**Rechargeable Battery Innovate-A-thon**

**Theme:** Promoting the Adoption of Rechargeable AA & AAA Batteries​

More mAh back up.

**Focus Topic:** Developing strategic initiatives to collaborate with the Portable Rechargeable Battery Association (PRBA) to enhance consumer adoption of rechargeable AA and AAA batteries through targeted messaging, social media engagement, membership programs., and public awareness campaigns. https://www.prba.org/

**Problem Statement:**

The widespread use of disposable alkaline batteries poses significant environmental challenges due to their single-use nature and the accumulation of waste. Despite the availability of cost-effective and efficient rechargeable alternatives, consumer adoption remains low. The Portable Rechargeable Battery Association (PRBA) has primarily focused on legislative, regulatory, and standards issues at various governmental levels . However, their messaging has not effectively reached or influenced the general consumer base. Ed2S.org, a 501(c)(3) nonprofit organization dedicated to educational initiatives, aims to collaborate with PRBA to bridge this communication gap. The goal is to develop compelling core content to encourage next generation consumers to switch from disposable to rechargeable AA and AAA batteries. Additionally, Ed2S.org proposes the creation of a tiered membership program to engage environmentally conscious individuals and groups. Through this partnership, Ed2S.org seeks to manage the program, receiving from PRBA (or similar) membership proceeds enabling Ed2s core mission, & thereby promoting sustainable battery usage and expanding PRBA's consumer outreach.​[PRBA](https://www.prba.org/?utm_source=chatgpt.com)

Submittals

1. Slide Deck - 10 slides - reference format to be shared, include: financial ask that optimizes value proposition(cost benefit analysis )
2. Brochure- 1 page folded in third, both sides
3. Sample Video - 10 sec to 2 minutes - includes concept, storyboard, photos and editing.
4. Executive Summary
5. Environment beneficials against chemical waste
6. Health hazards
7. Additional - Develop specific recommendations for creation of a public facing membership group for environmental people and groups with a minimal annual fee—ReusableAlliance.org

**Industry Background Information (Priorities and Observations):**

**Environmental Impact of Disposable Batteries:** Disposable alkaline batteries, introduced in the late 1960s, have become a standard power source for numerous electronic devices. However, their single-use design leads to significant environmental concerns, as they contribute to landfill waste and potential soil and water contamination. The end-of-life disposal of these batteries poses challenges, as there is effectively no "away" when they are discarded, resulting in ongoing environmental problems.​

**Advancements in Rechargeable Battery Technology:** Since the 1990s, rechargeable battery technologies such as Nickel-Cadmium (NiCd), Nickel-Metal Hydride (NiMH), and more recently, Lithium-Ion (Li-Ion) have been developed. NiMH batteries offer a more environmentally friendly alternative to NiCd but operate at a lower voltage (1.2V compared to 1.5V for alkalines), which can affect device performance. The latest Li-Ion rechargeable batteries provide the desired 1.5V output, aligning with standard device requirements, though they currently come at a higher price point. Despite these advancements, consumer awareness and adoption remain limited.​

Cost difference?

**Economic Considerations:** The initial investment in rechargeable batteries and compatible chargers can be a barrier for consumers. For instance, purchasing a set of rechargeable batteries and a charger may cost approximately $40. However, this upfront cost is offset over time, as rechargeable batteries can be used multiple times, leading to cost savings and reduced environmental impact. Communicating these long-term benefits is crucial to encourage consumer transition from disposable to rechargeable options.​

Promote through retailers

**Critical Research Questions (Secondary Research):**

1. **Consumer Behavior Analysis:** What are the primary factors influencing consumer reluctance to adopt rechargeable AA and AAA batteries?​
2. **Effective Messaging Strategies:** What types of messaging and content have proven successful in shifting consumer behavior toward more sustainable practices in similar industries?​
3. **Social Media Engagement:** Which social media platforms and content formats are most effective in reaching and engaging target demographics for environmental campaigns?​
4. **Membership Program Design:** What incentives and membership structures have been effective in building community engagement and recurring support for nonprofit environmental initiatives?​
5. **Partnership Models:** How can nonprofit organizations effectively collaborate with industry associations to achieve mutual goals related to consumer education and environmental sustainability?​

**Find similar case studies and what kind of messaging was successfully used to shift consumer’s behavior**

**Research with Stakeholders (Primary Research):**

To gain insights and support for the initiative, student teams should engage with the following stakeholders:

