PRODUCT STEWARDSHIP INSTITUTE

Sustainable Solutions to Protect Our Environment

Setting Product Stewardship Priorities for Connecticut

Briefing Document

FINAL – November 29, 2012

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Prepared by the Product Stewardship Institute, Inc.

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The Product Stewardship Institute (PSI) is a national nonprofit organization dedicated to reducing the health and environmental impacts of consumer products. PSI brings together key stakeholders with conflicting interests to develop product end-of-life solutions in a collaborative manner, with a focus on having manufacturers assume primary financial and managerial responsibility. With a robust membership base of 47 state governments and over 200 local governments, as well as partnerships with more than 75 companies, organizations, universities, and non-U.S. governments, PSI advances both voluntary programs and legislation to promote industry-led product stewardship initiatives.

Acknowledgements

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EXECUTIVE SUMMARY

The Product Stewardship Institute (PSI) prepared a draft of this Briefing Document for the Oct. 25, 2012 meeting, "Setting Product Stewardship Priorities," held in conjunction with the Connecticut Department of Energy and Environmental Protection (CT DEEP). The Briefing Document provided background information to stakeholders who participated in the meeting. Following the meeting, PSI completed this final briefing document that incorporates decisions made during the meeting.

This Executive Summary highlights the meeting's outcomes, including the top five priority waste streams to be addressed by Extended Producer Responsibility (EPR). As defined below, whereas product stewardship can be either voluntary or regulatory, EPR is specifically a regulated approach. The Governor's Modernizing Recycling Work Group (GMRWG) will consider these priority waste streams as it develops its final recommendations to Gov. Dannel P. Malloy for reaching the 58 percent diversion goal set in the Connecticut's Solid Waste Management Plan.

> ***Product Stewardship*** *is the act of minimizing health, safety, environmental and social impacts, and maximizing economic benefits of a product and its packaging throughout all lifecycle stages. The producer of the product has the greatest ability to minimize adverse impacts, but other stakeholders, such as suppliers, retailers, and consumers, also play a role. Stewardship can be either voluntary or required by law.*

> ***Extended Producer Responsibility (EPR)*** *is a mandatory type of product stewardship that includes, at a minimum, the requirement that the producer's responsibility for their product extends to post-consumer management of that product and its packaging. There are two related features of EPR policy: (1) shifting financial and management responsibility, with government oversight, upstream to the producer and away from the public sector; and (2) providing incentives to producers to incorporate environmental considerations into the design of their products and packaging.*

Priority Waste Streams Recommended for Consideration by Connecticut's Modernizing Recycling Work Group

The stakeholders represented at the Oct. 25 meeting identified the following priorities for EPR in the State of Connecticut. (See Appendix A for a list of meeting participants.)

1. **Mattresses**
2. **Carpet**
3. **Batteries**
4. **Fertilizers and Pesticides**
5. **Packaging**

Criteria for Identifying Product Stewardship Priority Products

Overall, the criteria used to develop product stewardship priorities fell into one or more of three categories: *(1) environmental and social impacts, (2) physical challenges or barriers to passing EPR legislation, and (3) the likelihood of success*. The stakeholders who attended the Oct. 25 meeting acknowledged that there is

both a science and an art to establishing these criteria, and that the process of establishing them is dynamic and ongoing. Nevertheless, the meeting participants were able to agree on the following priority criteria as indicators for determining priority waste streams in Connecticut:

1. **Cost borne by taxpayers.** The total cost of managing the waste for government, primarily recycling and disposal, which is financed by taxpayers.
2. **Weight/Volume.** The amount of the waste found in the solid waste stream.
3. **Likelihood of success.** Factors that influence the political viability of EPR legislation getting passed in Connecticut.
4. **Resource value/recyclability.** The inherent value of the material as well as the potential markets for this waste stream in Connecticut.
5. **Effect on business development/job creation.** The potential to add jobs related to the recovery of this waste stream and its effect on business development.
6. **Current challenges in managing the waste.** A lack of appropriate disposal options and/or operational challenges in managing the waste.
7. **Potential lifecycle impact on environment and human health.** The impacts of a product on the environment throughout its lifecycle, including toxicity and carbon footprint.
8. **Potential impact on accountable parties.** The potential positive and negative effects on producers and end-users.
9. **Additional cost to consumers.** The extra cost incurred by consumers for the management of products through an EPR approach. *(Note: All EPR solutions represent a cost shift from the general taxpaying populace to the buyer/ end-user of the product at the point of sale.)*

Methodology

The defined criteria and list of priority products were established with input from stakeholders at the Oct. 25 meeting. Participating stakeholders completed an evaluation chart that was used as a tool to prioritize product waste streams to be addressed through product stewardship solutions by assigning qualitative rankings of importance (i.e., 5=very high; 4=high; 3=medium; 2=low; 1=very low). (See Appendix B for the evaluation chart.) Next, participants indicated the degree to which each criterion was a factor in determining individual rankings, if at all. Participants acknowledged that not all criteria carry equal weight. PSI then compiled data from the 26 completed charts and reported back to the group which products had been selected by meeting participants as top priorities for Connecticut.

Conclusion

The GMRWG will submit to Gov. Malloy in December 2012 its recommendations for advancing the Connecticut Solid Waste Management Plan and increasing recycling in Connecticut. In addition to considering the priority waste streams identified in this report, PSI encourages the GMRWG to consider evaluating Connecticut's existing EPR laws as part of its long-term strategy. As this Briefing Document demonstrates, producer responsibility is a central tenet to a comprehensive approach to waste management, which includes voluntary product stewardship programs, EPR legislation, and other regulatory strategies (e.g., mandatory recycling, recycled content standards, disposal bans, and "pay-as-you-throw" systems). Although this meeting focused on which products should be the focus of EPR legislation, there is

an acknowledgment that EPR represents only one tool that can be employed to modernize and increase recycling in Connecticut.

