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TRAINING ON HOW TO USE AND MAINTENANCE OF THE BATTERY SAFELY

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Abstract

Batteries are devices for storing electrical energy into chemical energy. According to the Encyclopedia Britannica, a battery is an electrochemical cell that converts chemical energy directly into electrical energy. People who use batteries have various backgrounds. especially education, ranging from uneducated people to highly educated people. So that the general public needs to know how to use and care for batteries safely. So that this service activity is so that the community understands how to use and care for safe batteries and how to properly dispose of battery waste. The impact of this service activity is that the community can understand how to use and care for safe batteries and how to properly dispose of battery waste so as not to cause environmental damage.

Keywords: Battery, Battery Usage, Tending Battery Safely.

INTRODUCTION

Batteries are devices for storing electrical energy into chemical energy, which is easy to transfer. According to the Encyclopedia Britannica, a battery is an electrochemical cell that converts chemical energy directly into electrical energy. Batteries transmit electrical energy from high potential to low potential to turn on an electronic device. Currently, batteries are widely used in everyday human life, for example, mobile phones, laptops, vehicles, lighters, etc. Because there are so many roles of batteries in our daily lives, people feel the need to understand how to use and maintain them.

People who use batteries also have various backgrounds, especially education, ranging from uneducated people to highly educated people, so the general public needs to know how to use and care for batteries safely.

According to Hamid et al (2016), it has been investigated how the manufacture of chargers to charge electrical energy in batteries is safe for the MSME scale so that the use of tools that use batteries as an energy source is safer and more secure and its lifespan is guaranteed.

Most people still think that battery waste can be mixed with other household waste. This is an inaccurate assumption. Special management is needed so that battery disposal does not have an impact on the environment. If the use, storage, and management of the battery are by the provisions of this five-star meal, it will not pose a danger (Damanhuri and Tripadmi, 2016).

Battery waste is included in B3 waste (Toxic Hazardous Materials), so special

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handling is needed for this waste. Public understanding of B3 regulations is still low, so people are less aware of efforts to reduce B3 waste (Santoso and Halomoan, 2022).

From the analysis of the situation mentioned above, it is necessary to disseminate information to the community about the importance of this problem and how the community should manage and dispose of used batteries according to the provisions so as not to harm the environment.

IMPLEMENTATION METHOD

The method used in this community service activity is carried out by delivering material and conducting simulations by giving examples directly to participants with several types of batteries that have been prepared by the presenters.

The participants were youths and young women in the community of RT 04/ RW021 Perum Graha Citra Mas, Tegal Besar Village, Kaliwates District, Jember Regency, and its surroundings.

The activity was carried out by presenting the material, then continued with simulations and questions and answers. The material provided is how to use and care for batteries safely until the disposal of used batteries. In this activity, more emphasis is placed on the discussion method so that the material can be better understood.

RESULTS AND DISCUSSION

This service activity was opened by Dr. Andi Sanata by giving an introduction, that almost all sectors of human life are now dominated by the use of batteries. From the small private sector to a large scale, everything uses batteries.

After the opening, the main event was continued, namely material on how to use and care for batteries and how to dispose of battery waste. This material was presented by Dr. Nurkoyim Kustanto, as shown in Figure 1.

Figure 1. Submission of Materials

In this activity, Dr. Nurkoyim delivered 3 materials

1. How to use the battery so that it lasts long and safely (Lystianingrum, 2021):
   - How to recognize the battery.

   To use the battery, you must know the types of batteries, where there are primary and

secondary batteries, there are batteries that can be recharged (charged) and do not need to be charged, and there are lithium-ion batteries, lithium NiMH, and carbon sinks.

- So that the battery used lasts a long time, the user must know the maximum current (Ah) from the battery so that when charging (charging) the battery does not overheat (hot). Therefore, you should not use a charger that is not suitable, for example, borrow a friend's charger that has different specifications.
- In terms of charger speed, when charging the battery, there are 2 kinds, namely fast charge, and slow charge. Fast charge charges the battery faster, but the higher current that causes the battery to heat up quickly can even cause the battery to explode which can endanger the user and the environment.
- Protect the battery should not be peeled off, because it can cause a short circuit (short circuit) or short circuit, this can also cause the battery to burn/explode.
- If there is a leaking battery, it must be disposed of immediately because the leak contains hazardous substances.
- Lithium-ion batteries, if charged and discharge at the same time, can explode and cause burns to the user.

2. How to care for the battery so that it lasts a long time and is safe (Susanti, 2019):
   - For the battery to last longer and be safe, it should use a suitable charger.
   - Safe charger is 1/3 ampere on the AH written on the battery, so it should not use full current.
   - When charging and discharging do not do it together so as not to heat up and it can cause the battery to be damaged quickly.
   - In addition, for long-lasting and safe battery life, keep the battery away from damp/wet places when storing.

3. How to dispose of dead batteries so as not to cause environmental pollution.
   - The type of battery used must be known so that the treatment when disposing of it can be prevented from causing harm. If lithium, the energy is greater than the carbon sink battery. So when throwing away the energy must be emptied so as not to burn. Don't let it be thrown away, it still contains energy.
   - If the battery is already leaking, don't mix it with water when disposing of it (a place that contains water) because the leak can dissolve in water and contain toxins, which can damage the ecosystem, especially water.
   - So used batteries are separated from other waste because it is more dangerous than other waste such as plastic.

In the question and answer session, many participants felt that they had made a mistake when using and managing the battery so far. So the discussion session went quite interesting. The question and answer session is shown in Figure 2.

Figure 2. Q&A Session

CONCLUSION

In general, the participants were very enthusiastic about battery maintenance. This can be seen from the many and varied questions related to how to care for the battery so that it is durable and safe. At the end of the activity, participants felt enlightened by the material and answers presented by the presenters.

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