LAFAYETTE Engineering Studies Student Policy Brief
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Decrease E-Waste and Save Consumers Money: Require Electronics Repairability

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Key Messages and Recommendation

- The average US household **spends $1,480/year on electronics**[1] and e-waste **costs PA $5.9M/year**[1,2] to recycle.
- **E-waste results in** environmental **contamination** and causes **health problems**[3].
- Right to repair legislation could **save families $330/year**[1] and **decrease e-waste substantially**[4].
- The Pennsylvania legislature should **pass House Bill 1152** in order to require all digital electronics manufacturers to provide reasonable documentation and sell tools and parts at a fair price, giving consumers the right to repair their digital electronics.

What to Know

Electronics repairability legislation is key to making digital electronics less expensive to repair and decreasing e-waste.

Introduction

Digital electronic equipment is defined by the Pennsylvania legislature as "A product that depends for its functioning, in whole or in part, on digital electronics embedded in or attached to the product." This is a big category of products. Right to repair is the idea that consumers should be able to easily and cheaply fix their devices and the government should protect that freedom. Right to repair legislation has been successfully implemented in Europe. Digital electronics are becoming less repairable, demand for them is increasing, and this is leading to a lot more e-waste. E-waste is harmful to both the environment and people, leading to air, water, and soil contamination and negative health outcomes like "change in thyroid function, cellular expression and function changes, adverse neonatal outcomes, changes in temperament and behavior, and decreased lung function". The graphs below show that global e-waste has increased about 20 million tons over the past 10 years (Figure 1) and that the United States contributes about 20% of that (Figure 2), about 4 million tons of e-waste. The issue of right to repair is urgent because there are bills being considered in the Pennsylvania legislature right now that address the problems of e-waste and consumer spending. Pennsylvania HB 1152 (The Digital Fair Repair Act) and HB 1757 (The Repairability Index Act) are some of the first proposed right to repair laws in the United States.

Figure 1: Amount of Global E-Waste Over Time

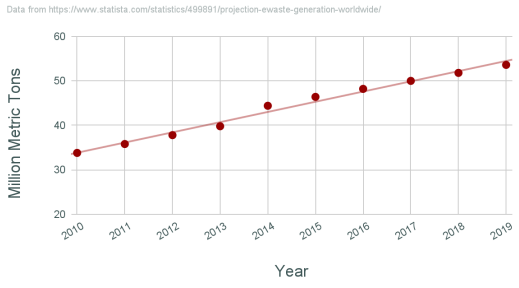
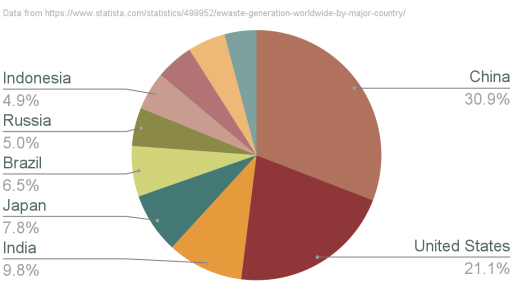


Figure 2: Amount of E-Waste per Country



[1] https://www.nakedcapitalism.com/2021/01/right-to-repair-saves-consumers-money-promotes-local-jobs-rather-than-global-supply-chains.html