I. INTRODUCTION

Purpose of this Briefing Document

The Product Stewardship Institute (PSI) prepared a draft of this Briefing Document for the Oct. 25, 2012 meeting, "Setting Product Stewardship Priorities," held in conjunction with the Connecticut Department of Energy and Environmental Protection (CT DEEP). The Briefing Document provided background information to stakeholders who participated in the meeting. This briefing document has been augmented to reflect the stakeholder input received at the meeting.

At the meeting, PSI synthesized stakeholder feedback to determine Connecticut's top five waste streams to be addressed by Extended Producer Responsibility (EPR). As defined in Section II, whereas product stewardship can be either voluntary or regulatory, EPR is specifically a regulatory approach. The Governor's Modernizing Recycling Work Group (GMRWG) will consider these priority waste streams as it develops its final recommendations to Gov. Dannel P. Malloy for reaching the 58 percent diversion goal set in the Connecticut's Solid Waste Management Plan.

The following outlines the status of waste management and recycling in Connecticut and summarizes recycling and product stewardship initiatives currently underway. In addition, it outlines a set of criteria that were used to determine a list of priority products for the state. The criteria and priority product list capture the focus of the discussion at the Oct. 25 meeting.

Background on Solid Waste Management in Connecticut

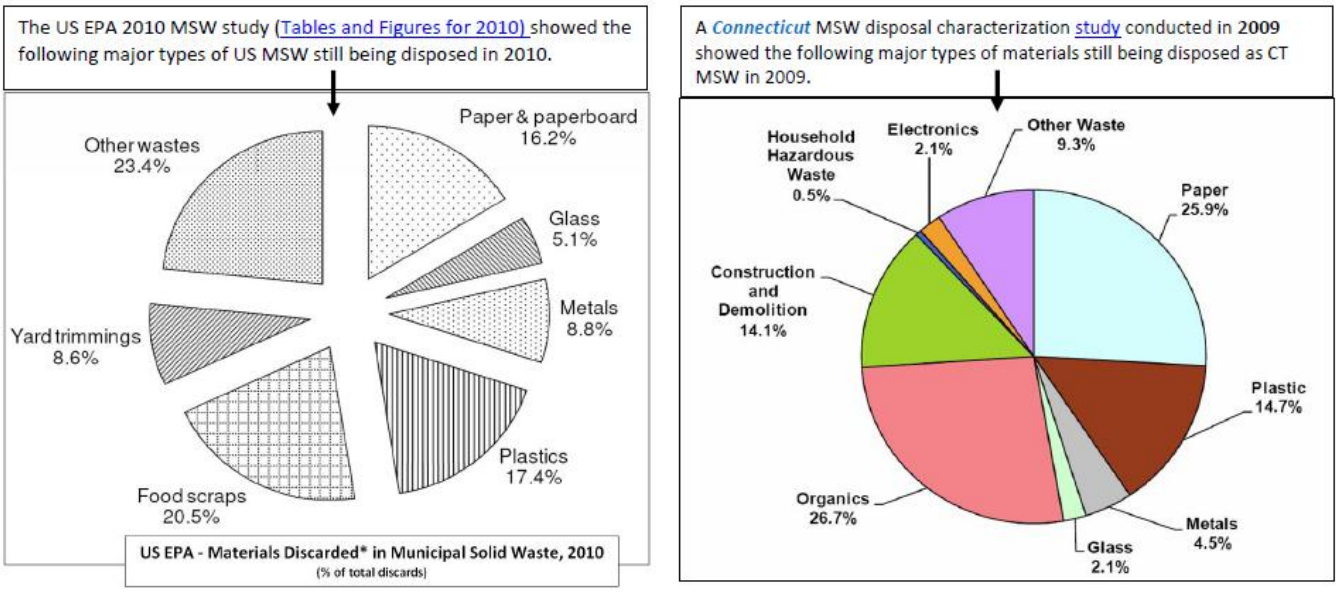
According to the annual survey of municipalities and permitted solid waste facilities, Connecticut generated nearly 3.2 million tons of Municipal Solid Waste (MSW) in 2010. Of that, about 68 percent is incinerated at Resource Recovery Facilities (RRFs), also known as waste-to-energy facilities, making Connecticut the state with the highest percentage of MSW managed using RRF technologies.[1] As of October 2012, there are six RRFs in Connecticut and 29 active landfill sites, although only three landfill sites are currently accepting waste and only one accepts MSW.[2] Connecticut sends 7.5 percent of its MSW out of state for disposal, and spends an estimated $550 million annually to manage its residential and commercial waste.[3]

A waste characterization study was conducted in 2009 to determine the breakdown of waste generated in the state and to better understand the most significant waste management issues. Overall, the three largest sources of material being discarded as MSW in 2009 (by weight) were organics (26.7 percent), paper (25.9 percent), and plastic (14.7 percent).[4] Figure 1 (below) compares the major types of waste generated in Connecticut to the national Municipal Solid Waste Characterization Report conducted by the U.S. Environmental Protection Agency (EPA) in 2010. The 2009 waste characterization study also indicated that, within the sample, 50 percent of the waste currently being disposed of was classified as "not mandated but recyclable," which indicates that it is feasible to recycle select materials including food waste, textiles, carpet, recyclable and compostable paper, and construction and demolition waste. Twenty-eight percent of the sampled MSW fell into the "designated recyclables" category, and an additional 23 percent of the MSW sampled was classified as "may be recycled."

