

Beyond Waste Implementation Working Group

The Next 50%

The Beyond Waste Implementation Working Group has developed proposals that will contribute to reductions of greenhouse gas generation associated with solid wastes when implemented, building on the prioritized recommendations from the 2007 CAT process known as *AW-3: Significant Expansion of Source Reduction, Reuse, Recycling, and Composting* and the CAT's 2007 interim report headline titled: *Recommendation 11 Reduce waste and Washington's emissions of GHGs through improved product choices and resource stewardship*. Additional information and recommendations related to 2007 CAT priorities are in Attachment X.

Through the waste reduction and recycling efforts of the last 20 years, Washington is now diverting about 48% of the solid waste generated in the state to reuse, recycling and beneficial use applications. Though we don't know exactly how much greenhouse gas reductions this represents it is several million metric tons of CO₂ equivalents (MMT_{CO2E}) per year, probably more. We believe that pursuing the recommended strategies to recycle "the next 50%" will result in at least a measurable 6 MMT_{CO2E} per year more being reduced.

Beyond Waste Implementation Working Group Goal:

To significantly expand source reduction, reuse, recycling and composting and build on what is best and most successful in current waste management system by developing an implementation plan targeting products with the largest GHG reduction potential.

To accomplish the goal the IWG was charged to build on existing source separation strategies and the state's solid waste management plan – the Beyond Waste Plan - implementation approaches. The group was to develop an implementation plan considering actions that:

- Optimize the collection and processing infrastructure needed to more effectively capture recyclable materials with the highest carbon footprint generated from industrial, commercial, agricultural and residential sources;
- Expand, recruit or develop in-state businesses that use recyclable materials in their manufacturing processes (including investment, financing and incentives);
- Remove organics from the disposal stream so that they can be beneficially used for healthy soils, bioenergy production and new products;
- Create product stewardship framework legislation applicable to consumer products focusing on the full product life-cycle including cradle-to-cradle design, material and energy content, manufacturing and end of life recycling/reuse;
- Determine actions to expand byproduct synergy, zero waste business practices, design for the environment and other emerging commercial activities;
- Review implementation of existing environmentally preferred purchasing policies and recommended new environmentally preferred purchasing policies to be used by state and local government entities, that will result in reduced GHG generation; and
- Support and expand consumer product reuse and related business activities.

Through the IWG deliberations, the following materials were targeted as have significant greenhouse gas reduction potential:

- Paper (2.7 MMT_{CO2E} potentially available)
- Organics (.8 MMT_{CO2E} potentially available from food waste alone)
- Metals (At least 1.3 MMT_{CO2E} potentially available)
- Construction and Demolition Waste (1 MMT_{CO2E} in carpet alone)
- Plastics (.1MMT_{CO2E} from plastic bottles alone)
- Contaminants (GHG reduction potential is not known, however, contaminants reduce the recyclability of the targeted materials above).

The tonnage estimates reflect the results of using the USEPA WARM model for calculating GHG reductions related to alternative solid waste management methods. The WARM model is incomplete. The tool does not calculate GHG reduction potential for all products and materials. So, the potential for realizing additional greenhouse gas reductions is very high.

In addition, there is the potential of .75MMTCO₂E to be realized through anaerobic digestion of dairy wastes. This potential becomes greater with the addition of other organic farm and food processing wastes.

The IWG developed many action proposals to accomplish the outlined tasks. To winnow the many ideas down to the few, the criteria of “readiness to proceed” and “GHG reduction potential” were used.

It is important to remember that the solid waste management system is part of larger systems. Materials are extracted, turned into products, used and then disposed. The solid waste management system has traditionally focused only on the last point in the system – disposal. Recycling has been demonstrated to be an effective strategy to reduce the impacts of disposal. It is now recognized as being an effective tool to reduce the upstream impacts of extraction, product and use as well. The action proposals set forth below keep these farther reaching benefits in mind.

Action Recommendations and Implementation Timeline

For 2009 legislative session:

- 1 A. *Optimize the Solid Waste Collection System* – focuses on collection and creates financing mechanisms to accomplish these actions
- 1 B. *Product stewardship framework legislation* – Aimed at improving the environmental performance of products, specifically reducing their carbon footprint and increasing their recycling.
- 1 C. *Establishing a comprehensive organics management system* -
 1. Green electricity – Bio-power/Anaerobic Digestion Legislation
 2. Compost products use subsidy
 3. Compost product procurement by the Department of Transportation

Non-legislative actions for 2009:

- 2.A. Collaborate with industry to influence the supply chain, particularly retail
- 2.B. Establish a workgroup by Governor’s Executive Order to develop an Environmentally Responsible Purchasing strategy for state and local governments

Develop for the 2010 legislative session:

- 3.A. Establish strong government environmental procurement and responsible purchasing practices in statute
- 3.B. Gain legislative authorization of a sustainable product design institute

Develop for the 2011 legislative session:

4. Stimulating Recycled Material Use
 - Incentives for Industry
 - Assure utilization of collected materials through aggressive market development strategies
 - Research and Development

Additional recommendations can be found in Appendix X

Title: 1A *Optimize the solid waste collection system***2009 Action Description:**

- The goal is to optimize the collection of recyclable materials and products, construction and demolition debris and organics for recycling in Washington State to meet a new recycling goal of 80% by 2020.
- The fundamental strategy to achieve this goal is to require source separation of materials and wastes by generators and require participation in provided collection services with differentiation between residential and commercial generations as to how that service is provided.
- The action will increase the collection of recyclables, organics and waste through required source separation and collection programs for residences. It also requires businesses to source separate and provide for recycling of materials they generate.
- Local governments will be required to update their local comprehensive solid waste management plans on a phased schedule based on population size and location or contract renewal, describing the services that will be provided.
- Local governments are to write plans to assure construction and demolition wastes are reused and recycled at permitted recycling businesses.
- Financial incentives are provided to the private sector to encourage investment in the infrastructure needed to support this action.
- The solid waste collection tax is increased to assure that funding is available to implement these requirements by state and local governments, while maintaining support of the public works trust fund, the primary benefactor of the tax.

Basis for Selection:

- The result will contribute to the reduction of GHG annually by over six MMTCO₂E when fully implemented, based on current waste generation calculations. Based on generation trends and anticipated population growth, this number will be much higher in 2020.

Implementation Approach and Mechanisms:

- Amendments to Chapter 70.95 RCW are required, (see “Legislative Proposal Overview” below). The amendments require updates of local solid waste management plans.
- A funding mechanism is offered to increase revenues generated by the solid waste collection tax required by Chapter 82.18 RCW by increasing the tax rate on collection of garbage and applying a differential rate collection of recyclable materials and organics.
- There is concern over requiring commercial and industrial recycling expressed by the private recycling industry. The proposal, however, only requires that these generators source separate wastes and participate in recycling. It does not require them to use any specific recyclable collection service provider.

- It is not the intent to eliminate the potential for recycling to be a part of the new “carbon market” strategies by expanding collection.

Supporting Information:

- **Greenhouse Gas Reduction Potential if these targeted materials are recycled:**
 - Paper (2.7 MMTCO₂E potentially available)
 - Organics (.8 MMTCO₂E potentially available from food waste alone)
 - Metals (At least 1.3 MMTCO₂E potentially available)
 - Construction and Demolition Waste (1 MMTCO₂E in carpet alone)
 - Plastics (.1MMTCO₂E from plastic bottles alone)
 - Contaminants (GHG potential not known, however, contaminants reduce the recyclability of the targeted materials above).
- **Costs or cost savings:** Recycling has proven to be more cost effective than disposal. Recycling costs less than disposal given that a disposal fee is avoided and that marketing of recyclables generates revenue. The cost of collection remains, in either case.
- **Distribution of costs and benefits:** Costs will be borne by rate-payers, the benefactors of the services provided. This is a pay as you go proposal.
- **Additional external benefits:** This action will create more green collar jobs in businesses and industries that collect, process and use recycled materials.
- **Engagement opportunities for individual action/behavior change:** Participating in recycling and engaging in waste reduction activities is direct and tangible way the general public can engage and be part of the climate change solution.
- **Economic Implications:** The climate change action agenda demands a shift in our economy. The traditional “dig and dump” economy relies heavily on resource extraction and waste disposal. The new “sustainable” economy will rely on resource conservation and materials reutilization. A robust recycling system, starting with collection, is the key to making this new economic system work.
- **Engagement opportunities for local and regional governments and private sector:** This action relies completely on the ability of local governments and the private sector to work collaboratively to provide services to the public.

Legislative Proposal Overview

- The goal is to optimize the collection of recyclable materials and products, construction and demolition debris and organics for recycling in Washington State to meet a new recycling goal of 80% by 2020.

FOR RESIDENTIAL

- The fundamental strategies to achieve this goal related to residential waste are to:
 - Maximize source separation of recyclable materials, organic materials and wastes by residential generators
 - Require participation in collection services where they are available.
 - Provide collection of recyclable materials, organics and wastes separately, at a minimum
- At a minimum, recyclable materials include paper products, container metals, container glass and container plastics number 1 and 2. Organic materials include yard and garden wastes, food waste and food contaminated paper. Construction and demolition wastes are not considered part of the residential waste stream.
- All recycling facilities that receive recyclable materials from residential generators are identified and properly permitted.
- Applicability: Residential includes both single-family and multi-family dwellings.

FOR COMMERCIAL

- The fundamental strategies to achieve this goal related to commercial waste are to:
 - Require source separation of recyclable materials, organic materials and wastes by commercial generators;
 - Assure comprehensive collection services are available and provided for recyclable materials, organic materials and wastes separately; and
 - Verify that materials collected for recycling are recycled.
- Local solid waste planning jurisdictions must identify through the local comprehensive solid waste management plans:
 - Collection services that are available for metals, paper products and organics to commercial generators. Jurisdictions can consider a variety of alternatives.
 - Properly permitted recycling facilities that receive recyclable materials from commercial generators..
 - How commercial generators will be informed of and have access to the recycling service options available.
 - What will be done if options are not accessible.
- Commercial generators must separate their unwanted materials into at least three material streams: recyclable materials, organic materials and garbage. They must have these materials collected by one of the available collection service providers identified by the local jurisdiction.
- Organics collection services may be phased if markets are not currently available. The local planning jurisdiction must write a plan to develop those markets, in collaboration with their local economic development councils.
- For all material categories, the local government may apply for a waiver of these collection requirements from Ecology if end-use markets fail to develop. The local government must demonstrate efforts to develop markets in collaboration with private industry before a waiver can be issued.
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- Applicability:
 - All commercial businesses, non-profit organizations, and government facilities.

Note: Federal law precludes state and local government regulation of commercial recyclables collection and transportation rates, routes & services.

FOR CONSTRUCTION AND DEMOLITION DEBRIS

- The fundamental strategies to achieve this goal related to construction and demolition wastes are to:
 - Require local solid waste planning jurisdictions to develop construction and demolition wastes reduction, reuse and recycling elements within the local comprehensive solid waste management plan;
 - Provide technical assistance from Ecology to local planning jurisdictions via model ordinances that can be adopted by local governments; and
 - Verify that materials collected for reuse and recycling are reused or recycled.
- At a minimum, C & D debris generators must separate their unwanted materials into at least two material streams: 1. reusable and recyclable materials; and 2. waste. Generators must have these materials collected by one of the available collection service providers.
- Applicability:
 - All construction and demolition projects requiring a building permit.

