FINAL REPORT

of the

COMMISSION TO STUDY THE RECYCLING AND DISPOSAL OF ELECTRONIC WASTE

(HB 1584, Chapter 33, Laws of 2008)

Commission Members

Representative Suzanne Harvey, Chair
Representative David Borden
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Background

Modern society is becoming increasingly saturated with electronic products. Our appetite for these modern age wonders has outstripped our ability to properly dispose of the ones that have worn out or become outdated. Oftentimes, these TVs, computers and other electronics were made using technologies that relied on materials that were more toxic than those being used today. Therefore, it is especially important that a safe and cost-effective system be established to take care of these displaced units and that consumers be provided with a convenient means of accessing the system.

Electronic waste, or "e-waste", refers to electronic products that have reached the end of their useful lives and are ready to be disposed of. Old computers, televisions, VCRs, stereos, copiers, and fax machines are examples of common e-waste items. E-waste frequently contains toxic metals (lead, mercury, and cadmium) and other materials, such as flame retardants, that should be kept out of municipal solid waste landfills and incinerators. Unwanted electronic products should first be reused by other consumers or else refurbished by manufacturers, where appropriate, and then recycled at end-of-life to capture those constituents that can be incorporated into new products. Though e-waste contains many toxic materials, valuable ones such as aluminum, copper, gold, and silver are also present.

The quantity of e-waste disposed of each year in the United States has steadily increased and comprised 2% of the municipal solid waste stream in 2007, according to the U.S. Environmental Protection Agency (EPA). Twice as many computers become obsolete in a year now as compared to 10 years ago. EPA has estimated the 2007 recycling rate for televisions and computer products to be around 18%, and only about 10% for cell phones. It is thought that most e-waste that is not recycled ends up in landfills.

Study Commission

The federal government has been slow to address the growing problem of e-waste disposal. In the absence of action on the federal level, several states have enacted legislation to regulate e-waste. The New Hampshire General Court chose during the 2008 session to establish this Study Commission to make recommendations on how e-waste might better be managed in the state in order to safeguard public health and the environment.

The Commission held a total of eight meetings at which presentations were made by a number of interested parties. The Commission would like to thank the following individuals and organizations for taking the time to appear before the Commission:

Donna Nashawaty, Town Manager from Sunapee
Silke Sulla, Portsmouth Solid Waste
Curtis Berry, representing Retail Merchants Association of NH
Rona Cohen, Council of State Governments

Bob Gallinaro, RMG Enterprise
Tom Fatcheric, UniWaste Services
Representatives from Dell Computer and Sharp Electronics

Municipal Programs

According to information provided by the Department of Environmental Services (DES), 203 towns and cities have an e-waste collection program, which comprises 86 percent of the state's municipalities with 95 percent of the population being served. In 2007, municipalities reported to DES that they collected a total of 2,042 tons of computer equipment.

Part of the reason why such a large percentage of municipalities have e-waste programs in place is because the Legislature banned, as of July 1, 2007, the disposal of video display devices in landfills and incinerators. Video display devices include most any kind of TV or computer monitor, including cathode ray tubes and liquid crystal or gas plasma displays. Though not part of the disposal ban, other computer components are also collected, such as the computer case, the keyboard, and the mouse.

Municipalities collect e-waste by having residents drop-off the materials at either the local transfer station or at one-day events conducted by contracted vendors, or by providing curbside collection. A fee is normally charged to offset the cost to the municipality of disposing of the waste. The study Commission heard testimony from two municipalities on this issue, with one charging $8 to take a complete computer system and the other charging $30. It costs each of the municipalities approximately 10 cents per pound to dispose of the e-waste through their vendors. Vendors often provide municipalities with small shipping containers in which collected e-waste is stored until the container is full and then transported off-site.

Producer Programs

Major computer producers have a variety of company run programs to take back computer systems. Some producers will accept an old computer, even one made by a competitor, in connection with a consumer purchasing a new computer made by the producer. The producer may even pay for shipping and provide cash back to the customer if the old computer is still functional. At least two producers go to the extent of providing free shipping for the disposal of a computer made by the producer, even without a new computer purchase.

Many of the major TV producers offer free recycling programs for their old TVs at designated drop-off centers in New Hampshire. Unfortunately, each manufacturer has only one or two of these drop-off centers in the state which limits the convenience and thereby the usefulness of the programs to residents living in limited geographical areas.

Some producers are supporting the introduction and passage of legislation at the state level that would make the producers responsible for the recycling of electronic

products that are branded with their name. Each producer would have to provide a convenient means for consumers to recycle the producer's old products, at no charge to the consumer.