In 1991, to address Connecticut's waste capacity deficit, the state mandated recycling for the following materials: glass food and beverage containers, metal food and beverage containers, newspapers, corrugated cardboard, leaves, scrap metal, used motor oil, lead-acid batteries, and white office paper (households

exempt). Grass clippings and nickel-cadmium batteries were added to the list later.[5] After reaching an estimated 30 percent recycling rate in 2005,[6] the 2010 MSW recycling rate dropped to 24 percent.[7] While CT DEEP has estimated that 394,000 tons of paper are recycled, the number of beverage containers—including PET and HDPE plastic bottles and aluminum cans—is grossly underestimated at 51,571 tons, which does not account for the material captured through the state's beverage container deposit program.[8]

Figure 1. Major Sources of Municipal Solid Waste in Connecticut and Nationally.[9]



In 2006, Connecticut's Solid Waste Management Plan was amended to include a more holistic waste management strategy, which focuses on diverting a larger portion of waste through recycling and reuse efforts and moving away from the "throw-away society" mentality. The amended plan lays the foundation for the state's waste management strategy through 2024, with a goal of a 58 percent disposal diversion rate compared to the actual November 2011 rate of 30 percent.[10] (Since the diversion rate measures the quantity of materials that would have been sent to a landfill or resource recovery facility, it represents more than just recycling, such as reuse and composting, and therefore does not equate to the state's recycling rate.)

Governor's Modernizing Recycling Work Group

The Governor's Modernizing Recycling Work Group (GMRWG) was formed in April 2012 to address Connecticut's current approach to waste management. This work group will develop recommendations that highlight opportunities to reduce waste by modernizing and improving recycling, while also lowering the costs of recycling for Connecticut businesses, municipalities, and residents. The goal is to revamp the state's waste economy by shifting the traditional focus on waste management to opportunities for extracting value from materials. Gov. Dannel P. Malloy appointed to the work group representatives from CT DEEP, the Department of Public Health, the Office of Policy & Management, local municipalities, recycling and materials management professionals, and other key stakeholders with finance and environmental backgrounds.

The GMRWG is tasked with the following:[11]

- Modernizing the state's recycling and materials management policies and infrastructure, including organic composting, recycling streams and methods, possible market frameworks, and education.

- Assessing the governance, responsibilities, and operations of the Connecticut Resources Recovery Authority to ensure that the state has proper mechanisms in place for reducing waste, maximizing recycling, and minimizing reliance on burning as a disposal method.
- Ensuring that Connecticut's plan for solid waste disposal and materials management considers environmental impacts on host communities and the state as a whole.

The GMRWG has established two subcommittees, one focused on "Materials and Markets," and the other focused on "Systems and Infrastructure," to accomplish the tasks laid out by Gov. Malloy. On September 25, 2012, DSM Environmental Services, contracted by the state to support GMRWG activities, issued a "Draft Diagnostic Report" to assess the current waste management and recycling system and to offer suggestions to the work group. The GMRWG will submit its final recommendations in a report to the Governor by December 1, 2012.

Materials Management Summit Series

As part of Connecticut's Solid Waste Management Plan and the Climate Change Action Plan strategies, CT DEEP launched its Materials Management Summit Series in March 2012. The three-part Summit Series topics are listed below:

- *"Unlocking the Value: Transforming the Connecticut Materials Economy"* (March 22, 2012) - This meeting featured presentations on manufacturing and product development, increasing scrap food recovery, processing recyclables, and the opportunities for business relating to waste in Connecticut.

- *"Capturing the Value: Transforming Municipal Materials Management"* (June 12, 2012) - This meeting included panels on reducing costs and waste, improving services for consumers and schools, and successful collection practices.

- *"Launching Innovation: Transforming Materials Management in Connecticut"* (Oct. 4, 2012) - This meeting highlighted examples of other innovative programs that have been implemented throughout the country and how they can inspire and inform the efforts of Connecticut and the surrounding region in creating and implementing a sustainable materials economy.

The concept behind the Summit Series originated from the January 2012 roundtable, "Transforming Materials Management for the 21st Century," where environmental and economic development commissioners from around the Northeast met to discuss regional waste management issues. The roundtable was co-sponsored by CT DEEP, EPA Region 1, and the Northeast Waste Management Officials' Association.

II. PRODUCT STEWARDSHIP & EXTENDED PRODUCER RESPONSIBILITY (EPR)

Definitions and Principles

In April 2012, PSI, the Product Policy Institute (PPI), and the California Product Stewardship Council (CPSC) announced revised definitions of the terms "product stewardship" and "extended producer responsibility," or EPR, to streamline the meaning behind various activities and to reduce confusion in the field. For over a year, the three organizations worked collaboratively to harmonize concepts and solicit input from stakeholders in business, government, and public interest organizations across North America. The resulting definitions are consistent with international definitions, but also reflect the progress that has been made in the past decade since the product stewardship movement took off in the U.S.

Product stewardship is the act of minimizing the health, safety, environmental, and social impacts of a product and its packaging, while maximizing the economic benefits, throughout *all lifecycle stages*. The producer of the product has the greatest ability to minimize adverse impacts, but other stakeholders, such as suppliers, retailers, and consumers, also play a role. Stewardship can be either voluntary or required by law.

Extended Producer Responsibility, or EPR, is a mandatory type of product stewardship that includes, at a minimum, the requirement that the *producer's responsibility for its product extends to post-consumer management of that product and its packaging.* There are two related features of EPR policy: (1) shifting financial and management responsibility, with government oversight, upstream to the producer and away from the public sector; and (2) providing incentives to producers to incorporate environmental considerations into the design of their products and packaging.