1. **Portable Rechargeable Battery Association (PRBA):**
   * *Contact Title:* Executive Director​ https://www.prba.org/george-kerchner/
   * *Reason for Contact:* To understand PRBA's current consumer outreach efforts, willingness to collaborate on new initiatives, and potential support for the proposed membership program.​
2. **Battery Manufacturers (e.g., Duracell, Energizer):**
   * *Contact Title:* Sustainability Manager​
   * *Reason for Contact:* To explore manufacturer perspectives on consumer adoption of rechargeable batteries and potential partnerships in promoting sustainable products.​
3. **Environmental Advocacy Groups (e.g., Sierra Club, Earthjustice):**
   * *Contact Title:* Community Engagement Coordinator
   * *Reason for Contact:* To learn from successful environmental campaigns and strategies for mobilizing public action toward sustainable practices.​
4. **Retailers (e.g., Best Buy, Amazon):**
   * *Contact Title:* Product Sustainability Lead​
   * *Reason for Contact:* To discuss retail strategies for promoting rechargeable batteries and potential in-store or online educational initiatives.​
5. **Ed2S.org Leadership:**
   * *Contact Titles:* Paul Efron (CEO)
   * *Reason for Contact:* To gain insights into Ed2S.org's mission, capabilities, and vision for the collaboration with PRBA.​

**Primary Research Approach for Students:**

* **Preparation:** Familiarize with each organization's mission, past initiatives, and current efforts related to environmental sustainability and consumer education.​
* **Outreach:** Craft personalized communication highlighting the mutual benefits of collaboration and the specific objectives of the research.​
* **Engagement:** Schedule interviews or meetings to discuss insights, experiences, and potential partnership opportunities.​
* **Documentation:** Record key takeaways, recommendations, and any resources provided during engagements to inform the development of the presentation package.​

**Additional Questions to Ask:**

* **What challenges have been encountered in promoting consumer adoption of sustainable products like rechargeable batteries?**
* **What percentage of the population in the U.S., developed regions, and globally use rechargeable batteries compared to disposable ones?**
* **What are the current annual sales figures for rechargeable vs. disposable AA and AAA batteries across major markets?**
* **Why do consumers and businesses choose disposable batteries over rechargeables, despite the environmental and financial benefits of rechargeable options?**
* **What would be the potential business and operational implications for battery manufacturers if a significant portion of the market shifted toward rechargeable battery use?**
* **What materials are required to manufacture both disposable and rechargeable batteries, and what are the environmental implications of their disposal?**
* **What strategies and campaigns—both successful and unsuccessful—have been used to raise awareness and adoption of rechargeable batteries, and what was the reach and impact of each?**
* **How much money can the average battery user save by switching from disposable to rechargeable batteries over time?**
* **Which organizations are currently focused on promoting rechargeable battery use, including the Portable Rechargeable Battery Association (PRBA), and what is their financial health, nonprofit status, public image, industry influence, impact, and ability to influence consumer behavior directly?**

**Additional reference material from Paul:**

**Example Message:**

If you look at the end of the life cycle of disposable alkaline batteries, after one use they are thrown away…but there is no ‘away’, just an environmental problem. There is no doubt that minimizing the rate of disposal of batteries and their heavy metals is an environmental benefit. Today’s shelves have an easy and very cost effective solution with rechargeable batteries. The rechargeable battery costs roughly 1.5 times that of a disposable alkaline, which means break even happens on the 2nd use of the rechargeable battery. Every use after that is basically free (except for electricity), and today’s rechargeable batteries can be used over and over many times. Switching to rechargeable is a small behavioral change with a significant beneficial environmental impact. For a small investment of roughly $40 (subject to change with tariffs) you can buy 8 AAA, 8 AA & a charger. These can be used when swapping out the batteries in your devices when they die. After that you won’t be throwing away batteries, or at least not nearly as fast, but instead recharging them.

State of the shelf for AA & AAA batteries:

Disposable Alkaline batteries came on the scene in the late 1960s. They were the standard and electronic devices are generally designed for their 1.5 Volts. Many devices use multiple batteries and are usually placed in series so the voltage adds. Four alkaline batteries in series would have a voltage of 6 Volts.