Note: Federal law precludes state and local government regulation of commercial recyclables collection and transportation rates, routes & services.

○ LOCAL GOVERNMENT PLANNING REQUIREMENTS

- Local governments will be required to update their local comprehensive solid waste management plans and must consider constraints such as contract renewals, etc. The updated plans will describe how services will be provided in all contiguous incorporated and unincorporated areas with a population density* of 333 persons per square mile according to the planning schedule below:
 - July 1, 2011 for the counties of Clark, King, Kitsap, Pierce, Snohomish, and Spokane and all the cities therein;
 - July 1, 2012 for the counties of Benton, Franklin, Walla Walla and Yakima and all the cities therein;
 - July 1, 2013 for the counties of Cowlitz, Grays Harbor, Island, Lewis, Mason, Skagit, Thurston and Whatcom and all the cities therein; and
 - July 1, 2014 for the counties of Chelan, Clallam, and Grant and all the cities therein.

Participation is optional for:

- **The counties of Adams, Asotin, Douglas, Ferry, Garfield, Jefferson, Kittitas, Klickitat, Whitman Lincoln, Pacific, Pend Oreille, Okanogan, Columbia, San Juan, Skamania, Stevens and Wahkiakum; and
- Any cities and areas in the state that do not have waste collection services as of January 1, 2009.
- Any city with a population of 1,500 or less that is only bordered by an unincorporated area of a county within the counties required to write plan updates.

If these jurisdictional areas do choose to participate, their plans would be due no later than July 1, 2016.

*There are 640 acres per square mile. Rural residential zoning that provides a minimum of one single family dwelling per five acres or 128 single family units per square mile has been commonly practiced within the state. The average persons per household in the U. S. were 2.6 in 2000. So, 128×2.6 is 333 persons per square mile.

**These 18 counties have less than 50,000 population each. The total combined population of these counties is 366,700 according 2005 population estimates. That is just less than 6% of the states total population.

FINANCING RECOMMENDATIONS:

1. Increase the Solid Waste Collection Tax - The application of the solid waste collection tax should be expanded to include collection of recyclables and organics as well as “garbage.” As the shift to the “Beyond Waste” economy takes place, shifts in our thinking about taxing garbage as a revenue generator must change as well.

Currently the solid waste collection tax is applied only to the garbage collection costs. It is used as a funding source for the “Public Works Trust Account.” The rate is 3.6%. The tax generated about \$33.1 million in fiscal year 2008 at an average cost of about \$13 per household. There is concern that as recycling increases, revenues for the Public Works Trust Account will decline. This proposal assures that the Public Works Trust Account remains stable and whole over time and provides funding for solid waste management activities required of state and local governments

The rate would change. However, a differential rate would replace the current flat rate. The differential rate for “garbage” collection services could not be more than 3.6% higher than the rate set for recycling collection services.

For example, if the rate was 2.4% on recycling and organics collection services, it could be no higher than 6% on garbage collection services and self-haul waste. .

The increased revenue would first be used to continue to fund the Public Works Trust Account. The balance would be used to fund the required solid waste management activities of state and local government. It could be used for incentives for materials utilization (specifically organics), education programs, tracking and reporting and enforcement. It could also be potentially used to build infrastructure that specifically supports industries that utilize recycled materials as feedstock.

The IWG is in the process of determining the revenue need. The example given would likely be the highest percentage taxes requested.

2. Financial Incentives for Certificated Solid Waste Collection Companies – Allow financial incentives to private collection companies to encourage the upfront private monies that are required, in lieu of public dollars, to fully realize the universal system build out and maintain the current disposal based system during the transition to a recycling based (and funded) system. WUTC would work with the regulated private sector providers to develop a “Climate Change Portfolio” of financial incentives.

3. Revenue Sharing Between Haulers and Generators – Current law allows solid waste collection companies to retain up to 30% of the revenue generated from the sales of recycled materials as negotiated between the company and the local planning jurisdiction. 70% is returned to generators through reduction in their garbage bills. To provide a stronger incentive the solid waste collection companies, this revenue sharing lid should be increased to 50%. The amount of the revenue sharing should continue to be

negotiated between solid waste jurisdiction and the collection service provider as a means to incentivize the collection service provider to improve recycling systems, improve the quality of recycled materials for market and increase market development efforts.

Title: 1B Product Stewardship Framework Legislation

2009 Action Description:

- The goal is to establish a legislative framework utilizing product stewardship to minimize the environmental and health impacts of products throughout all stages of their lifecycle, including GHG emission impacts. “Product stewardship” policies require that producers take responsibility to manage and reduce the entire life-cycle impacts of their products from product design to end-of-life management.
- Product stewardship framework policy includes:
 - requirements that producers (not local or state government) finance and provide product stewardship programs that provide environmentally-sound collection, transportation, reuse, and either recycling or disposal (as appropriate) of selected products.
 - an effective approach for decreasing GHG generation.
 - language to encourage the design of products that are less toxic, more recyclable, more energy efficient, and have lower GHG emissions during the product’s lifecycle.
 - a process for building markets for the recyclable materials.
 - a process for adding products to be covered by the legislation over time.
 - a process for evaluation of performance.

Basis for Selection:

Recycling Significantly Reduces GHGs. There is a large potential to increase the recycling and diversion of products that are currently being disposed and thus to decrease GHG emissions. This proposal could reduce GHG by over 1.5 million tons CO₂e (see below). Additionally, a pending EPA report documents that 46% of US GHG production is a result products – production and provision of goods and materials and food, (EPA OSWER).

A Changing Waste Stream Requires Creative Solutions. A century ago, garbage was mostly coal ash and food waste with a small amount of simple manufactured products, like paper and glass. Now, product waste makes up 75% of per capita waste. Many of these products -- like paint, electronic products and fluorescent light bulbs -- are hard to recycle and contain toxic components. Local governments do not have adequate budgets to finance the special collection systems needed for these complicated products. And current recycling systems may be challenged to keep up with product design changes. Product stewardship links product design with disposal impacts so that producers take end-of-life impacts into account during the design phase.

Provides a Recycling Solution for Energy Efficient Products that Contain Mercury. Products such as fluorescent lights that can significantly reduce energy consumption do not currently have convenient, free, safe recycling options. This could create a disincentive for consumers to purchase and use these energy-saving products. Product stewardship programs provide a convenient and environmentally-sound management program for these products.

Provides an Incentive to Design Greener Products. There are currently few financial incentives for manufacturers to design products with smaller carbon footprints. Product stewardship links product design with end-of-life impacts so that producers take those end-of-life impacts into account during the design phase. Framework legislation would require producers to be responsible for the product throughout the lifecycle of the product – thus providing an incentive to design products that are more environmentally benign.

Complements Collection Programs for Traditional Recyclables. Framework legislation makes producers responsible for handling products that may be toxic and difficult to handle in existing, effective programs, such as curbside collection. This cuts down on contamination and increases the recyclability of materials that continue to be collected at the curb and through other efficient methods. Some products may be most effectively collected through expanded curbside services or the creation of innovative new collection methods, which would therefore increase the economy-of-scale and efficiency of those services.

Framework Legislation in Place in Canada and Gaining Recognition in US. Framework policies exist in British Columbia and Ontario, Canada for paint, packaging, electronics, pharmaceuticals, solvents, pesticides, batteries, oil and tires. The Canadian Ministry of the Environment is currently working on a plan to harmonize framework policies across Canada. The Minnesota state legislature has passed a bill directing the state to establish a product stewardship framework policy. Framework legislation is being proposed in at least two other states in 2009.

Framework Legislation Addresses the 2007 CAT's Recommendations. *Recommendation 11: Reduce waste and Washington's emissions of GHGs through improved product choices and resource stewardship, including the specific implementation elements outlined in the strategy identified as AW-3: Significant Expansion of Source Reduction, Reuse, Recycling, and Composting, RCI 8: Consumer Education Programs, Including Labeling of Embodied Life-Cycle Energy and Carbon Content of Products and Buildings, and RCI- 10: More Stringent Appliance/Equipment/Lighting Efficiency Standards, and Appliance and Lighting Product Recycling and Design.*

Framework Legislation Can Be Adapted to Address Single Products of Concern. The framework legislation text can be adapted to be used as legislation for addressing a single product of concern, such as fluorescent (mercury-containing) lighting. A sample is provided within this report.

Implementation Approach and Mechanisms:

Pass Legislation: Framework legislation has been drafted that could be introduced into the 2009 legislative session, or that could be adapted to address single products of concern until the time that the full framework legislation is passed. If the framework passed in 2009, the law would be effective in July 2009. Producers would fully provide recycling programs for an initial set of products by 2011, with additional products potentially added annually.

Key support and barriers to implementation.

Likely Supporters:

- Residents who want convenient recycling programs for many additional products.
- Schools, charities, and small businesses who want to be able to participate in free and convenient recycling programs for the products they discard.
- Non-profit advocacy groups interested in energy efficiency, GHG reduction, and increased prevention and recycling.
- Non-profit charitable reuse organizations, such as Goodwill, who often have unwanted products dumped on them as “donations” and then incur costs to properly dispose.
- Local governments who want their residents to be provided with recycling programs but are not able to adequately finance programs for many hard-to-handle products.

- State government. Product stewardship approaches have been identified as needed in numerous processes and reports by various agencies and are consistent with Washington's electronics recycling law.
- Retailers. Product stewardship typically has greater acceptability among retailers than fees at point of purchase.
- A few specific manufacturers and industries that could move toward support of this approach.

Possible Opposition:

- Manufacturers and industries that would be required to arrange and finance recycling programs for their products, as well as from industry associations representing the general business community. This is being addressed by building relationships with industries and industry members already in a good position to implement a product stewardship system, and by listening to their concerns and input regarding program structure. Lessons are also being taken from the successes of the electronics product stewardship system in WA and other states.

Key Components of a Shared Responsibility Approach.

In the proposed product stewardship system, responsibilities and roles would be shared as described below.

Program Implementation: Producers – not state or local governments – would set up and pay for the recycling programs. The law would not prescribe specific program details, but instead allows the manufacturers flexibility in designing and providing the program. Producers would be responsible for developing stewardship plans, which the Department of Ecology would review and approve prior to implementation.

Sustainable Program Financing: Financing for the manufacturer provided recycling programs comes from the manufacturers, not from State funds. The Department of Ecology would recover its minimal costs to administratively oversee and enforce the program from the manufacturers. This producer-pays approach minimizes costs to the State and establishes sustainable financing.

Stewardship Organizations May Operate the Program: Producers are required to provide the collection, transportation and recycling programs for their products. Industry-run stewardship organizations may be contracted to operate the programs on behalf of the producers. Producers will work with processors and collectors, such as retailers, haulers, charities, and local governments

Consumer Participation: Consumers will return their unwanted products to the stewardship programs.