The following **EPR Principles** include key elements that should be included in all EPR legislation. Although these Principles will be applied differently by different jurisdictions, they are aspirational and considered best practice to achieve maximum results:

1. Producer responsibility.
2. Level playing field.
3. Results-based.
4. Transparency and accountability.
5. Roles for government, retailers, and consumers.

Goals of EPR

EPR systems seek to: (1) reduce costs to local governments and taxpayers, (2) reduce waste, and increase reuse and recycling, (3) promote economic development, including job creation, (4) change product design to reduce waste and increase recyclability, and (5) reduce greenhouse gas emissions and energy consumption. These goals are summarized below:

Reduce costs to local governments and taxpayers

Local and state governments bear the cost of managing many consumer products at the end of those products' intended useful lives. These products must be collected and transported for reuse, recycling, or safe disposal, which means that tax dollars are often spent to protect the environment and public health from the products' unintended impacts. In many parts of the country, the costs to local governments of managing discarded consumer products through household hazardous waste (HHW) collection programs has proven to be high, ranging from about $0.30 per pound for waste electronics to $8.00 per gallon for leftover paint.[12] Not only are these programs costly to run, but they rarely offer convenient, regular, or frequent opportunities for the public to discard products and packaging.

By shifting the costs of solid waste and HHW management from taxpayer-funded government programs to manufacturers and consumers, EPR laws provide for alternative funding sources, which are needed to expand and sustain product end-of-life management programs without depleting scarce government resources. However, EPR does not simply shift costs from the public sector to the private sector; it seeks to minimize costs through economies of scale, product design, and other market forces.

Reduce waste and increase reuse and recycling

Connecticut and other states around the country are concerned with not only reducing the costs of managing MSW, but also reducing the volume of materials generated as waste, and with increasing

materials recovery. An EPR approach seeks to address significant portions of the municipal solid waste stream to be captured for recycling or proper disposal. An increasing number of states, including Connecticut, are implementing EPR policies to meet publicly stated diversion and/or recycling goals. Connecticut's electronics EPR law, for example, has nearly quadrupled the amount of scrap electronics collected since the law was passed in 2007, from about 1,000 tons of material collected in 2007 to nearly 4,000 tons in 2011. In addition, prior to the passage of the state's paint EPR law, only oil-based paint was collected from residents. Latex paint, which comprises about 80 percent of paint sales as compared to oil-based paint, will now be collected and recycled, capturing millions of gallons of valuable material.

Economic development and job creation

As EPR systems divert more products from the waste stream, there will be more opportunities for recycling processors and end-users, thereby contributing to economic development and job creation. On a per-ton basis, recycling, reuse, and remanufacturing creates up to *10 times more jobs* than traditional waste disposal.[13] A 2011 study conducted by the Institute for Scrap Recycling Industries (ISRI) found that recycling and reuse contribute significantly to the U.S. economy. According to the study, the recycling industry employs nearly 460,000 people, generating more than $26 billion in wages and over $90 billion in total economic output.[14] Furthermore, recycling is a *net* job creator. For example, North Carolina found that for every 100 jobs created in the recycling sector, just 10 jobs were lost in traditional disposal.[15] Recycling is a healthy industry that will continue to expand if the right policy approaches are supported by federal, provincial, state, and local governments, as well as manufacturers, and if the public continues to demand products made from recycled materials.

Changes in product design to decrease waste and increase recyclability

One of the goals of an EPR system is to provide a direct financial incentive for producers to reduce material use and increase recyclability of their products and packaging through design change. When manufacturers are financially responsible for the collection, transportation, and proper recycling of these products, companies have a natural incentive to design their products and packaging to minimize the costs of end-of-life management and maximize the value of the material once collected. As manufacturers take these factors into account, another goal of EPR is for companies to also reduce the use of toxic materials. An EPR approach seeks to encourage product innovation and design changes by creating a level playing field and ensuring that all producers internalize the true cost of their products. The transition away from a focus on end-of-life management toward a more holistic view of reducing impacts throughout a product's lifecycle is a central tenet of EPR policies. In addition, EPR is always supplemented with other policies and programs to achieve overall waste management goals.

Reduced greenhouse gas emissions and energy consumption

As the quantity and quality of materials captured through recycling increases, producers are better able to use valuable materials to manufacture new products. Whenever recycled materials replace raw materials, environmental impacts from extraction and transportation, and including energy consumption and greenhouse gas emissions, are greatly reduced. Neglecting to recycle products and packaging means energy and other natural resources are wasted, from the extraction and production of virgin materials, to the transportation and disposal of these new products and packaging. According to the U.S. EPA, the extraction, production, transport, and disposal of goods (not including food) accounts for approximately 29 percent of all man-made greenhouse gas emissions.[16] Therefore, greater reuse and recycling of consumer products and packaging are powerful greenhouse gas reduction strategies.

