



Appendices: International Waste Strategy Benchmarking

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Prepared for:
NSW Environment Protection Authority

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Appendix A Glossary



BMW	Biodegradable Municipal Waste – elements of the municipal waste stream (such as food and garden waste, paper, cardboard and timber) that will biodegrade under appropriate conditions in a landfill site.
C&D	Construction and Demolition - refers to waste generated from construction and demolition works and includes: building and demolition waste, asphalt waste and excavated natural material.
C&I	Commercial and Industrial - businesses and industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices), excluding construction and demolition and municipal properties
Climate Change	Although the Earth's climate changes naturally, this term typically refers to long-term (inter-decadal) trends in climatic change which are linked to increasing concentrations of greenhouse gases in the atmosphere.
Defra	Department for Environment, Food and Rural Affairs – United Kingdom
EfW	Energy from Waste – facilities that combust waste materials and use the resulting heat to generate electricity
EPR	Extended Producer Responsibility (EPR) – regulations to encourage product design to reduce waste from consumer goods and their impact on the environment.
EU	European Union – Economic and Political Union of 27 European Countries.
e-waste	Waste electrical and electronic equipment
Greenhouse Gas, Carbon and Carbon Dioxide Equivalents	Greenhouse gases contribute to global warming. The most abundant greenhouse gas is carbon dioxide, so these gases are often referred to simply as 'carbon'. In reality, all greenhouse gases are typically aggregated to a single number indicating their relative global warming impact to that of carbon dioxide. This number is known as the 'carbon dioxide equivalent'.
Industrial Symbiosis	A concept whereby organisations can share resources, and most commonly where one businesses waste can become another's raw material.
Life Cycle Assessment	A method of assessing the environmental impact of a product, service or activity across its life.
MBT	Mechanical Biological Treatment – A process whereby recyclable and compostable materials are extracted from a feedstock of mixed waste.
MRF	Material Recovery Facility – Typically a facility which accepts mixed recyclable materials and separates them into individual material streams for reprocessing.

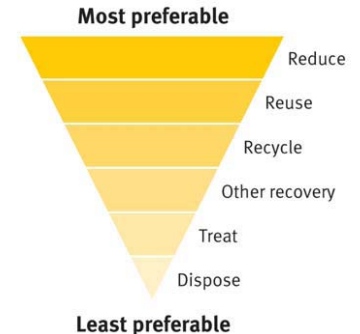
MSW	Municipal Solid Waste - Material collected from municipal properties including solid and inert waste generation from the four sub-streams of kerbside collected domestic waste, other council waste (municipal parks and gardens, road making, street sweepings, council tidy bins and drop off centres) and garden organics.
NSW EPA	New South Wales Environment Protection Authority
Producer responsibility	Schemes where product manufacturers are designated as being responsible for waste associated with disposal of their product at the end of its life
Product Stewardship	A holistic concept whereby all those involved in a product's lifecycle take responsibility for improving the sustainability of a product. This can involve design the product to consume less electricity, be more easily disposed of or reduce safety risks.
PVC	Poly vinyl chloride – a commonly used plastic
WARR Act	Waste Avoidance and Resource Recovery Act 2001
WARRS	Waste Avoidance and Resource Recovery Strategy
WFD	Waste Framework Directive – legislation underpinning all European waste management strategies