Enforcement and Oversight: The Department of Ecology will provide regulatory oversight and enforcement. Ecology, with accountability to the legislature, would also determine additional products to be covered by product stewardship programs through the use of an advisory committee and rulemaking process.

Education and Outreach: A number of participants, including manufacturers, collectors, retailers, local governments and state government, will share responsibility for education and outreach.

Supporting Information:

Potential GHG Emissions from Products: Initial products that could be covered by stewardship programs include carpet, rechargeable batteries, fluorescent lighting, paint, and mercury-containing thermostats. In addition, agricultural chemical containers, additional electronics, and aerosol products

containing ODS (Ozone Depleting Substitutes) used by non-professionals could be considered. The next tier of targeted products could include packaging and containers, plastic products, and propane gas tanks.

Potential GHG emission reductions include:

- Carpeting can potentially reduce GHG emissions by up to 922,000 tons CO₂e (assuming 100% recycling).
- Packaging containers comprising container glass, PET bottles, aluminum cans, and tin cans has the potential to reduce GHG emissions by up to 600,000 tons CO₂e (assuming 100% recycling).
- Paper packaging in the waste stream also has the potential for significant GHG reductions, but information is currently not available on the amount of paper in the waste stream utilized for packaging.
- Data on fluorescent lighting, rechargeable batteries, additional electronics, propane gas tanks, paint, etc is not currently available because the WARM model is not set up to calculate such data.

Citizens Want Fluorescent Lamp Recycling Programs. Due to the new 2007 national appliance and equipment efficiency standards, people will need to purchase fluorescent lighting products as incandescent lamps are phased out. Washington needs a recycling program, paid for by the lamp manufacturers, that will allow our citizens to safely recycle their lamps at no charge. By requiring that manufacturers be responsible for their product at the end of life, it provides an incentive for the design of new energy-efficient lamps that don't contain mercury or other toxic components.

Stewardship Programs Bring Jobs. Product stewardship programs utilize and build on existing and efficient collection, transportation and processing approaches and infrastructure, as well as create new business opportunities, processing activities, market development, and green jobs.

Citizens Want Stewardship Programs. Recent surveys have demonstrated that individuals support product stewardship concepts. A SoundStats™ survey that focused on unwanted electronic products found:

- 94% of respondents agreed that corporations that make electronic products should be responsible for designing them to be easily recyclable and less toxic.
- 92% also agreed that when these products contain toxic lead and mercury, these corporations should provide a safe and convenient way to recycle them.
- 71% of respondents would prefer that pre-paid recycling costs be included in the price of the product.
- Over 61% of respondents would prefer to take their computers and electronic products back to a retailer for recycling.

Legislative Proposal Overview

Intent and Findings

- Convenient and environmentally sound product stewardship programs help protect our environment and the health of residents.
- Producers are the best entity to manage and finance product stewardship programs.
- Product stewardship programs encourage the design of products that have a lower carbon footprint and that are less toxic, less energy and material intensive, and more reusable and recyclable.

What is Product Stewardship?

“**Product stewardship**” means that producers take responsibility to manage and reduce the entire life-cycle impacts of their products and/or their packaging, from product design to end-of-life management.

“**Product stewardship program**” means a program that addresses the lifecycle impacts of a product and includes the collection, transportation, reuse, and either recycling or disposal, or both, of unwanted products, including historical products and the program’s fair share of orphan products. The product stewardship program is financed as well as managed or provided by the producers of those products.

“**Producer**” means a person that:

- (a) Has legal ownership of the brand, brand-name or cobrand of a covered product sold in or into Washington state;
- (b) Imports a covered product branded by a producer that meets (a) of this subsection and that producer has no physical presence in the United States; or
- (c) Sells at wholesale or retail a covered product and does not have legal ownership of the brand, and elects to fulfill the responsibilities of the producer for that product.

Product stewardship program required

Every producer of covered products and covered product categories sold in or into the state must participate in a product stewardship program by either:

- operating, individually or collectively with other producers, a product stewardship program approved by the department; or
- entering into an agreement with a stewardship organization to operate, on the producer’s behalf, a product stewardship program approved by the department.

Initial covered products

The Legislature could decide to include an initial set of products and example text has been drafted for carpet, mercury-containing lighting, mercury-containing thermostats, paint and rechargeable batteries.

Product selection process

At least every two years, the department will consider and evaluate through rulemaking, product categories or products to designate for product stewardship programs. The department will also determine the covered entities, the implementation date, management requirements and any labeling requirements for each additional product category. The department will also determine whether a product’s packaging is designated as a product.

Criteria for product selection:

- climate change impacts and benefits;

- energy conservation potential;
- public and environmental health and safety;
- resource recovery and material conservation potential;
- toxicity of the product;
- opportunity to achieve greater waste reduction, toxicity reduction, design for recycling, recycled content, and recycling;
- potential of a product to act as a contaminant in the materials streams collected in residential and commercial recycling programs;
- concerns about disposing of the product in the waste stream;
- the costs of management to local governments, ratepayers, and taxpayers in the absence of product stewardship programs;
- the opportunity to use existing and new businesses and infrastructure to manage products or product categories proposed for designation and to use or increase markets that utilize the recovered materials from such products or product categories;
- public demand;
- success in collecting and processing similar products in other programs in the U.S. and other countries; and
- the advice of the Advisory Committee.

Advisory committee to the department

The department will appoint and consult with an advisory committee of up to 15 members regarding new products or product categories, covered entities, implementation dates, management requirements, performance goals, labeling requirements, and other inputs requested by the department. The advisory committee shall vet the department's recommendations on new products or product categories.

The public may petition the department to consider products for inclusion in product stewardship programs required under this chapter. The department shall adopt rules describing the petition process. Public petitions will be considered during the product selection process established in section xxx of this chapter.

Involvement of the legislature

Before adoption of new products or product categories into regulations, the department must present the list of products or product categories to the appropriate standing committees of the legislature.

Product stewardship plan requirements

Plans describing the product stewardship program must be submitted to the department for approval. The plans must include the following:

- Contact information and participating producers;
- Performance and recovery goals for the first three years of the program;
- Description of the collection system(s) that will be used, including how unwanted products will be collected in all counties in the state and for all cities with populations greater than 10,000;
- Description of the handling systems and processing or disposal systems that will be used;
- How hazardous substances will be tracked through to final disposition;
- Best management practices that will be used by first processors and their downstream vendors to assure that hazardous substances and wastes are not released into the environment or impact human health;
- Description of how the program will seek to use businesses within the state, including retailers, processors, and collection and transportation services, in the implementation of the plan.
- Amount of green house gas reductions anticipated from implementation of the collection, transportation and recycling program;
- Financing mechanisms that will be used;
- Strategies to manage and reduce life-cycle impacts of the products and packaging, from product design to end-of-life management;
- Description of how producers participating in the plan will communicate and work with processors and recyclers used by that plan to encourage sustainable design of products and packaging;

- Education and outreach strategy, including how the program will measure the effectiveness of education and outreach; and
- A description of the process used to consult with affected stakeholders about the contents of the plan.

Required reuse or recycling

All products that have been collected by a product stewardship program must be reused or recycled, except if the department determines the products are not recyclable.

No fee to covered entity

Product stewardship programs shall be provided to covered entities without charging any fee at the time the unwanted products are delivered or collected for recycling or disposal.

Producers shall pay all the administrative costs, education and outreach costs, and operational costs associated with their product stewardship program, including the costs of collection, transportation, and recycling or disposal, or both, of the products covered by the program.

Education and outreach

Product stewardship programs must conduct effective and measurable education and outreach efforts promoting their use. Programs must provide pertinent information, including a toll free telephone number and website where collection options are listed, to covered entities, wholesalers, retailers, collectors, and other interested parties.

Education and outreach efforts must be sufficient to meet required recovery rates and to ensure that collection options are widely understood by covered entities.

If the program does not attain the required recovery rate, it must describe in its annual report what actions it will take during the next reporting period to do so, including how it will increase and improve its outreach and education.

Prison labor prohibited

No product stewardship program may include the use of federal or state prison labor for processing.

Encouraging collaboration

Producers are encouraged to collaborate with product retailers, certificated waste haulers, processors, recyclers, charities, and local governments within the state in the development and implementation of their plans.

Annual report

Annual reports describing the activities of the product stewardship program during the previous year must be submitted to the department.

Recovery rates

By June of the third program year for each product or product category, the department shall establish required recovery rates for the fourth and subsequent program years, and must establish a fine system for those producers and product stewardship programs that do not attain the mandated goals and rates.

The department will establish the fine system through rulemaking. Ecology will also establish through rulemaking a process for setting the recovery rates for the fourth and subsequent years and for adjusting recovery rates as needed.

Sale of covered products prohibited

As of the implementation date established by the department for each product, no producer, retailer or other person may sell or offer for sale that product to any person in this state unless the producer of the product is participating in an approved product stewardship plan.

Enforcement

Producers who are not participating in an approved product stewardship program and whose products continue to be sold in or into the state 60 days after receipt of a written warning, and retailers who sell products from producers who are not participating in an approved product stewardship program 60 days after receipt of the written warning, shall pay a fine of \$10,000 per day of noncompliance, beginning 60 days after receipt of the written warning.

Agency administrative costs paid by producers

The department may establish fees for administering this statute that are charged to the producers.

Anticompetitive conduct

A producer or stewardship organization that organizes product stewardship programs is authorized to engage in anticompetitive conduct to the extent necessary to plan and implement its chosen organized product stewardship program and is immune from liability under state laws relating to antitrust, restraint of trade, unfair trade practices, and other regulation of trade or commerce for this purpose.

No changes to WUTC authority

Nothing in this statute changes or limits the authority of the Washington utilities and transportation commission to regulate collection of solid waste in the state of Washington, including curbside collection of residential recyclable materials, nor does this statute change or limit the authority of a city or town to provide such service itself or by contract under RCW 81.77.020. (Note: consider additional reference to RCW 81.80 regarding commercial carriers.)

Draft Framework Legislation

This draft framework legislative text provides a means of identifying an initial set of products to be addressed or it could be run without identifying any specific products. The text can also be adapted to address a single product area of immediate concern if the Legislature is not ready pass an overall framework approach at this time. A sample of this approach using a product currently of particular concern, mercury-containing lighting, has been drafted and is provided to demonstrate the adaptability of the framework text.

Draft Legislation For Mercury-Containing Lighting Using Framework Approach

This sample draft legislative text for a product currently of particular importance and concern, mercury-containing lighting (fluorescent lighting), has been drafted and is provided to demonstrate the adaptability of the framework approach and text.