III. PRODUCT STEWARDSHIP IN CONNECTICUT

Connecticut Solid Waste Management Plan (SWMP)

The Solid Waste Management Plan was amended in 2006, transforming Connecticut's approach to waste management through 2024. A guiding principle of solid waste management in Connecticut is product stewardship, which is referred to as "shared responsibility." According to the plan, *"Connecticut's long-range vision for solid waste management is to:*

- *"Significantly transform our system into one based on resource management through collective responsibility for the production, use, and end-of-life management of products and materials in the state;*
- *Shift from a throwaway society towards a system that reduces the generation and toxicity of trash and treats wastes as valuable raw materials and energy resources, rather than as useless garbage or trash; and*
- *Manage wastes through a more holistic and comprehensive approach than today's system, resulting in the conservation of natural resources and the creation of less waste and less pollution, while supplying valuable raw materials to boost manufacturing economies."*[17] *(Executive Summary, ES 1 – 2)*

Product stewardship is highlighted as one solution to the evolving waste management structure in Connecticut. The plan provides a context for the status of product stewardship in 2006, noting the increasing number of laws in Europe, Canada, Asia, and other countries that require manufacturers to take responsibility for the products they make when consumers no longer want them. The plan references industry-run programs that collect lead acid vehicle batteries, rechargeable batteries, and beverage containers in Connecticut. In addition, it mentions the role of product stewardship in managing electronics, paint, and carpet. Finally, the plan states that CT DEEP, regional groups, and municipalities need to increase reuse and recycling by "partnering with groups such as the Product Stewardship Institute to promote producer responsibility for hard to manage oversized MSW."[18]

Connecticut Product Stewardship Council

The Connecticut Product Stewardship Council (CT PSC) was established in June 2009 with a mission to "shift Connecticut's product waste management system from one focused on government funded and ratepayer financed waste diversion to one that relies on producer responsibility in order to reduce public costs, increase recycling rates, and drive improvements in product design that promote environmental sustainability."[19] The Council is currently comprised of municipalities, regional governments, environmental advocacy groups, individuals, an electronics recycler, and an academic institution. The CT PSC provides a forum for effective collaboration and coordination to promote product stewardship in state policies, including the SWMP. Membership, which is free and open to all those interested, involves signing a simple letter of agreement.

EPR Laws in Connecticut

Electronics

Connecticut was one of the first states in the country to pass an EPR law for electronics. The law passed in 2007, and went into effect in February 2011. Consumers can drop off their computers, monitors, printers, and televisions to their local municipalities free of charge. CT DEEP approves Covered Electronics Recyclers (CERs) to collect electronics from municipalities for environmentally sound recycling. The CERs are then

reimbursed by electronics manufacturers for their transportation and processing costs. The law includes a disposal ban that went into effect on January 1, 2011.

Paint

Connecticut's paint stewardship law was passed in June 2011, and requires manufacturers to manage and finance a system to handle more than 880,000 gallons of leftover architectural paint that go unused in Connecticut each year. The law will save *at least* $700,000 annually that municipalities across the state have traditionally spent to properly manage leftover paint, which accounts for between 30 and 50 percent of their funding for Household Hazardous Waste collections. [20] However, PSI estimates that, if all 880,000 gallons of leftover paint was managed through the manufacturer-financed system, Connecticut would gain a total benefit of $6 million annually.[21]

The manufacturers' paint stewardship program plan is due in March of 2013, with implementation anticipated in July 2013. Connecticut is the third state after Oregon and California to pass a paint stewardship law, adopting a model developed with the American Coatings Association through a national stakeholder dialogue facilitated by PSI.

Mercury Thermostats

In May 2012, the Connecticut legislature passed the Manufacturer of Mercury Thermostat Collection and Recycling Programs Act.[22] Manufacturers of mercury-containing thermostats are required to submit a plan to CT DEEP that describes how they will collect thermostats in the state. However, this is not an example of a strong EPR law as it does not include any performance targets the industry must meet. In addition, the law does not offer a cash-based incentive, which is included in the thermostat EPR laws in Vermont and Maine that have resulted in the highest collection rates in the country. Implementation of the law will begin on April 1, 2013.

EPR Legislation Introduced in 2012

Mattresses

Connecticut was the first state in the country to introduce EPR legislation specifically for mattresses. The bill, An Act Establishing a Mattress Stewardship Program, passed in the Senate on May 2 with a vote of 32 in favor and 4 opposing. However, the bill was not called in the House of Representatives before the legislative session adjourned on May 9, 2012. This bill would have required mattress producers to finance and manage a mattress stewardship program by joining a single stewardship organization (a non-profit industry-run Mattress Recycling Council). The program would have been financed similar to Connecticut's paint law, where mattress manufacturers pay a fee into the Council, which passes the cost on to retailers, which in turn pass the cost on to consumers. This legislation was the outcome of PSI's National Mattress Stewardship Initiative, which began in 2010 and included two stakeholder dialogue meetings in Connecticut in 2011.

Beverage Container Deposit Law

Connecticut's Beverage Container Deposit Law was passed in 1978 and came into effect on January 1, 1980. Also known as a "bottle bill," this law mandated a 5 cent deposit be added to beverage containers for beer, carbonated soft drinks, and noncarbonated water beverages (excluding juice). When the container is returned to a store, which is required to take back containers for the brands that it carries, or a redemption center, the deposit is redeemed by the customer. The funds from containers that are recycled curbside or thrown away (the unclaimed deposits) go into the state's general fund. Containers of 3 liters or larger are exempted, as are high-density polyethylene (HDPE) containers. In addition, manufacturers can apply for exemption if the number of noncarbonated beverage containers they bottle and sell is less than 250,000 a year. [23] There have been a number of slight changes made to this law over the years. For example, in April

2009, the law was expanded to include water bottles and containers. Most recently, in 2010, the law was changed to have the Department of Revenue Services (DRS) Commissioner take the CT DEEP's place as "primary administrator for deposit initiators."[24]

IV. PSI STAKEHOLDER DIALOGUE PROCESS

At the core of PSI's work is an approach that brings together divergent parties that are often economically at odds with one another with the goal of jointly developing product stewardship solutions. Our collaborative method entails helping groups negotiate each participant's role within the context of a comprehensive solution. We conduct research, facilitate meetings and workgroups, and forge multi-stakeholder agreements, which can take the form of a signed Memorandum of Understanding, model programs, or other formal documentation of stakeholder commitments. PSI also conducts pilot projects, provides strategic advice, and advocates for strong environmental policies. PSI has conducted dialogue meetings for the following product categories: fluorescent lamps, mattresses, medical sharps, mercury thermostats, paint, pharmaceuticals, phone books, pressurized gas cylinders, radioactive devices (including smoke detectors), and tires. The organization has also conducted stakeholder discussions on packaging and batteries.