Appendix B Summary of Waste Strategies reviewed

Australia and New Zealand

Queensland

Waste Strategy Reviewed:	Queensland's Waste Reduction and Recycling Waste Strategy 2010-2020
Context and Date	Released in 2010 the strategy is designed to drive a decade of significant improvement in managing Queensland's waste and recovering resources creating a low-waste Queensland where there is less wasteful generation, where resources are used more efficiently, and where disposal is seen as a last – not a first – option.
Scope of Strategy [waste groups included in the Strategy]	<p>The Strategy covers 3 main waste types (which have associated targets):</p> <ul style="list-style-type: none"> ■ Municipal Waste (which includes household waste) - Domestic waste, and waste generated by the provision of local government municipal services, such as maintenance of parks, gardens and street bins, and residues from local government sewage and water treatment plants. MSW does not include waste generated from the commercial or administration activities of local governments. ■ Construction and demolition (C&D) - Waste that is generated as a result of building, refurbishing, renovating or demolishing structures, buildings and infrastructure such as roads, bridges and docks, and includes material such as timber, clean soil, concrete, asphalt, plasterboard, steel, bricks, ceramic and clay tiles, and aluminium. ■ Commercial and industrial (C&I) - Waste that is generated as a result of commercial or industrial activities including, but are not restricted to: manufacturing and industrial processes, wholesale or retail trade, sorting, resource recovery, reprocessing and recycling operations, commercial services including those provided to households (e.g. gardening, skip or bin hire, etc), accommodation, cafes, pubs and clubs, restaurants, resorts and other hospitality sector activities, primary industries including agricultural, forestry and fishing, office, administration, institutional or other business activity. ■ Regulated waste (non-domestic sources including acids, oils, batteries, tyres, food processing and clinical waste)
Waste Strategy Themes	<p>The Strategy has been developed upon the waste and resource management hierarchy. Other important guiding principles that inform the strategy are resource efficiency, sustainability, engagement, and capacity building. Based on these principles, the strategy's broad goals are to:</p> <ul style="list-style-type: none"> ■ Reduce waste ■ Optimise recovery and recycling ■ Develop sustainable waste industries and jobs. <p>To achieve these goals the Authority has identified 5 key strategies:</p> <ul style="list-style-type: none"> ■ Targets and priorities – Strategy sets targets aimed at tackling waste generation, and optimising opportunities for recovering, reusing or recycling materials and end-of-life products ■ Price signal – Waste disposal levy – introduction of a waste disposal levy ■ Stronger legislation – New legislation to underpin the strategy ■ Programs and actions – delivery of actions and effective programs to business and industry, environment groups and community. The focus is on priority products and wastes. ■ Partnerships to deliver change – consultation, engagement and cooperation between stakeholders <p>Include some details on priority products (see page 9 of strategy) – good table included.</p>



Targets

Waste Avoidance

Target	2008 baseline	By 2014	By 2017	By 2020
Reduce generation of waste	2.4 tonnes per person per year	5 % reduction 2.3 tonnes per person per year	10 % reduction 2.2 tonnes per person per year	15 % reduction 2 tonnes per person per year

Recycling or recovery

Target	2008 baseline	By 2014	By 2017	By 2020	Achievability
Increase recycling of construction and demolition waste	35%	50%	60%	75%	HIGH (recyclable nature of the material i.e. soil, concrete, timber etc)
Increase recycling of commercial and industrial waste	18%	40%	50%	60%	MEDIUM (current low recycling rate, introduction of levy, no processing infrastructure for C&I)
Increase recycling of regulated waste	30%	35%	40%	45%	No information
Increase recycling of municipal solid waste Target 150: increase recycling of household waste to 150 kg per person per year	23 % 64 kg per person per year	50 % 80 kg per person per year	55 % 100 kg per person per year	65 % 150 kg per person per year	MEDIUM (limited opportunities to recycle and lack of a price signal)

Diversion from Landfill

Target	2008 baseline	By 2014	By 2017	By 2020
Reduce waste disposal to landfill, compared to business-as-usual projections	Business-as-usual–no strategy	Reduce landfill disposal by 25 % – 4.6 million tonnes of avoided landfill disposal since 2010	Reduce landfill disposal by 40 % – 9.9 million tonnes of additional avoided landfill disposal since 2014	Reduce landfill disposal by 50 % – 16.3 million tonnes of additional avoided landfill disposal since 2017

Energy from Waste - The Strategy does not specifically mention the use of EfW

Litter Recycling - Reduce the total amount of, and the environmental impacts from, litter and illegal dumping