Title: *IC 1. Green electricity – Bio-power/Anaerobic Digestion Legislation*

2009 Action Description:

- The specific action of this portion of the Beyond Waste Implementation Work Group package is to pass legislation to further the development of green energy - biopower/anaerobic digestion projects and remove barriers that prevent projects going forward. The legislation (attached) has two parts:
 - Broadening renewable energy credits (also known as renewable energy cost recovery/ or in Europe feed-in tariffs) to include all anaerobic digestion systems (not just livestock). The purpose of this broadening is to significantly improve the economics and environmental handling of anaerobic digestion projects including dairies and feedlots. This is an adjustment to the legislation previously passed for solar electric (photovoltaic), wind and anaerobic digestion using livestock manure established in law (see RCW 82.16.110 to 140 and RCW 82.08.900); and
 - Requiring in-state utilities to wheel biopower/anaerobic digestion power to other in-state utilities in need to the renewable power. A modest fee not to exceed 5% of the value of the power or the standard utility transmission rate, which ever is lower, provides guidance.
- Definitions: An adjustment to the definition of anaerobic digestion is needed to include all wet organic material not just dairy/livestock manure. The definition in RCW 82.16.110 (4) is done by reference to a retail sales tax exemption in RCW 82.08.900. Therefore, the definition found in RCW 82.16.110 is amended in a manner within the draft legislation to ensure that there is no unintended ripple effect of adding a broader retail sales tax exemption to RCW 82.08.900.
- Procedural and administrative provisions and requirements: The administrative provisions for the renewable energy credits are already in place with the Department of Revenue and the WSU Extension Energy Program. Public and investor owned utilities have already implemented the original renewable energy credit application system. Utilities would need to enable the wheeling requirements of the legislation

Basis for Selection:

- Two rationales were used by the IWG to select this action:
 - Early anaerobic digestion/biopower projects have run into a number of barriers blocking full implementation. Some of these barriers include: 1) A low price offered by some of the state's 66 local utilities (WA is blessed with a limited but oversubscribed source of cheap hydropower). This has been the case even though new power sources are considerably more expensive; 2) Issues of interconnection or wheeling to a neighboring utility (willing purchaser); and 3) The need for cost reductions for northern climate digesters (WSU has invested over \$5 million in research and development to reduce this barrier). The legislation focuses on item one and two; and
 - A goal of 100 to 150 anaerobic digesters in the state has been envisioned for several years. Only two dairy digesters have been built in our state. Dairy digesters receive a double greenhouse gas reduction: 1) The shut down of a manure lagoon is a methane reduction pathway; 2) The biopower produced offsets natural gas or coal based power production.

An explanation of this second rationale is as follows: The Northwest has had over a quarter century of very strong policy analysis of its power grid. This is a distinct advantage in sorting out the greenhouse gas impact of energy efficiency, renewable energy, and CHP. The Northwest Power and Conservation Council is one of the major analytical bases for the Northwest <http://www.nwcouncil.org/>. If a megawatt (MW) of energy efficiency or CHP comes on line, what happens? The answer depends on whether or not the grid is in baseload mode or “on peak” (when a tough region wide cold snap occurs in winter for example). Our region has natural gas based “peaker” plants. They are also called “marginal resources”. On peak, we use less standalone natural gas. On base, we use less standalone coal based power from the Southwest or Eastern Montana. Note: Our hydropower system has been maxed out for years. So, we have wrapped around it energy efficiency, renewables, CHP, natural gas peaker plants, and imported coal based power. Biopower/anaerobic digestion is viewed as baseload power and as such can best be compared to the greenhouse gas production of coal based power. For an example of the depth of analysis see the I-937 presentation by the Northwest Power and Conservation Council staff (especially slides 25 to 31) at I-937 Rulemaking under conservation 2/23/07 “NWPCCC Conservation Methodology Presentation <http://www.cted.wa.gov/site/1001/default.aspx> .

Implementation Approach and Mechanisms:

- Draft legislation is attached. The drafter is Dave Sjoding, WSU Extension Energy Program per the direction of the Beyond Waste IWG. A fiscal note from the Department of Revenue will also be needed.
- Brief description of potential barriers to implementation, and how the action has been designed to overcome them: The three barriers identified above are reduced as follows: 1) The low price for power barrier is eliminated in the legislation by providing a renewable energy credit (cost recovery) similar to solar electric/photovoltaic systems established in current law; 2) The checker board nature of Washington’s utilities, with some needing the renewable power and wanting wheeling to occur and others unwilling to wheel the power to the other in-state utilities that need it, is resolved by requiring wheeling to occur for a modest fee; and 3) A major capital cost reduction strategy has been underway by WSU for over 4 years and \$5 million in research and development. A totally redesigned anaerobic digestion system which increases speed of digestion (reduces the major cost of cement), scrubs the biogas to reduce high wear and tear to the power generation systems and adds a number of new revenue streams. The new revenue streams include: 1) extraction of excess nitrogen and phosphorous for fertilizer, 2) upgrading the digested fiber as a peat moss substitute (peat moss is mined out of Canada); 3) development of co-digestion systems for food wastes/food processing wastes; 4) documentation of greenhouse gases for sale. The WSU comprehensive digester system is now emerging from research and development and moving toward full commercialization.

Supporting Information:

- **GHG reduction potential of the action, and underlying assumptions:** Quantifying all the greenhouse gas reductions and offsets is difficult. The WARM model is inadequate. Therefore, other methods are used. A partial calculation yields .74 MMTCO₂E.
 - For dairies lagoon methane reduction pathway assume: 125 larger dairies with a total of 162,080 milk cows and 28,986 heifers (WSDA data for 2006). For milk cows assume 5.49 metric tons of CO₂E/milk cow/year and for heifers assume 1.92 metric tons of CO₂E/heifer/year (source is Chicago Climate Exchange/Environmental Credit Corporation). 952,807.32 metric tons of CO₂E/year. However, not all manure will make it from the cow

to the digest, therefore a very caution 65% assumption is used yielding a methane reduction of 619,324.76 metric tons/year from 125 dairy digester lagoon shut downs;

- For power reduction offsets assume 2 kWh/cow/day (low end of factsheet from Northwest CHP Application Center) yields 324,160 kWh/day or 118,318.4 MWh per year offsetting baseload coal. 1 MWh of coal production produces with current technology (no carbon sequestration) produces approximately 1 metric ton of CO₂E. Therefore, roughly 118,318.4 metric tons are of CO₂E are offset;
 - Embedded greenhouse gas reductions from nitrogen and phosphorous fertilizer offsets – Not calculated;
 - Embedded greenhouse gas reductions per ton of peat moss – Not calculated; and
 - Reduction in nitrous oxide releases from the soil due to elimination of nitrogen overloading – Not calculated.
- **Costs or cost savings (net present value, cost-effectiveness) of the action:** The economics of anaerobic digestion are in a state of major change with strong cross currents. Capital cost increases have included the price of cement for the digester, the price of the power generation engines, and other system components. Interconnection costs can vary widely and permitting with related costs for co-digestion are part of a major review by the Departments of Ecology (solid waste and water quality), Agriculture, Community, Trade & Economic Development, WSU and the dairy industry. Counter balancing cost increases are capital cost decreases through the system redesign by WSU and development on new revenue streams. Current analysis shows that co-digestion flips system economics from negative to positive (more biogas is produced and tipping fees are charged). Anaerobic digestion is viewed as complementary to compost systems rather than competitive.
 - **Distribution of costs and benefits:** The costs and revenue streams are principally borne and received by the project developer/owner. Ten year bank loans are common. Utilities receive baseload renewable power to comply with I-937 or green power needs. The nursery industry receives an ability to buy an alternative that is equal to or superior to peat moss.
 - **Qualitative description of additional external benefits (e.g. green jobs creation), including ability to create synergistic benefits:** Additional external benefits beyond the green power benefit include 1) Preservation of local/in-state family dairies by improved economics, 2) Odor reduction, 3) Development of in-state green jobs (Andgar is an example), 4) Elimination of nutrient ground water overloading through nutrient extraction (helps resolve co-digestion concerns), 5) Development of an alternative to mined peat moss, and 6) Digested material can be added to compost to improve the health of soils.
 - **Implications/ engagement opportunities for individual action/behavior change (e.g. behavior change needed to achieve implementation and/or achieved through implementation):** The dairy feedlot industry has been very cautious to adopt anaerobic digestion due to a nationally prominent example of a dairy in Prairie, MN relationship to a local utility. Utility power purchase agreements that are for the length of the dairies bank loan resolve the MN issue. Extension and outreach to dairies, feedlots, wastewater treatment facilities and compost facilities will need to be done with workshops, factsheets, tours of existing digesters, and one-on-one discussions.
 - **Implications/engagement opportunities for local and regional governments and private sector:** Permitting of proposed systems will move through the permit processes (see discussion above). The private sector dairies, feedlots, waste water treatment facilities, compost facilities and Washington based project developers that take advantage of the opportunity will benefit.

Stakeholder information:

There are at least six pieces of related or neighboring legislation. One (second on the list) is very closely related to the organics legislation. The Beyond Waste Organics electricity legislation would fit as an insert into the broader bill. Coordination with the proponents (not Climate Action Team associated) is underway. The other proposed pieces of legislation are:

- 1) Changing the net metering law from 100 kW to a proposed 500 kW;
- 2) Renewable Rate Recovery and Control Act – This bill sets a floor and a ceiling on the prices paid for different renewable electricity sources, requires the utilities to accept the electricity at those established rates and allows the utilities to rate base the power. The Beyond Waste Organics electricity legislation would fit as an insert with those rates;
- 3) Clean Heat and Power (CHP) legislation – Part of the Energy Efficiency – Green Buildings Climate Action Team process;
- 4) Bioenergy Tax Credits extension to 2015 – Community, Trade and Economic Development request legislation;
- 5) Clean Power Equipment Tax Incentive – A different tax extension; and
- 6) Expedited permitting of renewable energy systems.

Likely supporters of the legislation are some utilities (drafters of bill #2 above), Puget Sound Energy (hunting for renewable power projects and requesting other utilities to wheel renewable power to them) and the Washington Dairy Federation.

Legislative Proposal Overview

Green electricity – Bio-power/anaerobic digestion legislation For insert into the Renewable Rate Recovery and Control Act

Introduction – The Renewable Rate Recovery and Control Act is being developed outside the CAT process by a number of utilities with the Northwest Solar Center are leading this other effort. Per discussion at the Beyond Waste IWG of 8/26/08, this draft legislative language is being designed to fit within the larger legislative effort. Additional language adjustments may be necessary to ensure a better fit. The broader language is intended to serve as both a cap and a floor on renewable energy prices from various renewable energy sources. Prices vary by source. This will avoid Finance Committee issues. Utilities will be required to buy the power as the established rates. They will also be enabled to recover the cost of the renewable energy in their rate base. This draft is developed with a verbal understanding of the larger bill. Note: The bio-power wheeling section of the bill may not be necessary depending on the drafting of the requirement of the utilities to purchase the renewable electricity.

New section. Definitions

“Anaerobic digester” means a facility that processes manure from livestock and/or other organic material into biogas based electricity and digested organic material using microorganisms in a decomposition process within a closed, oxygen-free container.

“Landfill gas system” means a facility that uses landfill gas to produce electricity.

“Organic waste clean heat and power system” means a facility that produces both electricity and used and useful heat for a combined energy efficiency of at least 65 percent. The feedstock can be any combination of wood waste, hog fuel, urban wood waste, logging slash and other organic material.