PSI's stakeholder dialogue process consists of four phases: (1) Research and outreach; (2) Dialogue and negotiations; (3) Implementation; and (4) Evaluation. For each priority product, PSI gains stakeholder agreement on the problem, goals, barriers, and solutions.

Phase I – Research and Outreach

- Conduct literature search.
- Identify and summarize existing efforts.
- Identify and interview key stakeholders to invite to participate in national dialogue.
- Develop and maintain contact database.
- Develop Project Summary.
- Develop Product Stewardship Action Plan.

Phase II – Dialogue and Negotiations

- Convene at least two national dialogue meetings with key stakeholders.
- Convene workgroups between meetings.
- Develop priority agreement(s) among key stakeholders, which might include nationally coordinated policies or legislative initiatives.
- Promote and disseminate project results through multiple venues.

Phase III – Implementation

- Jointly implement priority projects and initiatives.

Phase IV – Evaluation

- Joint evaluation of the projects and identification of changes needed.

V. CRITERIA FOR IDENTIFYING PRODUCT STEWARDSHIP PRIORITIES

Overall, the criteria used to develop product stewardship priorities for Connecticut fell into one or more of three categories: *(1) environmental and social impacts, (2) physical challenges or barriers to passing EPR legislation, and (3) the likelihood of success*.

The stakeholders who attended the October 25, 2012 meeting acknowledged that there is both a science and an art to establishing these criteria, and that the process of establishing them is dynamic and ongoing. Nevertheless, the meeting participants were able to agree on the following priority criteria as indicators for determining priority waste streams in Connecticut. Additional criteria were also discussed and are listed below.

1. **Cost borne by taxpayers.** The total cost of managing the waste for government, primarily recycling and disposal, which is financed by taxpayers.
2. **Weight/Volume.** The amount of the waste found in the solid waste stream.
3. **Likelihood of success.** Factors that influence the political viability of EPR legislation getting passed in Connecticut.
4. **Resource value/recyclability.** The inherent value of the material as well as the potential markets for this waste stream in Connecticut.
5. **Effect on business development/job creation.** The potential to add jobs related to the recovery of this waste stream and its effect on business development.
6. **Current challenges in managing the waste.** A lack of appropriate disposal options and/or operational challenges in managing the waste.
7. **Potential lifecycle impact on environment and human health.** The impacts of a product on the environment throughout its lifecycle, including toxicity and carbon footprint.
8. **Potential impact on accountable parties.** The potential positive and negative effects on producers and end-users.
9. **Additional cost to consumers.** The extra cost incurred by consumers for the management of products through an EPR approach. *(Note: All EPR solutions represent a cost shift from the general taxpaying populace to the buyer/ end-user of the product at the point of sale.)*

Additional criteria for consideration

1. Complexity of the issue and number of stakeholders to involve.
2. Availability of willing partners.
3. Opportunity to effect change, both short-term success and longer-term progress.
4. Regional and/or national interest (including public).
5. Ease and access for consumers to participate.
6. Availability of scientific information about the problem.
7. Existing infrastructure.

VI. PRIORITY WASTE STREAMS RECOMMENDED FOR CONSIDERATION BY GOVERNOR'S MODERNIZING RECYCLING WORK GROUP

Based on input from stakeholders represented at the October 25, 2012 meeting[25], PSI and CT DEEP have identified the following priorities for product stewardship and EPR in the State of Connecticut:

- **Mattresses**
- **Carpet**
- **Batteries**
- **Fertilizers and Pesticides**
- **Packaging**

Participating stakeholders completed an evaluation chart[26] that was used as a tool to prioritize product waste streams to be addressed through product stewardship solutions by assigning qualitative rankings of importance (i.e., 5=very high; 4=high; 3=medium; 2=low; 1=very low). Next, participants indicated the degree to which each criterion was a factor in determining individual rankings, if at all.[27] PSI then compiled data from the 26 completed charts and reported back to the group which products had been selected by meeting participants as top priorities for Connecticut.

The following list includes product categories that have been identified in the northeast region, as well as around the country and in Canada, as candidates for a product stewardship solution. This list also incorporates potential priority waste streams suggested by meeting participants.

List of potential product stewardship priorities:

- Mattresses
- Carpet
- Packaging and Printed Materials
- Fertilizers
- Pesticides
- Tires
- Batteries
- Fluorescent lamps
- Gas Cylinders
- Pharmaceuticals
- Medical sharps
- Smoke Detectors
- Phone Books
- Plastic films (including agricultural plastics) and bags
- Furniture

- Textiles
- Construction and demolition waste

VII. CONCLUSION

The GMRWG will submit to Gov. Malloy in December 2012 its recommendations for advancing the Connecticut Solid Waste Management Plan and increasing recycling in Connecticut. In addition to considering the priority waste streams identified in this report, PSI encourages the GMRWG to consider evaluating Connecticut's existing EPR laws as part of its long-term strategy. As this Briefing Document demonstrates, producer responsibility is a central tenet to a comprehensive approach to waste management, which includes voluntary product stewardship programs, EPR legislation, and other regulatory strategies (e.g., mandatory recycling, recycled content standards, disposal bans, and "pay-as-you-throw" systems). Although this meeting focused on which products should be the focus of EPR legislation, there is an acknowledgment that EPR represents only one tool that can be employed to modernize and increase recycling in Connecticut.