In-store Programs

Large retail chain stores that sell electronics provide some assistance to their customers in recycling old TVs and computers. At least two of the major chains will pick up a customer's old TV for free at the time of delivery and set up of a new TV. Many will accept old cell phones and rechargeable batteries at kiosks within the stores, at no charge. Some of the major manufacturers, in cooperation with the retailers, have set up in-store programs for other types of electronic goods such as printers and fax machines.

E-Waste Recycling Vendors

There are a number of in-state vendors who accept e-waste for recycling. A large number of them do not actually process the materials, but rather just sort and then send along the materials to others for processing. However, there are some large in-state processors such as Uniwaste Services in Portsmouth. Uniwaste uses an advanced processing method to recycle cathode ray tubes (CRTs) into cullet that can be used again to make new CRTs.

DES does not issue permits to vendors who do not engage in any processing beyond collecting, sorting, and then shipping the materials elsewhere for processing. Neither is there any audit function in place to look at the environmental practices of such vendors and with whom they do business. There is justifiable concern that such vendors may ship the waste to low-cost disposal sites, without regard to the ultimate fate of the potentially toxic materials. These low-cost disposal sites are frequently located overseas in countries that have inadequate environmental and worker protection standards.

Other State Programs

According to information provided by the Council of State Governments (CSG), 17 states plus New York City have enacted electronic recycling laws that extend beyond a simple landfill and incineration ban such as the one that exists in New Hampshire. All of these states, except for California, have in some manner made producers liable for paying the end-of life disposal costs. California's system relies for its funding on an advanced recycling fee that is paid at the time of a new product's purchase.

Of those states that have made the producer liable, the amount charged each producer can either be by market share or return share within a state. Market share refers to what percentage of the new sales market a particular producer enjoys, whereas return share refers to what percentage of disposed units were made by a particular producer. The total cost of disposal within a state is then divided among the producers based on their computed share. Some states have hybrid systems where market share is used for returned TVs and return share is used for computers.

According to the CSG, the states that have established e-waste programs have experienced a wide range of success as measured by the number of pounds of e-waste recycled per capita. For example, Maryland's rate is 1.58 pounds per capita, whereas Minnesota's is 6.46. DES presented data that 4,084,556 pounds of e-waste were disposed of by municipalities in 2007. This equates to a per capita recycling rate of about 3.14 pounds. This rate occurred in the year in which the landfill and incineration disposal ban first took effect in New Hampshire, though the ban started halfway through the year.

Non-Toxic Manufacturing

Part of the solution to e-waste disposal may be eliminating the use of toxic materials in electronics manufacturing. In 2003, the European Union adopted the Restriction of Hazardous Substances Directive (RoHS) which took effect July 1, 2006. The RoHS directive restricts the use of six hazardous materials in the manufacture of electronic products. No identifiable homogenous material found in an electronic product is allowed to have concentrations above certain set limits for lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ether (PBDEs). California adopted a law that became effective on January 1, 2007 that prohibits the sale of video display devices that do not conform to the RoHS directive, though only as it pertains to the four heavy metals addressed under the directive.

Recommendations

The Commission recommends that the following actions be taken:

1) DES should undertake administrative rulemaking to require all e-waste vendors with facilities or a nexus in New Hampshire to be permitted under a general permit system administered by DES. This would include those facilities that only collect and sort e-waste, but may not process it. E-waste vendors would be required to register with DES under the general permit, follow the best management practices established under the permit, and self-certify compliance with those practices. Permittees would then be subject to verification inspections and enforcement action if not in compliance.

2) DES should undertake administrative rulemaking to levy annual fees upon permitted solid waste facilities. Currently, DES only collects fees at the time of permit application and modification. The amount collected is not sufficient to pay for the staffing needed to properly regulate solid waste activities in the state, including e-waste facilities.

3) Legislation should be filed that would establish a non-lapsing, dedicated fund into which all solid waste permit fees would be placed. This would ensure that increased revenues from newly established annual permit fees would be used only for the purpose of solid waste regulation. This type of structure would lessen dependence on the General Fund. It should be noted that existing statute (RSA 149-M:9, V) indicates the

Legislature's intent that permit fees should be used for solid waste regulation purposes. The statue reads:

> As a condition for any permit, the department may require payment of a reasonable fee, set by rules adopted under RSA 149-M:7. Such funds shall be used by the department for the purposes of this chapter.

4) Legislation should be filed to expand the ban on disposing of video display devices in landfills and incinerators to also include the case that contains the central processing unit of a computer, and non-mobile media players such as VCRs and DVD players.

5) A resolution should be filed urging New Hampshire's Congressional delegation to support federal legislation to enact the provisions of the Basel Convention within the United States to stop the dumping of e-waste overseas.