New section insert. Renewable rate recovery and control

The following rates are established for renewable power production and control

Anaerobic digester renewable electricity rate is set at twelve cents per kilowatt hour produced

Landfill gas system renewable electricity rate is set at eight cents per kilowatt hour produced.

Organic waste clean heat and power system renewable electricity rate is set at nine cents per kilowatt hour produced.

The environmental attributes of the renewable electricity system belong to the system owner, and do not transfer to the state or the light and power business upon receipt of renewable electricity rate payments.

New section: Wheeling of bio-power

If a utility does not wish to purchase the renewable electricity produced from anaerobic digesters, landfill gas systems, and wood waste clean heat and power systems, and if it has met the requirements of Initiative 937 including all future requirements established in statute, then it will make the available the electricity produced to other in-state utilities for a modest transmission fee not to exceed its normal transmission rate or 5 percent of the value of the power produced whichever is lower.

Title: *1C 2. Diversion of putrescible organics from the MSW stream for creation of green energy and organic soil amendments*

2009 Action Description:

Subsidize use of compost/organic amendments on agricultural lands by providing a per ton subsidy to farmers Statewide using the existing State Conservation District infrastructure. The subsidy would be available annually for a fixed time period. The subsidy would cover use of compost/organics at agronomic loading rates with a fixed amount of funding available per county. The rate of funding available per county would be determined based on farm acreage.

The State Conservation Districts work in close partnership with the USDA National Resource Conservation Service Environmental Quality Incentives Program (<http://www.nrcs.usda.gov/PROGRAMS/EQIP/>). The EQIP program currently subsidizes adoption of environmentally friendly farming practices- largely through paying a portion of capital cost for equipment. Use of compost is in the EQIP list of priorities. Funds would be provided to the Conservation Districts for distribution through the EQIP program for the specific purpose of subsidizing compost/organics purchases by farmers.

Basis for Selection:

- Diversion of putrescible organics (examples include yard waste, food waste, and other high moisture content wastes) from the MSW stream offers the potential to generate GHG credits through methane avoidance. In addition, these materials have value for green energy re anaerobic digestion and as soil amendments. Anaerobic digestion and land application of digestates post energy extraction are complimentary processes. Use of organic soil amendments can generate GHG credits by substituting for synthetic fertilizers, reducing irrigation requirements by increasing soil water holding capacity and increasing total soil carbon. This ‘grave to soil’ approach offers the potential to generate GHG credits in three ways:
 - Methane avoidance through landfill diversion
 - Green energy through anaerobic digestion
 - Ag credits through use of organic soil amendments
- It is a low cost option with technology and limited capacity for anaerobic digestion in hand and with pre-existing infrastructure and facilities for composting residuals (in lieu of digestion or post digestion)

Implementation Approach and Mechanisms:

• **Budget request:**

Funding for statewide subsidy for agricultural use of compost/organics on farmlands, financial support for this would be derived from a increase in the solid waste tax or State and Local Toxics, Centennial Clean Water Fund, Carbon credits, Tipping fees or Renewable energy credits

- Example for Yakima, Kittitas, Chelan/Douglas, Spokane and Grant Counties
 - Each of these counties has a permitted operating or soon to be operating compost facility. There is high value agriculture in many of these counties including high tree fruit

production. Providing subsidies for farm purchase of compost up to 25,000 dry tons per county to be used at an agronomic loading rate of 5 dry tons per acre at a subsidy rate of \$8 per dry ton. Total cost for 5 counties would be \$1.5 million. Total acreage covered would be 5,000 acres per county. Total feedstocks used to produce compost per county would be approximately 75,000 dry tons.

- **Specific deliverable-** define statewide subsidy level/ integrate into State Conservation District funding
- **Requires identification of a revenue source to fund**

Supporting Information:

- Methane avoidance of approximately 1 ton CO₂ per wet ton of organics
- Additional benefits-
 - Agriculture- synthetic fertilizer avoidance, carbon sequestration total GHG savings approximately 2 tons CO₂equivalent per acre
 - Energy- 1 dry ton of food waste will produce 0.26 tons of CH₄
- Cost per ton of CO₂ saved is very low- added benefits of increased soil tilth and productivity
- Benefits to be seen by agricultural sector across the State-
 - improved soil productivity
 - improved water quality
 - improved crop yields and quality
- Creation of jobs re anaerobic digestion, compost production will be distributed between public and private sectors

Title: 1C 3. Compost product procurement by the Department of Transportation

Issue an Executive order to modify the 1991 RCW 43.19A to allow for use and purchase of organics that comply with WA DOE regulations for land application.

Summary

This action will increase the markets for recovered organic wastes throughout the State and increase the variety and volumes available of composted organic materials to Department of Transportation, as well as influence local and county purchasing specifications.

Highlights

Emphasize, update and increase the procurement goals for recycled content materials by all state and local agencies as provided in the 1991 law RCW 43.19A to specifically allow for the purchase of organic waste materials that meet WA DOE requirements for land application. The state is one of the biggest single purchasers of composted products, and the specifications for WSDOT for Compost, Topsoil and Mulch products influence counties and cities purchasing actions and specifications state wide.

The Executive Order would ask WSDOT and the GA to modify the specification requirements for purchasing of composted materials, mulches, erosion control products, fertilizers and manufactured topsoil so that they are not limited to a certain feedstock or percentage of “composted plant materials” as they are now. Modify the established specification requirements by WSDOT for purchasing of composted materials so that they are not limited to a certain percentage of composted plant materials. This will allow a wider variety of composted products to be sourced locally to development projects,. The current language used in WSDOT specifications for erosion control and roadside planting was intended to meet the 1991 goals as codified under RCW 43.19A, of increasing the use of composted yard debris. The markets for composted yard debris is well established in regions that produce these products, however areas outside of these production centers show little use of composted organic wastes due to transportation costs. It is important to note that Federal procurement laws have already been changed to accomplish this task and became effective September 14th, 2008. This proposed Executive Order would allow state transportation projects that receive federal funding to be in compliance with current federal purchasing rules for these materials.

The primary goal is to provide a change in all state recycled product procurement lists and sources to be inclusive of the other recycled organic waste feedstocks that are being extracted from the waste stream, processed by facilities that meet their applicable waste management regulations and are prepared to meet the physical standards set by the agency for mulch, erosion control, compost applications, fertilizers and manufactured topsoils.

The secondary goal is to have state agencies purchase designated items with the highest percentage of recovered materials practicable to expand our markets for recovered organic materials as their collection expands from 50% to 90% of the total available organics in the waste stream.

Implementation Dates

The Executive order can be made in early 2009 with a targeted date for compliance/implementation by late 2009

Mechanism

Executive order generated by the Governor to have WSDOT, GA, Ports, Colleges and all other state purchasing departments that develop the land or install or maintain landscapes for state properties, to purchase designated items with the highest percentage of recoverable materials content practicable, by using the following mechanisms to assure preferential purchasing of compost or fertilizers made from recovered organic materials.

1. Revise state procurement specifications to comply with the September 14, 2007 Federal Register Notice of the EPA Comprehensive Procurement Guidelines V (CPG V) to change the description of “compost” by consolidating all compost designations (yard debris, food waste, biosolids, manure) under one item designation: “compost made from recovered organic materials”
2. Add a designated recoverable material landscaping item of “fertilizer made from recovered materials”
3. Adopt the current companion guidance of the product specifications in the Recovered Materials Advisory Notice V (RMAN V) see the following web link for more information
4. Develop and make available a list of recovered organic materials product manufacturers and update it annually.

Synergy with Other Proposals

This action could be combined with updating of overall procurement guidelines of recycled products for state and local agencies, as well as improve the information data base of available recycled products.

Resources: <http://www.epa.gov/fedrgstr/EPA-WASTE/2007/September/Day-14/f18150.pdf>
<http://www.epa.gov/epawaste/conserves/tools/cpg/rman5.htm>
<http://www.epa.gov/fedrgstr/EPA-WASTE/2007/September/Day-14/f18149.pdf>
<http://www.epa.gov/epawaste/conserves/tools/cpg/products/compost.htm>
http://www.ga.wa.gov/PCA/Forms/Washington-Purchasing-Manual.doc#_Toc162333231
<http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm>

Title 1C4

In conjunction with any or all of the Organics proposals, it is recommended that the State champion existing mechanisms and programs for landfill diversion of putrescible organics.

Even without the adoption of the tax-related recommendations, the emergence of cap-and-trade markets provides an existing financial incentive for organics diversion from landfills. The State is encouraged to maintain and strengthen these market-based mechanisms as additional policies are developed and to provide guidance to private and public entities as to how to take advantage of these incentives. This guidance could take the form of support staff to work with public and private entities to provide necessary documentation to officially register projects or entities on currently trading carbon markets. It could also take the form of web-based guidance and educational materials for those seeking more information on these existing markets. This could also serve to showcase individual projects. It is possible that the individuals that have participated in these projects could cooperate with State agencies to offer guidance to other interested parties.

Participation in currently operating carbon markets does not preclude participation in the Western Climate Initiative. It also offers the opportunity to quantify carbon balances and receive credits for carbon offset projects using existing protocols while the WCI protocols are being formulated.

The Chicago Climate Exchange is the only established carbon market in the US where carbon credits are currently bought and sold. It is open for membership to a wide range of public and private entities. Washington State is currently represented on the Exchange by a number of projects and municipalities. For example, King County became a member of the Exchange in 2006. The VanderHaak Dairy, Lynden, WA, registered its anaerobic digestion facility on the Exchange as a carbon offset project and receives annual payments for reducing methane emissions from its farm.

There are currently several protocols either in place or under development at the Exchange that are relevant to the organic component of the waste stream. A protocol is near completion for credits for methane avoidance for diversion of putrescible waste (food scraps, municipal biosolids, and yard trimmings) from landfills to compost facilities. Credits under this protocol derive from the methane release that is avoided by having these wastes decompose aerobically. There is also an existing protocol for anaerobic digestion of manures. The protocol can credit both methane avoidance for methane capture as well as green energy produced through controlled anaerobic digestion.

Several examples are detailed below to illustrate how these protocols could be used to generate revenue to support organics diversion projects. In each case, the diversion process results in the production of a material that has value as a soil amendment. Land application of these materials, either directly or after composting, could be encouraged and potentially subsidized through revenues gained from trading carbon credits.