Appendix A

Setting Product Stewardship Priorities for Connecticut

Stakeholder Meeting Participant List[28]

Name	Organization
MANUFACTURERS, INDUSTRY STEWARDSHIP ORGS & ASSOCIATIONS	
Todd Ellis*	Call2Recycle
Donny Rolader*	Call2Recycle
Adam Ney	Connecticut Business Industry Association
Art Feldman*	The Art Feldman Company - TAFCo Packaging
Richard Love	United Technologies Corporation
Wayne Wnuck	United Technologies Corporation
Valerie Hayward*	Xerox
STATE LEGISLATORS	
Patricia Widlitz	State Representative, Connecticut General Assembly
STATE GOVERNMENT	
Macky McCleary	Connecticut Department of Energy and Environmental Protection
Chris Nelson	Connecticut Department of Energy and Environmental Protection
Connie Mendolia	Connecticut Department of Energy and Environmental Protection
Diane Duva	Connecticut Department of Energy and Environmental Protection
Gabrielle Frigon	Connecticut Department of Energy and Environmental Protection
Judy Belaval	Connecticut Department of Energy and Environmental Protection
KC Alexander	Connecticut Department of Energy and Environmental Protection
Kevin Sullivan*	Connecticut Department of Energy and Environmental Protection
Kim Trella*	Connecticut Department of Energy and Environmental Protection
Ross Bunnell*	Connecticut Department of Energy and Environmental Protection

Sherill Baldwin*	Connecticut Department of Energy and Environmental Protection
Tom Metzner	Connecticut Department of Energy and Environmental Protection
LOCAL/REGIONAL GOVERNMENT	
Sheila Baummer	Borough of Naugatuck
Mark Bobman	Bristol Resource Recovery Facility Operating Committee
Carl Stephani	Central Connecticut Regional Planning Agency
Marilynn Cruz-Aponte	City of Hartford, Public Works Department
Peg Hall	City of Hartford, Legislative Consultant
Jim Perras	Connecticut Resources Recovery Authority
Roger Guzowski	Connecticut Resources Recovery Authority
Cheryl Reedy	Housatonic Resources Recovery Authority
Jen Ianucci	Housatonic Resources Recovery Authority
Janice EhleMeyer	Lower Connecticut River Valley Council of Governments
Brian Bartram	Northwestern Connecticut Council of Governments and the Litchfield Hills Council of Elected Officials
Edward Reagan	Salisbury Sharon Resource Recovery Authority
Winston Averill	Southeastern Connecticut Regional Resource Recovery Authority
Laura Panciera	Town of Branford
Jonathan Bilmes*	Town of Enfield
Pamela Roach	Town of Hamden
Michael Harder	Town of Hebron
Virginia Walton	Town of Mansfield
Kim O'Rourke	Town of Middletown
Donna Brody	Town of Rocky Hill
Glenn Parent	Town of Rocky Hill
Meg M. Szalewicz	Town of Sharon, Selectwoman
John Phillips	Town of West Hartford, Department of Public Works
Marge Warner	Town of Woodbury Public Works Department

WASTE MANAGEMENT & RECYCLING INDUSTRY	
Michael Cicchetti	Covanta Energy
Meg Morris*	Covanta Energy
Paula Soos*	Covanta Energy
Michael Van Brunt*	Covanta Energy
Jim O'Brien	J. O'Brien & Associates, LLC. (representing Wheelabrator)
Thomas DeVivo*	Willimantic Waste Paper Company
ACADEMIC INSTITUTIONS	
Linda Guzzo	Capital Community College
Josh Stoffel	Connecticut College
Sydney Hausman-Cohen	Wesleyan University
OTHER	
Cyril May*	Better World Magic
Patrick McCabe	Capitol Strategies Group, LLC
Cherie Ruffo	Chrysalis Environmental Services, LLC
Abe Scarr	Connecticut Public Interest Research Group
Kim Barker-Craven	Creative Services Group, LLC
Diane Lauricella	Environmental Innovations Group
Mitch Kennedy	Design with Nature, LLC
Florestine Taylor	Employment Center Science Park
Rayon Lennon	Employment Center Science Park
Edward von Stein*	Engineering & Finance Group
TJ Casey	Gaffney, Bennett & Assoc., Inc.
Adrienne Houel*	Greater Bridgeport Community Enterprises, Inc.
Amy Cabaniss*	North American Hazardous Materials Management Association

Terri Goldberg	Northeast Waste Management Officials' Association
Tony Philpin	The ReCONNstruction Center
Eddie Oquendo*	Recycle Used Cooking Oil From Home, LLC (RUCOIL)
Hilary Felton-Reid	Robinson & Cole LLP
Martin Mador	The Sierra Club
PSI STAFF	
Scott Cassel	Product Stewardship Institute, Inc.
Stefanie Wnuck	Product Stewardship Institute, Inc.