[2] https://doi.org/10.1016/j.wasman.2021.01.023

[3] https://www.tonerbuzz.com/blog/e-waste-facts-statistics/

[4] https://greencitizen.com/electronic-recycling-costs-skyrocketing/

The Problem With Digital Electronic Equipment

The problem with digital electronic equipment is how the OEMs (original equipment manufacturer) handle the issue of repairing their products. Many OEMs make digital electronic equipment that is repairable, but design it in ways that make the repair very difficult for consumers. When a piece of digital electronic equipment breaks, a consumer can try to repair it themselves, have the OEM repair it, or throw it out. Because of the OEM's design, the first option is prohibitively difficult or expensive, so they resort to the other two. Having an OEM repair a product, when they offer it and are still in business, is also often expensive and difficult. Because OEMs are sometimes the only place to repair a product, they have an effective monopoly on that service, so they can charge whatever they want. Places for OEM repair can also be difficult to get to and can take too long to repair equipment. These circumstances affect everyone that has broken digital electronic equipment, but it especially affects those who rely on that equipment for their life and/or livelihood. For example, those with ailments that need digital electronic equipment to survive or function, or farmers whose farm equipment often include digital electronics that make it difficult to repair any part of the equipment and are far away from repair centers, but need the equipment functioning as much as possible to make a living. When a consumer throws out a piece of digital electronic equipment, it is usually not recycled. This means it contributes to local or global e-waste accumulation. E-waste is expensive and contributes to climate change and specifically affects those with vulnerable health, women, and people who live near repositories of e-waste. In the status quo, there are no laws in Pennsylvania that govern the right to repair. If no action is taken, consumers will continue to not be able to obtain documentation, parts, or tools for repairs, will continue to pay excessive rates for OEM repair, and dispose of fixable items, contributing to e-waste. This makes the status quo an unacceptable policy option.

What can be done?

House Bill 1757 AKA The Repairability Index Act would require that all manufacturers of new digital electronics disclose a repairability score on the packaging and establish standards to do so. It has been referred for consideration by the consumer affairs committee. This policy's effectiveness is low because it is hard to get high quality, self-declared scores from companies, but repair scores do influence customer behavior. It is an efficient policy, requiring almost low investment from the government. This bill adds a small burden to businesses. Because the policy just increases market transparency and right to repair legislation is bipartisan, it is unlikely to be politically controversial. This bill has a positive benefit-cost analysis.

House Bill 1152 AKA The Repairability Index Act would require all digital electronics manufacturers to provide reasonable documentation and sell tools and parts at a fair price. It has also been referred to a committee—in this case the Commerce Committee. This policy would be effective because it directly addresses right to repair concerns. It would be an efficient policy in the long run, but be expensive to enforce. The policy could raise equity issues because it may be hard for small companies to provide these resources. This would not be a very politically acceptable policy because it imposes a significant requirement on private companies, but right to repair is bipartisan. This bill has a positive benefit-cost analysis.

Recommendation

Jim Marshall and Brad Roae, the Chairs of the Pennsylvania Committees of Consumer Affairs and Commerce should approve HB 1152 because it is the most effective option, and even though it is expensive and difficult for companies, it will decrease e-waste and and consumer spending and will be most efficient in the long term.

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The views presented in this policy brief are solely that of the student and not that of Lafayette College.

General Guidance

Page Limit: one 2-sided page; do not change font size or margins.

Referencing: All numbers must have a reference that is hot-linked to the original source. Any other references should be hot-linked as well.

General Guidance

Building a Policy Brief (from Texas A&M)

Component	Purpose	Guiding Questions
Title	Catch the attention of the reader.	Does the title get the reader's attention?
Summary	Convey the importance and relevance of the brief. Compel the reader to continue reading.	Does the summary succinctly describe the problem, outline why the current approach isn't working, and prescribe a new action?
Context and importance of the problem	Convince the reader that a current and urgent problem exists and requires new action.	Is the problem or issue clearly defined? Is an overview of the root causes provided? Are policy implications described?
Critique of policy option(s)	Detail shortcomings of the current approach, illustrating the need for change.	Are policy options outlined? Are the limitations of the current approach clear?
Policy recommendations	Describe the policy approach you recommend.	Is the rationale of your recommendation clear and well supported with evidence?
Policy actions	Suggest concrete actions to address the problem or issue.	Are practical steps or measures (and who should implement them) clearly stated?
Sources	To lead readers to further reading and to add credibility to your analysis.	Are source notes included? Does each follow consistent attribution guidelines? Are author and organization contact information provided?