Food scrap composting

Several municipalities within the State including King (<http://www.metrokc.gov/dnrp/swd/garbage-recycling/recycle-food.asp>), Whatcom (http://www.ssc-inc.com/recycling_multifamily.php#foodplus) and Thurston counties (http://www.co.thurston.wa.us/wwm/Recycling_and_Disposal/Recycle/Composting/Compost_home.htm) have begun programs that offer joint collection of food scraps with yard trimmings. The mixed organics are then composted. Similar programs exist in Alameda County, CA and in Europe (<http://www.stopwaste.org/home/index.asp>). Including food scraps in compost increases the nutrient value of the final product. In WA state, food scrap composting operations are required to meet certain criteria for pathogen reduction (<http://www.ecy.wa.gov/programs/swfa/compost/>). On line resources already exist that showcase composting operations that comply with State regulations (www.lrlandfill.com)

Each of these programs are potentially eligible for carbon credits. These credits are only available through the Chicago Climate Exchange if food scrap recycling is encouraged by municipalities. They are not eligible if food scraps are banned from the MSW stream. Tip fees at compost facilities are likely to be comparable to tip fees at landfills. If yard waste collection programs are currently in place, adding food scraps to the existing programs may not result in additional collection requirements. However, it is essential that the compost facility comply with Department of Ecology regulations for pathogen destruction. No compost programs are currently listed on the Chicago Exchange. However, negotiations are ongoing to list programs for carbon credits. Each of these programs can be used as a model for other municipalities that are considering landfill diversion of food scraps. Carbon credits for these programs can help to defray additional costs and may also provide revenue to subsidize compost use within participating municipalities.

Anaerobic digestion- on farm

Anaerobic digestion of animal manure is currently a recognized and functioning protocol on the Chicago Climate Exchange. Credits are provided both for methane avoidance as well as energy production. On farm anaerobic digestion operations that are currently listed on the Chicago Climate Exchange include the Vander Haak Dairy, in Lynden (http://www.envcc.com/index.php?option=com_content&task=view&id=20&Itemid=38). Projects are also underway or in development in the state. See for example : http://www.quilcedapower.com/Biomass_Final_Report.pdf. Revenue from carbon credits is important for the economic viability of these projects.

These projects qualify for credits under existing protocols on the Chicago Climate Exchange (<http://www.chicagoclimatex.com/content.jsf?id=103>).

The methane generation potential of manures is generally significantly lower than that of food scraps and other food processing wastes. This is due to the fact that manures have already been through a digestion process within the animal and so have lost a significant portion of their energy. Alternate waste streams can be accepted into these digesters to provide both revenue from tip fees as well as additional gas production. It is likely that controlled anaerobic digestion of alternate feedstocks would also qualify for credits under the methane avoidance from composting protocol.

Examples of additional feedstocks that are currently being accepted into operating on farm digesters include cheese processing wastes and food scraps. In each case, these feedstocks provide revenue both from tip fees as well as high methane generation potential

Anaerobic digestion- Wastewater Treatment Facilities

Municipal wastewater treatment facilities (WWTP) often use anaerobic digestion to reduce volume of wastewater solids, as well as to meet regulatory requirements for pathogen reduction and vector attraction reduction. Municipalities can flare gas or capture gas for energy recovery. In many cases, these digesters have excess capacity. Using this excess capacity for digestion of targeted organics also has the potential to qualify for GHG credits through the Chicago Exchange. It can also provide additional revenues to WWTPs through tip fees for accepting these wastes and added energy production from increased gas production. Examples of feedstocks that are suitable for digestion include fats oils and grease, food scraps and animal processing wastes. A limited number of wastewater treatment facilities outside of WA state are currently accepting alternate feedstocks including grease, chicken blood and commercial food scraps (<http://www.epa.gov/region09/waste//organics/ad/index.html>; <http://www.environmentalleader.com/2006/11/20/city-of-millbrae-powers-wastewater-treatment-plant-on-kitchen-grease/>). Both King County and the City of Tacoma have or are currently conducting research on co-digestion of alternate feedstocks with standard wastewater solids. Initial results from other municipalities have shown an increase in gas production and volatile solids reduction when alternate feedstocks are introduced into digesters.

Accepting residuals that are covered under the CCX protocol on methane avoidance through landfill diversion of putrescibles suggests that this practice would be eligible for carbon credits through the Exchange. These credits would provide revenue in addition to revenue generated from tip fees and increased energy production.

Title: 2 A. Industry Collaboration - Retail

2009 Action Description - Governor Action:

Collaborate with retailers to achieve consumer waste reduction

At least 50% of household wastes come through retailers. Retailers could be asked to help the state meet an overall 15% reduction goal, as described in AW-3. This would take the form of a memorandum of agreement with retailers and the governor to achieve greenhouse gas reduction goals through packaging and product reduction strategies. Two specific area for waste reduction are packaging and food waste.

Packaging reduction:

An example a collaboration with retailers is the “Glassrite Bottle Initiative” in the United Kingdom. Retailers worked with wine producers to lightweight wine bottles. For products that were imported, bulk wine was shipped and bottled in the UK.

The result was reduced materials and energy use, equating to 788,229 metric tons of CO2 equivalent reduction per year.

Pursuing a strategy like this could expand to other products and packages as well as pallet and other shipping materials reduction strategies. It could also include working with retailers to donate returned products to reuse organizations instead of disposing of them, and other waste reduction and education measures. Also, Washington could work with California and Oregon on regional efforts.

Food Waste Reduction:

Nearly one-third of the food that is purchased is thrown away. Food waste is a major factor in methane generation in landfills and a major portion of household budgets. “Love Food, Hate Waste” is a food waste reduction strategy developed in the United Kingdom. While it focuses information to consumers about food waste reduction strategies, it also engages retailers and producers in developing packaging for longer safe food storage and information about how to store food properly.

Up to 400,000 MTCO₂E could be eliminated if we reduced our in-state generated food wastes by half.

Basis for Selection:

- Consumer products and food account for nearly half of the total global greenhouse gas generation from the United State (EPA).
- Retailers have direct contact with consumers and can provide not only products, but information as well.
- Retailers have enormous influence on the products and packaging offered to consumers. Their control in the product supply chain can have significant impacts on greenhouse gas generation – increases and decreases.

Implementation Approach and Mechanisms

A memorandum of agreement would be written between the governor and major retailers and retail associations in the state of Washington.

Supporting Information:

- **Costs or cost savings:** Costs to state government would be minimal. It would primarily be staff time to negotiate and write the memorandum of understanding and would with the retail industry to track results. Implementation costs would be borne by retails, voluntarily.

- **External benefits:** A non-regulatory partnership with one of the state’s major industry groups to reduce greenhouse gases. This has not been vetted with the retail industry.
- **Engagement opportunities for individual action/behavior change:** This proposal targets individual behavior. Retailers would work to provide consumers low carbon footprint products and information on safe storage of food. The provision of products and information alone will not be effective without consumer participation.
- **Economic Implications:** Reduction in food waste should benefit consumers saving them money. Other economic implications are unknown.
- **Engagement opportunities for local and regional governments and private sector:** This could provide an opportunity for local governments to partner with retailers within their jurisdiction.

Title: 2 B. *Environmentally Responsible Purchasing*

2009 Action Description– *Executive Order:*

Establish, through a Governor's Executive Order, an intergovernmental work group to evaluate the need for and recommend if necessary revisions to state purchasing laws, regulations and practices to ensure that products and services used by government have the lowest possible environmental and carbon footprint.

There are existing efforts related to environmentally responsible/preferable purchasing (ERP). There are at least three state statutes, four executive orders and a variety of agency level policies. The degree of effectiveness of these various mandates is unclear. Also unclear is what barriers exist in other statutes and regulations that prevent effective environmental purchasing practices.

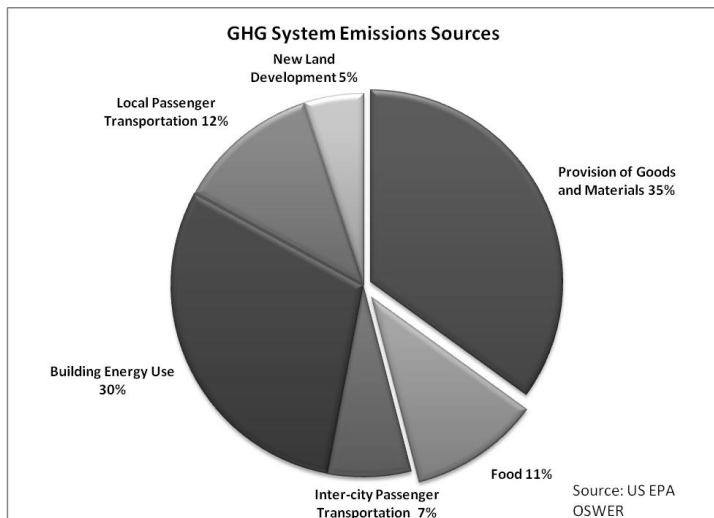
For the workgroup to be effective, the responsible state agencies will report the implementation status of existing state statutes, executive orders and agency level policies and barriers to full and effective implementation by March 1, 2009.

This action is about identifying barriers to environmentally responsible purchasing within current legislation and regulations and creating the legislated authorizing environment within which ERP can be achieved.

While the focus of the proposal is to reduce the carbon footprint of governmental purchasing, it is anticipated that proposed legislation will require that all purchases made with Washington state funds meet environmental performance characteristics, such as lowest possible GHG emissions and no toxicity. Currently, state purchasing contracts are awarded on price, availability and physical performance. This measure will add a fourth criterion, environmental performance, to the list.

Basis for Selection:

A soon to be released EPA study demonstrates that at least 46% of the United State greenhouse gases are attributable to the provision of good and materials and food.



The opportunity to leverage a significant portion of the state's buying power to achieve noticeable GHG reductions by the state as a consumer, and to influence other consumers, was the rationale for selecting this action. Although this proposal will not be ready to implement in the 2009 legislative session, it is an important action to take as soon as possible, likely the 2010 legislative session.

Environmentally preferred purchasing as a concept has been around since the 1980's. Initially, recycled content paper products were targeted. In the early 1990's procurement of other recycled content products were added to the

RCW. Eliminating the use of products that contain persistent, bio-accumulative and toxic substances was the focus of an executive order under Governor Locke, as was increasing the practice of environmentally preferred purchasing under his administration.

Those directives remain in place, but their effectiveness is unknown.

According to the Director of the Department of General Administration, Washington state government (including members of the Washington State Purchasing Cooperative) spends billions of dollars each year buying products and services through a “maze of purchasing authorizations.” It appears that a very small amount of this total is intentionally directed to goods and services that reduce GHG emissions or that incorporate other environmentally responsible attributes. Many products with smaller climate impacts are available now.

Implementation Approach and Mechanisms:

This action should be implemented through an executive order. The first item in the executive order should be to require an assessment of the progress and barriers related to environmental purchasing practices as reported by state agencies. This should be done by March 1, 2009 in order to provide the workgroup, described below, basic background information about ERP practices within government.

The second item in the E. O. should be to require the Washington Departments of Ecology and General Administration to convene and facilitate a work group to develop an ERP program by June 2009, which will include an integrated set of revisions to the myriad laws and regulations that govern state purchasing and may also include additional elements. The working group should include representatives from:

- State government
- County government
- City government
- Special service districts
- Other members of the Washington State Purchasing Cooperative
- Colleges and universities
- K-12
- Vendors
- Department of Printing
- Department of Information Services

Proposed legislation will require that all purchases made with Washington state funds meet environmental performance characteristics, such as lowest possible GHG emissions and lowest possible toxicity. Currently, GA purchasing contracts are awarded on price, availability and physical performance. This measure will add a fourth criterion, environmental performance, to the list.