**Registered but did not attend.*

Appendix B

Evaluating Priority Waste Streams – Meeting Handout

Defining priority criteria:

1. **Cost borne by taxpayers.** The total cost of managing the waste for government, primarily recycling and disposal, which is financed by taxpayers.
2. **Weight/Volume.** The amount of the waste found in the solid waste stream.
3. **Likelihood of success.** Factors that influence the political viability of EPR legislation getting passed in Connecticut.
4. **Resource value/recyclability.** The inherent value of the material as well as the potential markets for this waste stream in Connecticut.
5. **Effect on business development/job creation.** The potential to add jobs related to the recovery of this waste stream and its effect on business development.
6. **Current challenges in managing the waste.** A lack of appropriate disposal options and/or operational challenges in managing the waste.
7. **Potential lifecycle impact on environment and human health.** The impacts of a product on the environment throughout its lifecycle, including toxicity and carbon footprint.
8. **Potential impact on accountable parties.** The potential positive and negative effects on producers and end-users.
9. **Additional cost to consumers.** The extra cost incurred by consumers for the management of products through an EPR approach. *(Note: All EPR solutions represent a cost shift from the general taxpaying populace to the buyer/ end-user of the product at the point of sale.)*

Ranking guide to determine level of importance:

5 – Very High **4 –High** **3 – Medium** **2 – Low;** **1 – Very Low**

Directions:

In the column, "overall Priority Ranking," please rank the waste streams listed below, **from 1 (very low) to 5 (very high),** in terms of priority to be addressed through Extended Producer Responsibility (EPR) legislation in Connecticut. Once you have done so, please indicate the degree to which the following criteria listed below was a factor in determining each ranking (if at all) by circling the number that indicates the appropriate level of importance *(Note: Not all criteria carry equal weight). Circle DK if you don't know or don't have an opinion.*

Affiliation: Government (state/regional/municipal) Business Recycler Environmental Org. Other Org. Individual

Name (optional):_____ DK= don't know

Waste stream	Overall Priority Ranking	Criteria								
		Volume	Cost borne by taxpayers	Likelihood of success	Resource value/ Recyclability	Job Creation	Difficulty in managing waste	Potential lifecycle impact	Potential impact on accountable parties	Additional cost to consumers
Mattresses		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Carpet		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Packaging		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Fertilizers		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Pesticides		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Tires		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Batteries		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Fluorescent lamps		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Gas cylinders		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Pharmaceuticals		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Medical Sharps		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Smoke Detectors		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Phone books		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Plastic Films		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK

Plastic Bags		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Furniture		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Textiles		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK
Construction & Demolition		1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK	1 2 3 4 5 DK

[1] Connecticut Department of Energy & Environmental Protection. (Revised 2012, March 28). *Estimates of Connecticut Municipal Solid Waste (MSW) Generated, Disposed, and Recycled FY2010.* Retrieved 12 Oct. 2012 from http://www.ct.gov/dep/lib/dep/reduce_reuse_recycle/data/average_state_msw_statistics_fy2010.pdf

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[3] DSM Environmental Services Inc. (2012, September 22). *Draft Diagnosis Analysis.* Retrieved 8 Oct 2012 from http://www.ct.gov/dep/lib/dep/waste_management_and_disposal/solid_waste/transforming_matls_mgmt/gov_recycling_work_group/draft_diagnostic_analysis_092512.pdf

[4] Connecticut Department of Energy & Environmental Protection. (Revised 2012, March 28). *Estimates of Connecticut Municipal Solid Waste (MSW) Generated, Disposed, and Recycled FY2010.* Retrieved 8 Oct. 2012 from http://www.ct.gov/dep/lib/dep/reduce_reuse_recycle/data/average_state_msw_statistics_fy2010.pdf.

[5] State of Connecticut, Department of Environmental Protection. (2006, December). *State of Connecticut Solid Waste Management Plan: Amended December 1006.* Retrieved 8 Oct 2012 from http://www.ct.gov/dep/lib/dep/waste_management_and_disposal/solid_waste_management_plan/swmp_final_chapters_and_execsummary.pdf

[6] *Ibid.*

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[9] *Ibid.*

[10] State of Connecticut. (2011, November 30). *State-wide Waste Composition and Characterization Study.* Department of Energy & Environmental Protection. Retrieved 8 Oct 2012 from http://www.ct.gov/dep/cwp/view.asp?a=2718&q=439264&depNav_GID=1639

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[12] Product Stewardship Institute (2010). *Financial Benefits to Local Governments from Product Stewardship fact sheet*.

[13] *Institute for Local Self-Reliance (2010). Waste to Wealth - Recycling Means Business.* Retrieved 9, Feb 2010 http://www.ilsr.org/recycling/recyclingmeansbusiness.html.

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[15] Shore, Michael (2005). *The Impact of Recycling on Jobs in North Carolina*. Raleigh, NC: Recycling Busienss Assistance Center.

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[20] Connecticut Product Stewardship Paint Initiative Fact Sheet (2011, March).

[21] The US EPA estimates that about 10% of all paint sales ends up as leftover paint that goes unused. (Source: U.S. EPA Sector Strategies. *Quantifying the Disposal of Post-Consumer Architectural Paint*. April 2007. http://www.productstewardship.us/associations/6596/files/PaintQuantityReportApril182007.pdf.) The cost to collect, transport, and recycle unused paint is about $8 per liquid gallon. (Source: SCS Engineers, *Paint Product Stewardship Initiative Infrastructure Project*, 2007. Prepared under contract to the WA DEQ as part of the Paint Product Stewardship Initiative. http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=131.) The $8 per liquid gallon figured was first calculated by the Product stewardship Institute. (Source: Paint Product Stewardship Action Plan. Product stewardship Institute. 2004. http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=131.)

[22] Note: Connecticut DEEP did not support this bill introduced by thermostat manufacturers.

[23] State of Connecticut . (February 2011). *Summary of Connecticut Bottle Bill Legislation.* Department of Energy & Environmental Protection. Retrieved Oct. 12 from http://www.ct.gov/dep/cwp/view.asp?a=2714&q=324836&depNav_GID=1645.

[24] *Ibid.*

[25] See Appendix B for list of meeting participants.

[26] See Appendix A for the evaluation chart.

[27] Participants acknowledged that not all criteria carry equal weight.

[28] Twenty-six meeting participants completed the evaluation chart.