Performance Measures

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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

A. Background

Performance measures provide a mechanism for program management, oversight, accountability and a way to measure accomplishments. Performance measures relate primarily to the product stewardship principles of "governance" and "environmental and human health protection". Establishing performance measures for a product stewardship program solidifies the basic principle of allowing the producers' flexibility in how they establish and run a program guided by pre-established and agreed upon performance measures. When performance measures relate to specific product and its impacts on human health and the environment, such as use of toxics, safe management practices, or greenhouse gas, they directly address the principle of reduced environmental and human health impacts.

Performance measures are intended to provide flexibility to the producer as well as providing a foundation for focusing program activities, and tracking and promoting program accomplishments. The public interest is served by performance measures because they can, depending on what is established, drive service standards and visibly demonstrate progress in reducing the lifecycle impacts of products. Specific performance measures may vary by product or material, recognizing that each product has differences in composition, distribution channels, waste generation rates, and end-of-life management options. However, there are general types of measures that may be common and useful for many products.

B. Characteristics and types of performance measures

When identifying or defining performance measures, key characteristics can help guide the selection or development. The following attributes or questions can help identify the characteristics and type of performance measure that will be most useful.

- Is the performance measure useful for program operations, stewardship, and reporting to the public?
- Can the performance measure help drive or improve performance?
- Can the performance measure communicate program outcomes or success clearly?
- Can data or information be collected and reported reliably and cost-effectively? Does needed data or information already exist?
- Can or is data or information collected consistently over time to enable trend evaluations and year-to-year comparisons?

Product stewardship performance measures may be quantitative or more qualitative. Measures generally relate to several major areas: 1) recovery, reuse, and recycling; 2) material; and 3) environmental/health impacts. Examples of the types commonly used in product stewardship programs are described below:

- Recovery, reuse and recycling:
    - Collection rate expressed as % collected of the amount generated or available for collection or % collected of amount sold in a given time period.
    - Reuse, recycling or recovery rate expressed similar to collection rates or in per capita amounts.
    - Number of units or weight of material/products collected or recycled.

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- Amount of greenhouse gas reduced, related to the amount of recovery, reuse, or recycling of the product or group of products over a given time period.

- Collection convenience, measured in terms of geographic distribution, population, distance from population served, etc.
- Type and amount of public outreach or awareness campaigns.
- Product design improvements, such as design for disassembly; design for improved durability, upgradeability, or ease of repair.

- Materials:
  - Amount of specific toxic(s) constituents reduced or eliminated per product produced. This could relate to constituents in the product or constituents generated in the manufacture of the product or both.
  - Post consumer recycled content or recycled content in a product.
  - Greenhouse gas reduced related to the manufacture of the product.
  - Product packaging improvements, e.g. light-weighting, elimination of secondary packaging, etc.
  - Product content transparency, e.g. labeling, disclosure, etc.
  - Type and amount of public outreach or awareness campaigns.
  - Product design improvements e.g. reduced use of toxics and materials in product and product manufacturing process.
- Environmental impacts
  - Government procurement requirements for products that meet established environmental requirements such as Energy Star, EPEAT, RoHS type toxic reduction standards, etc.
  - Toxics reduction, product design improvements, and greenhouse gas reductions as stated in the categories above also are relevant in this category.

Below is a list provides examples of performance measures used in existing product stewardship programs. The list is not all inclusive, but intended to provide some samples to help understand how performance goals and measures can help establish program focus and accomplishments. The examples do not include measures related to product design or other "upstream" lifecycle impact considerations largely because most of the examples found for existing product stewardship programs pertain to end-of-life management goals. If there is a desire to focus on product design or other "upstream" life cycle impacts in a product stewardship program, then developing performance measures around those types of accomplishments should be considered.

C. Specific examples used by existing programs

Oregon:

- ***The Oregon e-waste law*** has two performance measures: 1) each registered manufacturer is required to collect at a minimum an annual "return share" by weight of covered products, as determined by the Department based on brand sampling and the amount of covered products collected the previous year. 2) Each manufacturer plan and the state contractor program are required to provide convenient and available collection options for the public, at no cost to the public. Convenient is defined as statewide in urban and rural areas of the state with at least one collection site in each city with a population of 10,000 or greater and collection service in each county.
- ***The Oregon paint law*** has one very general performance measure for collection convenience – to provide convenient and available collection statewide in urban and rural areas of the state. In addition to the collection standard in law, the

approved stewardship plan has a quantitative estimate set by the producers to collect 550,000 gallons of paint in year one of the program, and increasing that amount by 6% annually in the following years of the pilot

- ***Oregon solid waste law,*** although not a product stewardship program, establishes both a statewide goal for recycling and a goal for waste generation. These goals are phased-in and quantifiable. Recycling is 45% of waste generated in 2005 and 50% in 2009. Waste generation is no annual per capita increase in generation by 2005 and beyond and no annual increase in total waste generation by 2009 and beyond. Wastesheds are also required to set their own recycling rates, which have consequences if not achieved.