Additional actions that should be included in the Executive Order are:

- Adoption of the EPEAT standards for all computers purchased by government
- Adoption of a policy to require the use of 100% recycled content, process chlorine free office paper
- Establishment of standards for motor vehicles used by government related to environmental performance.

Supporting Information:

- **Costs or cost savings:** Actual costs of desired products and services may or may not be higher than more traditional products have been. However, when product comparisons include life cycle costs throughout the supply chain along with environmental costs, it is likely that products meeting environmental performance standards will be price competitive.
- **External benefits:** Potential for more green collar jobs and green businesses within Washington.

- **Engagement opportunities for individual action/behavior change:** This proposal focuses on changing the way government goes about its business in acquiring goods and services. When implemented, it will affect all suppliers and vendors and their customers.
- **Economic Implications:** This proposal will put the \$8 billion buying power of the state to work to reduce GHG generation. Approximately 7% -10% of the state's spending is purchased through approximately 300 GA contracts. The proposed purchasing requirements and processes that result from this effort should also apply to the other 90% of purchases that are made outside the state contracts, whether through delegation authority from GA, or through other sources, including the Dept of Information Services, the Department of Printing, Department of Transportation, Department of Social and Health Services, Department of Health and possibly others.
- **Engagement opportunities for local and regional governments and private sector:** Local government will be affected by the statutory changes as well. Embedding environmentally responsible purchasing in state law will influence local governments by providing them the tools and authorities needed to integrate ERP into their own purchasing practices. Both from amendments to their purchasing authorities and by their customer relationship to the Department of General Administration.

2010 Action Descriptions

3 A. Establish strong government environmental procurement and responsible purchasing practices in statute

See 2 B. above. The anticipated outcomes of 2 B. include legislative recommendations. This is a placeholder for the 2010 session.

3 B. Establish a research and educational institute to address sustainable product design and manufacturing.

The Beyond Waste IWG identified this an very important next step but did not have the time to develop a specific proposal. Others outside the CAT process may develop similar proposals and the Beyond Waste IWG advises that such proposals be supported. Also, Beyond Waste IWG suggests that related proposals to establish research, educational and/or training institutes related to toxics reduction, clean energy, or environmental technologies should be expanded in scope to include sustainable product design and manufacturing.

Title: 4. *Stimulating Recycled Materials Use*

Strong markets for recycled materials use are one of the keystones to a successful closed-loop economy. The IWG recognizes the need to assure market availability. The IWG also believes that it is important to take the time to determine the strategic policies necessary to achieve the closed-loop economy.

Below are many of the ideas that the IWG explored. We recommend that work continue on these ideas, and others, in order to put the strongest market development strategy forward. This will take time. Therefore we ask the CAT to endorse the need to further develop and refine this action area.

Expand, recruit or develop in-state businesses that use recyclable materials in their manufacturing processes

Ideas considered

- B&O tax break for manufacturers who use recycled goods.
- If there is a cap and trade system, provide a credit for businesses already achieving a world-class standard for efficiency or who get to a world-class standard as an incentive to achieve these efficiencies
- Streamlined and consistent regulations to facilitate permitting facilities and processes
- Provide information and technical assistance to highlight that many of the best strategies for GHG emissions reductions benefits also have other benefits, e.g., lean manufacturing

Recommendations

1. A B&O tax incentive for manufacturers that use recycled materials in the mfg process paper, metals, glass, plastics, urban wood, and yard waste (similar to proposed House Bill 1950).
2. Work with Washington Manufacturing Services (WMS) to identify existing services that can assist businesses looking to reduce GHG emission impacts, and also to identify additional services that could be offered, in conjunction with a CTED business recruitment focus on businesses using recycled materials.
3. Create an Industrial Design Center for Sustainable Products, in conjunction with Western Washington University Industrial Design Program and Huxley College, for example, to invest state and private resources in designing products that are designed for the environment (e.g. carbon neutral, recyclable, etc.). The center would be a public/private partnership with industry users.
4. Send message to the CAT:
If there is a carbon cap and trade system, then provide a credit for businesses already achieving a world-class standard for efficiency or who get to a world-class standard as an incentive to achieve these efficiencies.

Determine actions to expand byproduct synergy, zero waste business practices, design for the environment and other emerging commercial activities and encourage consumer demand for these activities.

Ideas considered:

Create compelling reasons for businesses to create Zero Waste Plans and Goals.

- Identify a combination of financial incentives, price signals, regulatory policies, product bans, and/or disposal bans will accomplish this goal.
 - Address basic incentives.
 - Create state-wide contest/price for best new zero waste achievements by businesses.
- Create a Beyond Waste or Zero Waste Business Circle.
- Create incentives to encourage three types of activity:
 - Businesses to achieve zero-waste themselves.
 - Manufacturers to produce zero waste products / carbon neutral products; and for
 - Companies that use other companies waste in their manufacturing
- Provide assistance to help companies specifically with waste
 - Help companies meet carbon emission goals.
 - Develop and executing WRR plans.
- Information exchange
 - Create a reporting and information-sharing platform. A lot of information is out there to be shared.

Appendix X:

Overview of Beyond Waste Implementation Work Group Recommendations Related to 2007 Climate Advisory Team and Technical Work Group Recommendations

The purpose of this document is to review the status of and provide additional recommendations for actions found in AW-3; explain how BW-IWG recommendations relate to and assist in implementing additional strategies, and establish the context within the work of the 2007 Climate Advisory Team and its recommendations.

On February 1, 2008, the 2007 Climate Advisory Team provided its recommendations to the Governor in its report titled *Leading the Way: A Comprehensive Approach to Reducing Greenhouse Gases in Washington State*.

http://www.ecy.wa.gov/climatechange/CATdocs/020708_InterimCATreport_final.pdf

The CAT's recommendations were presented through twelve "powerful directional recommendations." The directional recommendation that includes the work undertaken by the Beyond Waste Implementation is *Recommendation 11: Reduce waste and Washington's emissions of GHGs through improved product choices and resource stewardship*.

The 2008 Beyond Waste Implementation Work Group scope of work specifically addressed certain implementation elements outlined in the adopted strategy identified as AW-3: *Significant Expansion of Source Reduction, Reuse, Recycling, and Composting*. However, the proposals resulting from the BW IWG's work also relate to and help implement other strategies included in Recommendation 11. These include RCI-8 and RCI- 10. In addition, some of our recommendations could assist in addressing a strategy developed by the RCI TWG identified as *RCI – 11: Policies and/or Programs Specifically Targeting Non-energy GHG Emissions*.

AW-3 identified ten actions to achieve the overall strategy. The BW IWG did not include in its scope of work or did not have time to address in detail all ten actions. All ten actions are included in this document with a status comment and brief next step recommendations where appropriate. Those actions that have been worked on more extensively with detailed recommendations.

Below is the text related to Recommendation 11 in the CAT's February 1, 2008 report. The full report can be viewed at http://www.ecy.wa.gov/climatechange/CATdocs/020708_InterimCATreport_final.pdf

Recommendation 11: Reduce waste and Washington's emissions of GHGs through product choices and resource stewardship

Greatly expanding source reduction, reuse, and composting will result in a low cost/ton for reductions and many co-benefits. The CAT supports **Significant Expansion of Source Reduction, Reuse, Recycling, and Composting (AW-3)** because most communities and many businesses in Washington now have strong recycling that can be enhanced, there is a low cost/ton for resulting GHG reductions and the many co- and this also represents significant opportunity the public in combating global warming at the

The 'most promising' strategies under this recommendation are:

→ Significant Expansion of Source Reduction, Reuse, Recycling and Composting (AW-3)	improved recycling GHG strongly
→ In-State Production of Biofuels and Biofuels Feedstocks (AW-2)	
→ Consumer Education Programs, Including Labeling of Embodied Life-cycle Energy and Carbon Content of Products and Buildings (RCI-8)	
→ More Stringent Appliance/Equipment/ Lighting Efficiency Standards, and Appliance and Lighting Product Recycling and Design (RCI-10)	programs the benefits, to engage household
→ Expanded Use of Wood Products for Building Materials (F-5)	

and local business levels.¹ This strategy sets targets to reduce the total amount of household and business waste by 15%, recycle at least 50% of the waste remaining, and compost over 90% of compostable organics through expanded source reduction, reuse, recycling, and composting of household, business, industrial, agricultural, and construction-related waste streams. In addition to traditional recycling programs, this strategy encourages ‘cradle-to-cradle’ design and manufacturing, and proposes to take advantage of market and business-based activities.²

In order to provide consumers with a better understanding of the impacts of their choices and empower them to make better choices, enhanced public education and outreach to support the long-term success of Washington’s mitigation actions should be provided through **Consumer Education Programs, Including Labeling of Embodied Life-Cycle Energy and Carbon Content of Products and Buildings (RCI-8)**. Education and certification programs for professionals involved in delivering services in support of RCI and other policy strategies considered by the CAT should also be developed and implemented. ‘Carbon labeling’ of products and buildings should be considered and evaluated for potential effectiveness and how this might be done in a consistent and verifiable manner, possibly on a regional or federal level.

Another way to support improved product choices is **More Stringent Appliance/Equipment/Lighting Efficiency Standards, and Appliance and Lighting Product Recycling and Design (RCI-10)**, which increases energy efficiency through strengthened standards for new lighting, equipment, appliances and consumer electronic products and encourages product recycling and reuse, thus avoiding the generation of solid waste and the production and emissions of toxic materials. Reduction of GHG emissions through improved product choices is also supported by the **Expanded Use of Wood Products for Building Materials (F-5)**, which promotes substitution of wood products in place of other energy intensive materials (e.g., steel and concrete) to store carbon and avoid production emissions. Increased utilization of waste is accomplished through **In-State Production of Biofuels and Biofuels Feedstocks (AW-2)**, which targets waste biomass for biofuels.

AW-3: Significant Expansion of Source Reduction, Reuse, Recycling, and Composting

AW-3 identified ten actions to achieve the overall strategy of significant expansion of source reduction, reuse, recycling, and composting. These ten actions are repeated below with a status update and suggested next steps, where appropriate. The complete text of AW-3 can be found on pages 31-52 at http://www.ecy.wa.gov/climatechange/interimreport/122107_TWG_agr.pdf

1. Local waste audits

- *development of statewide system model*
- *development of statewide funding*
- *implement audit*
- *use results to influence local GHG reduction programs*

Status: Department of Ecology convened an advisory group to assist in developing a methodology for a statewide waste characterization study, including regional waste audits that would be relevant to and utilized by local jurisdictions. An RFP is ready to be released if and when Ecology is granted permission to

¹ This strategy incorporates and builds upon the State’s recently developed Beyond Waste Plan.