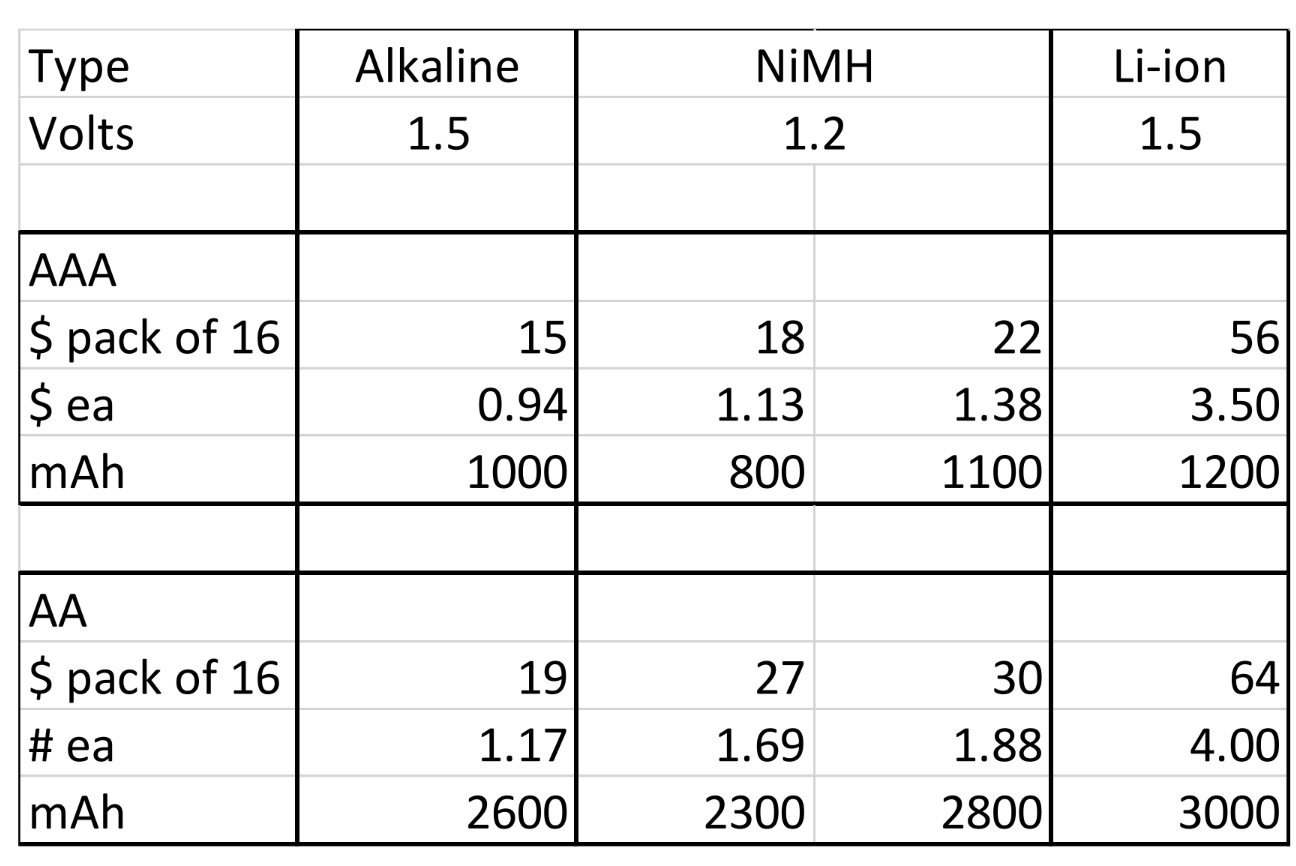
In the 1990s Rechargeable Nickel-cadmium (NiCd) & Nickel-metal hydride (NiMH) batteries come on the scene. Nickel-metal hydride were developed as a more environmentally friendly alternative to nickel-cadmium batteries. After much improvement over the years, NiMH have gotten pretty good and are currently available in small and large capacity (mAh = (milliAmp-hours). Unfortunately NiCd & NiMH are at 1.2 Volts. Four NiMH batteries in series would have a voltage of 4.8 Volts (compared to 6 Volts for alkaline). These work ok on most devices but can be lacking in others.

Very recently (Li-Ion) rechargeable batteries became available in standard AA & AAA sizes. These solved the voltage problem and are at 1.5 Volts, but cost 2-2.5 times the price of NiMH. Their price will likely come down in time.

Chargers generally can charge AA or AAA and come in 4 or 8 slot styles and can be plugged pack of batteries or $12-$15 when purchased alone.

into both micro-USB or USB-C chargers.

Nimh nickel metal hydrite



<https://gamma.app/docs/Recharge-the-Future-The-Case-for-Rechargeable-Batteries-230y110h5qxpeuf>

https://docs.google.com/document/d/1h1Jz\_z8NfyAbFRPkDQighksSYiWDe56rTmAoTxn7lxU/edit?usp=sharing