Other Product Stewardship Programs:

- ***European Union's Waste Electronic and Electrical Equipment (WEEE) Directive,*** covering such products as computers, monitors, televisions, electrical appliances, and lighting, *had* a 2006 collection rate goal of 4kg (8.8 lbs) per person from households by 2006. There is a new proposed mandatory collection rate of 65% of the average weight of electrical and electronic equipment placed on the market over the previous two years. The WEEE directive has a companion directive, the Restriction of Hazardous Substances (RoHS), which sets restrictions on the use of different hazardous substances in the covered products.
- ***Washington's Mercury Containing Lights Act 2010*** has a goal of recycling all end-of-life mercury containing lights by 2020.
- ***Maine's Mercury-added Lamps Law*** directs household mercury-added lamps to be recycled at a rate of 75% of what is sold. The consequence if not achieved is that the state may require modifications to the programs. The Maine law also establishes mercury content standards for lamps sold in Maine.
- ***Minnesota E-waste law*** sets a graduated goal for recycling covered products. In year 1 manufacturer's must recycle an amount equal to 60% of what is sold by weight the previous year. In year two that amount increases to 80%.
- ***British Columbia Product Stewardship Program*** establishes a general goal for all product specific programs of achieving a 75% or higher recovery rate for products sold. In addition product specific plans must provide information on how that goal will be achieved over a reasonable timeline, and may establish additional performance standards.
- ***Ontario Product Stewardship Program*** does not set goals but requires producers to set targets or goals in their plans.
- ***National Carpet MOU*** has an overall goal of 40% diversion of discarded carpet from landfilling by 2012. There are also sub-goals for reuse, recycling, and waste-to-energy. (Voluntary program)
- ***End of Life Vehicle Solutions (ELVS) Program*** has a collection target of 80 to 90% of available mercury switches by 2017. (voluntary program)

In addition to the examples above, it should be noted that many product stewardship laws in the United States and abroad, as well as voluntary programs, do not require or have performance measures. Reported information suggests that programs with goals and/or standards perform at a higher level than those without. For example, the EU WEEE programs recycle between 55% and 86% of waste products, depending upon the country. The British Columbia program collects 77% of available waste paint and 70% of pesticide containers.

In the more recent product stewardship programs adopted in the US it appears that setting a collection or recycling rate based on % of waste collected out of amount of product sold over some established time period is often used as the metric.

D. Considerations for use of performance measures

Following the adage that "you get what you measure", deciding what performance measures to put in place for a program requires careful consideration of what the purpose of the program is and what is trying to be accomplished. In addition to answering the question, there are other considerations to weigh in designing the appropriate performance measures. The list below is not intended to be inclusive, but to touch on some of the key points to consider.

- Benefits
    - Focus programs on results
    - Useful for public reporting of program performance
    - Assure key program elements are provided, e.g. convenient collection
    - Allow for producer flexibility in how they implement the program
    - Target most important environmental sustainability and human health protections by putting the focus on the most important concerns related to a specific product.
    - Provide information that can be compared from year to year and can be used to make adjustments to programs as they mature.

- Concerns/issues
    - Unintended consequences. For example, establishing a performance measure for a particular product to increase, by weight, per capita recycling of a product might discourage or penalize the light-weighting of a product which may result in a greater reduction of environmental impacts. It is important to examine the possible multiple impacts of a performance measure before deciding on which measure best drives the desired results.
    - If the primary goal of the program is to improve environmental sustainability and increase human health protection, it is important to consider the full life cycle impacts of a product in order to help establish a performance measure that puts the focus on addressing the impacts that are of greatest concern.
    - Cost vs. benefit. Collecting data and information can be costly. Important to try and work with information and data already being collected if possible. To the extent there are multiple programs in various states and nations that impact the same producers coordinated measures and data/information reporting should be evaluated.
    - Calculation of collection, reuse, recycling rates based on amount generated or available for collection can be difficult. Estimating what is available for collection based on how much is in storage in homes and businesses, product life span, and availability of disposal data can be complicated and highly variable. Measurements based on sales can also be difficult if sales data is not available on a state by state basis.
    - Requiring disclosure about toxics in products or their manufacture can be sensitive and difficult to track and report.
    - Consistency in data and information collection across an industry sector is challenging when it relates to what is in a product and what impacts are generated in the manufacturing process and supply chain.

E. Variations on approach

In addition to the various types of performance measures described in section B of this paper, there are some additional basic points to consider when establishing a product stewardship program.

- Use both quantifiable measures along with more subjective quality measures. One does not have to be used exclusive of the other if both will help achieve the program purposes.
- Consider phasing in performance measures or establishing a far reaching goal with interim sub-goals.
- Consider who can best establish the performance measures, the timing of the measures, and the need for consequences and rewards when measures are and are not met. The vehicle for performance measure establishment will also impact the options for public input, enforceability, and the ease of adjusting measures. Options may include:
    - Producers as part of their plan
    - Legislation
    - Combination approach with metric in legislation and producers in plan setting the actual goal
- Consider provisions for adjustments to performance measures over time – both in terms of what the measure is and/or what the amount is.
- Consider the link between performance measures and incentives for accomplishing the programs intended purpose. In some cases it may make sense to establish incentives to achieve an intended purpose of the program instead of a performance measure with consequences. Or, it may make sense to begin with incentives and over time move to performance measures. This will depend on such things as the product, the purpose, established programs elsewhere, and the "state of the industry" related to the purpose.

F. Discussion Questions

- How important are performance measures for a product stewardship program?
    - Should they generally be quantifiable, like "rates and dates", or more descriptive in nature, or a combination of both?
- Who should establish performance measures for a program?
    - Should measures be set in legislation, set by the oversight agency, set by the producers in their plans, or some combination of these approaches?
- Do programs need performance measures to help drive both "upstream" and "downstream" program achievements?
- When is it useful to have aspirational goals and when should performance measures be enforceable or have consequences if not achieved?

G. References and resources

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