² A partial list of the approaches in this strategy includes: source reduction (waste prevention) initiatives; expanding existing and encouraging more reuse, recycling, composting, and processing in businesses; establishing product stewardship programs; using environmentally preferable procurement practices; facilitating safe byproduct “synergy” strategies; achieving a reduction of toxics in packaging and products to make them safer to manufacture, use and recycle while increasing their value and use in the market place; increasing closed-loop recycling and the percentage of recycled-content in products, and expansion of disposal bans. Additional detail on this and all strategies is available in Appendices F–J.

proceed with the contract as an exception to the freeze on personal services contracts or when the freeze is lifted. The is to conduct sampling throughout the state, which will determine waste composition for about 100 categories of disposed materials in 8 waste generation areas. The contract period is about 15 months. Local audits are currently underway or planned in Clark, King, Pierce and Snohomish Counties and City of Seattle.

2. *Evaluate use of a model and index to measure and monitor GHG reductions*

- *the EPA's WARM model was used for policy development*
- *WARM model has some gaps, notably in failing to calculate source reduction potential for yard waste and food waste and it doesn't consider all the materials that are being recycled.*
- *Investigate applicability or tweaks necessary to account for the actual types and location of disposal facilities in Washington State.^[1]*
- *Implement and evaluate use of the Washington State Consumer Environmental Index (CEI). CEI tracks changes over time in the environmental emissions and their impacts caused by the production, use and disposal of items purchased each year by Washington's consumers.*

Status: The EPA WARM model can only calculate emission reductions for a limited number of primary recyclable materials. There are many other materials from the household, business, industrial, agricultural, and construction-related waste streams that have GHG emission implications – and are disposed as well as reduced, reused, recycled and composted/digested – that cannot be addressed through the WARM model at this time. The model does not adequately address all types of organics management options, such as anaerobic digestion. In addition, , several of the underlying assumptions and algorithms in WARM are based on limited or incomplete data. There are problems with addressing other materials due to incompatibility between state definitions and WARM categories.

Examples of such materials include in part: asphalt, composites, construction and demolition debris, electronic products, fluorescent light bulbs, furniture, gypsum, hazardous materials, land clearing debris, manure and other agricultural wastes, multi-material packaging and products, milk cartons/drink boxes, rubber materials, single use and rechargeable batteries, solvents, textiles, tires, used oil, various industrial wastes, vehicle batteries, etc.

EPA continues to expand the materials covered in the WARM model and refine calculations. It also continues to work with experts regarding issues around modeling organics. The limitations of WARM continue to limit the ability to model GHG reductions resulting from many product stewardship and recycling activities, but it is the best available to our knowledge. It is unlikely the State could afford to create a superior model.

The Washington State Consumer Environmental Index (CEI) has been created. One of the indices tracks purchases made in Washington and the related output of greenhouse gases tied to product life cycles. These emissions are generated both in Washington and elsewhere, but are a result of the purchase of goods and services made in Washington. Between 2000 and 2005, there was approximately a 17 percent increase in greenhouse gas emissions, or 18.3 million tons of carbon dioxide equivalent emissions, due to consumer activities in Washington. The CEI provides an opportunity to track the GHG emissions associated with consumption of materials – and, in theory, changes in emissions resulting from waste reduction and changes in the carbon-intensity of goods purchased in Washington. However, refinements to the CEI would likely be needed. Resources to update the CEI have not yet been identified.

- 2. Build on existing source reduction and recycling programs, targeting commodities with the largest GHG reduction potential.*

Status and Recommendation: This area has been addressed by the Beyond Waste IWG.

- 3. Fully implement and update Washington's Beyond Waste Plan. The current 5-year milestones and action items include key initiatives to increase recycling of industrial waste and organic materials, expand green building, reduce toxics and increase the ability to recycle products, and more. The next update and related funding priorities should further incorporate GHG emissions analysis and GHG reduction actions.*

Status and Recommendation: The Beyond Waste update process is scheduled to begin in 2009 with the update completed in 2010. Ecology should incorporate all related work for the 2007 TWGs, 2008 IWGs, and CAT into that update process.

- 4. Fully implement and expand Environmentally Preferable Procurement policies and programs by the State and local governments.*

Status: This area has been addressed by the Beyond Waste IWG. In addition, an internal staff team is working with General Administration to add ERP products to state contracts and working state and local agencies to expand their EPP programs.

- 5. Encourage manufacturers to provide – and consumers to use – end of life management and upstream design solutions that reduce the green house gas and other environmental impacts of product waste. Develop a framework policy for establishing product stewardship programs.*

Status and Recommendation: This area has been addressed by the Beyond Waste IWG.

- 6. Encourage large retailers (e.g. Wal-Mart) to leverage buying power to encourage manufacturers to make the design solutions that reduce GHG and environmental impacts of product waste.*

Status and Recommendation: This area has been addressed by the Beyond Waste IWG.

- 7. Establish a research and educational institute to address sustainable product design and manufacturing.*

Status and Recommendation: The Beyond Waste IWG identified this an very important next step but did not have the time to develop a specific detailed proposal. Others outside the CAT process may develop similar proposals and the Beyond Waste IWG advises that such proposals be supported. Also, Beyond Waste IWG suggests that related proposals to establish research, educational and/or training institutes related to toxics reduction, clean energy, or environmental technologies should be expanded in scope to include sustainable product design and manufacturing.

- 8. Ecology, CTED, Health and other appropriate agencies should coordinate reporting to the appropriate committees of the legislature, on an annual basis, progress made in reaching the goals and recommendations for legislation or other actions by the state.*

Status: This is outside the scope of the Beyond Waste IWG to address.

- 9. Form an on-going technical work group of experts on reduction, reuse, recycling, composting, product stewardship and green business development to advise Ecology, CTED, Health and other appropriate agencies*

on actions needed to implement this action item and attain the policy goals. This could be accomplished by restructuring the Washington Solid Waste Advisory Committee (SWAC), creating a sub-committee of SWAC, or by creating an entirely new group. The technical work group's recommendations will be considered when reporting progress, next steps and recommendations to the legislature.

Status and Recommendation: If the Beyond Waste Implementation Work Group is not continued through the CAT process past 2008, then the additional necessary work should be passed on to ensure on-going policy development and implementation. The State Solid Waste Advisory Committee is an established committee with diverse stakeholder membership. Membership should be reviewed and enhanced to ensure that stakeholder representation includes expertise in upstream waste prevention, business product stewardship, zero waste business practices, and climate implications. If the CAT does not continue the BW IWG under its umbrella, then SWAC should be asked to form a Beyond Waste or Climate Impacts subcommittee to absorb and continue the work of the Beyond Waste Implementation Work Group, including its membership. This would include completing work in 2009 and identifying and advocating significant next steps related to materials management and green house gas emission reductions, including legislation for 2010 and beyond. This possibility was addressed at the September 2008 SWAC meeting and SWAC members confirmed their willingness to serve this role if requested.

RCI-8 Consumer Education Programs, Including Labeling of Embodied Life-Cycle Energy and Carbon Content of Products and Buildings

RCI-8 contains a number of recommendations related to the work of the Beyond Waste IWG. For the complete text see pages 55-62 at http://www.ecy.wa.gov/climatechange/interimreport/122107_TWG_rci.pdf
These elements include:

Carbon labeling of products. Please see extensive text at link above.

Implementing requirements for retail education (on packaging or on a handout at the time of purchase), that will inform customers about the energy consumption of the products and materials (including building materials) they buy, and how to operate and use products in the most energy-efficient manner. These requirements should take advantage of and build upon existing Energy Star initiatives and certification programs, and be implemented with retail sales organizations where applicable.

Relevance of Beyond Waste IWG proposals:

The Beyond Waste Implementation Work Group's recommendations address these elements in part. The Collaboration with Retailers proposal does not envision requirements on retailers, but instead a collaborative yet rigorous effort that could include carbon labeling and retail education as described in RCI-8. The Environmentally Preferable Purchasing proposal could be a means of providing incentive for retailers to participate in use of labels, certifications and retail education. Product categories covered under a future Product Stewardship Framework law, as proposed, could have carbon labeling or certification requirements applied, if through the described process carbon labeling or certification was determined to be warranted and beneficial.

RCI-10 More Stringent Appliance/Equipment/Lighting Efficiency Standards, and Appliance and Lighting Product Recycling and Design

RCI-10 contains a number of recommendations related to the work of the Beyond Waste IWG. For the complete text see pages 55-62 at http://www.ecy.wa.gov/climatechange/interimreport/122107_TWG_rci.pdf
These elements include:

Require (through state legislation) manufacturers to have an effective system in place for collecting and recycling end-of-life bulbs that contain hazardous materials that is easy and convenient for the consumer. (footnote included this text: For example, transitioning from incandescent lighting to CFLs in the residential sector offers enormous energy savings potential, but the fact that there is no comprehensive and effective system in place for recycling or disposing of old CFLs to avoid mercury contamination creates a barrier to achieving the full potential of CFLs.)

Provide incentives for manufacturers to improve the energy efficiency of products, the efficiency with which products can be produced, and the degree to which products can be recycled.

Consideration of potential shifts in the use of toxic materials (such as mercury in fluorescent lamps) that could inhibit consumer demand for the efficient appliances and create costly disposal issues. For example, efficiency standards could be linked to manufacturer “takeback” requirements, toxic reduction standards, or incentives for development and use of non-toxic technologies.

Require (through state legislation) the preferential procurement of EnergyStar products if available (equipment, appliance, or technology) if state funds are involved (e.g., state purchasing contracts, state grants or loans, etc.)

Substantially increase the use of green electronic products and reduce solid waste by promoting EPEAT through a consortium of state, local government and business procurement entities, and require the use of EPEAT in state and local procurement.

Relevance of Beyond Waste IWG proposals:

The Beyond Waste Implementation Work Group’s recommendations address these issues in part. The proposed Product Stewardship Framework legislation would establish a means to achieve a number of elements and mechanisms above. Fluorescent lighting could be named as an initial product category in the legislation. Or fluorescent lighting recycling could be run as a separate bill, using text from the Framework legislation as that basis of the text. A sample of that approach is included in the BW IWG report.

The Environmentally Preferable Purchasing proposal can be a means of addressing the other elements above.

RCI-11 Policies and/or Programs Specifically Targeting Non-energy GHG Emissions

RCI-11 contains a number of recommendations related to the work of the Beyond Waste IWG. These elements pertain to the use of Ozone Depleting Substitutes (ODS) such as Hydrofluorocarbon (HFCs) and Perfluorocompounds (PFCs) that are potent greenhouse gases. A number of consumer products contain these gases, including novelty aerosols, aerosol Mobile Air Conditioning products sold to non-professionals, and aerosol keyboard cleaners.

Text throughout RCI-11 calls for consumer and retailer education, labeling, procurement policies, and restrictions. The text can be seen on pages 63-71 at http://www.ecy.wa.gov/climatechange/interimreport/122107_TWG_ri.pdf

Relevance of Beyond Waste IWG proposals:

Recommendations from the Beyond Waste IWG will assist in addressing some elements described in RCI-11. The proposed Product Stewardship Framework legislation would establish a means to achieve a number of approaches named in the text. For instance, consumer aerosol products with ODS could be named as an initial product category in the legislation. Or ODS containing consumer aerosol products could be run as a separate bill, using text from the Framework legislation as that basis of the text.

The Environmentally Preferable Purchasing proposal and work with retailers can be a means of addressing the other elements discussed.