code scanners, standard rechargable batteries
- Lithium Ion (Li Ion) & Lithium Polymer (Li Poly) - Cell phones and laptops
- Single use batteries (alkaline, lithium, silver oxide, zinc-air, zinc-carbon, and zinc-chloride) – AA, AAA, 9V, D-cell and button cell

*Learn More: Battery Recycling Guide from Call2Recycle*

**Rethink:** In our plug-in, light up world, energy is required everywhere, all the time. Rethink your need to electrify. Can you go without the gadget in the first place? Or, is there a nonelectric, non plug-in, low tech alternative? (Examples: broom vs vacuum, regular vs electric toothbrush, light-up kids shoes…)

**Reduce:** How can you reduce dependence on batteries?

- Seek options that plug in, rather than require a battery (for example, a plug-in mouse rather than a wireless one).
- Make do without or seek a device that does not require electricity.
- Turn off your device when not in use to conserve the battery life.
- Store batteries in dry, climate controlled storage for extended life.
- Don't stockpile batteries beyond what you will need. They do have a shelf life!

**Reuse:** Seek rechargeable batteries where possible. Reduce the number of batteries you use overall through thousands of re-charges.

**Recycle:** Once your rechargeable batteries no longer hold a charge, it is critical that you seek out proper recycling. Rechargeable batteries contain toxic materials, including heavy metals. If not handled properly, rechargeable batteries can pollute drinking water, ignite and cause fires, or generally degrade the environment. **Never put batteries in single stream recycling.** A single battery in a recycled center (also known as material recovery facility) can cause a very destructive fire. In fact, incidences of fires caused by lithium-ion batteries have been on the rise at recycling centers, garbage trucks, and landfills.

**Responsibly dispose:** Before the Mercury-Containing and Rechargeable Battery Management Act (or "Battery Act") was passed in 1996, alkaline batteries contained mercury, a toxic chemical that is harmful in the environment. Modern alkaline batteries contain manganese, steel and zinc; they do not contain mercury and are no longer considered a hazardous waste by the EPA.

It is possible to recycle alkaline batteries, but due to both the difficulty and expense of recovering materials from them, this is cost prohibitive. Some companies and municipalities do offer recycling programs for alkaline batteries and there are also programs where you can mail in alkaline batteries for recycling (for a fee). Note that some companies that claim to "recycle" all batteries end up landfilling or incinerating alkaline batteries. Locally, MRC accepts alkaline batteries as a drop off at their stores and charges $1/pound for disposal.

**Battery Selection:** According to research and testing by the *Business Insider*, these are the recommended best picks for a variety of different conditions:


- Best overall: AmazonBasics Rechargeable Batteries
- Best for frequent use: Panasonic Eneloop 2100 Cycle Ni-MH Rechargeable Batteries
- Best eco-friendly: Energizer Rechargeable Batteries
- Best high-capacity: AmazonBasics High-Capacity Rechargeable Batteries
- Best affordable: Tenergy Rechargeable NIMH Batteries

*Read more about why…*

Many factors may contribute to your ultimate battery selection, but some nice features to keep in mind include:

- Recycled content: the Energizer Rechargeable Batteries now contain 4% recycled content from previously recycled batteries.
- Solar charge: the AmazonBasics and Eneloop both come from factories in Japan precharged with solar energy.
- For batteries that you anticipate using and recharging regularly, look for a high charging capacity (1000 – 2100 charges)

**Managing Rechargable Batteries:** The type of charger you purchase can impact the lifespan and performance of your rechargeable batteries – they don't over charge the batteries, they can extend the life of the cells, and they are easy to use! Learn more about the chargers researched and tested by the *Business Insider*. Their top pick is the Nitecore D4 Charger.

There are some tricks to managing your charge cycles and processes to minimize inconvenience and waiting for recharge time. For example, if the main use for batteries in your offices is to power wireless mice and clocks, you could have a regular process where you periodically replace ½ of the mouse batteries in the office at the same time, charge those batteries, and replace the other half the next day. This way you would only need enough extras to cycle through half of your total battery count at a time, and you will always have some extras available. Avoid "high speed chargers", as they reduce the lifespan of your batteries.

Remember, unplug the charger when it is no longer charging to reduce risk of fire and prevent wasting additional energy through phantom draw. Some chargers shut off automatically – refer to the user manual for confirmation.

**Battery Recycling and Disposal at WashU:** Rechargeable batteries can be recycled by submitting a request to the Environmental Health and Safety Department (link to the form is single sign on protected). Read more about proper battery recycling and disposal at WashU here.

**Battery Recycling in St. Louis:** These locations offer free recycling for rechargeable batteries:
Batteries Plus: https://www.batteriesplus.com/t/recycling/battery
Home Depot: https://corporate.homedepot.com/newsroom/battery-recycling-one-million-pounds