	<p>Other targets Reduce landfill gas emissions by 50% - Toward Q2: Tomorrow's Queensland the Queensland Government addresses current and future challenges for the state, and sets a target to cut Queenslanders' carbon footprint by a third by 2020. To achieve the strategy's target, organic waste from both domestic and commercial sources will have to be diverted from landfill.</p>																
Development of the Waste Strategy?	<p>Queensland's previous waste strategy was released in 1996, and no longer reflects the current state of play or the potential for improved waste reduction and resource recovery. The government started the process of developing a modern strategy by releasing a waste discussion paper in October 2007. A draft strategy and waste disposal levy proposal was released for public comment in May 2010, feedback from which can be viewed at <www.derm.qld.gov.au/waste>. The feedback was used to finalise the strategy.</p>																
How are the targets monitored and reported?	<p>The draft waste strategy highlighted the relatively poor quality of Queensland's waste data. The following initiatives will help establish improved methodologies and reporting mechanisms:</p> <ul style="list-style-type: none"> ■ Conducting composition audits of commercial and industrial (C&I), construction and demolition (C&D) and regulated wastes to help measure recovery performance. ■ Analysing infrastructure across Queensland to identify current capacity and gaps in management and processing capacity. ■ Developing a standard methodology for measuring and reporting on public place and event recycling. ■ Developing a standard methodology for measuring and reporting on waste disposal and resource recovery. ■ Conducting composition audits on municipal waste to identify priority products and recoverable materials. <p>Progress towards achieving the targets will be measured every three years against the 2008 base case. The government will monitor performance and achievements through three-yearly progress reports. Strategy priorities, targets, levy pricing, and the effectiveness of programs will all be part of the regular review and public reporting.</p> <p>Waste Avoidance</p> <ul style="list-style-type: none"> ■ Measuring how much waste has been avoided is difficult. One way is by calculating the reduction in overall waste generation (measured as recovered-plus-disposed). 																
How are the schemes implemented?	<p>Waste levy The Authority proposes to introduce on 1 July 2011 a levy on waste disposal (see opposite). The levy will not apply to Municipal Solid Waste (household kerbside and self-haul waste, parks and maintenance waste). The levy will cover 34 local government areas and will be reviewed every 2 years.</p> <p>Over the first four years of its collection, the levy will be distributed as follows:</p> <ul style="list-style-type: none"> ■ \$159 million towards targeted programs to help business and industry reduce the amount of waste they generate, and to encourage industry investment in recycling technologies, particularly in regional areas ■ \$120 million for local governments to spend on environmental projects, focusing on better waste management facilities and practices ■ Any surplus funds will be dedicated to priority Queensland Government environmental initiatives, including acquiring land for national parks. 	<table border="1"> <thead> <tr> <th>Waste Stream</th> <th>Levy \$/tonne disposed</th> </tr> </thead> <tbody> <tr> <td>Commercial and industrial waste</td> <td>\$35</td> </tr> <tr> <td>Construction and demolition waste</td> <td>\$35</td> </tr> <tr> <td>Contaminated and acid sulphate soils</td> <td>\$35</td> </tr> <tr> <td>Lower hazard regulated waste</td> <td>\$50</td> </tr> <tr> <td>Higher hazard regulated waste</td> <td>\$50</td> </tr> <tr> <td>Municipal solid waste</td> <td>\$0</td> </tr> </tbody> </table>	Waste Stream	Levy \$/tonne disposed	Commercial and industrial waste	\$35	Construction and demolition waste	\$35	Contaminated and acid sulphate soils	\$35	Lower hazard regulated waste	\$50	Higher hazard regulated waste	\$50	Municipal solid waste	\$0	
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Legislation:

The government will deliver a new Act and regulations, and amend and strengthen existing laws including:

- Priority products, product stewardship and landfill bans - The legislation will set out a process for publishing a priority product statement, which will identify priority products and materials, preferred management options and performance measures including establishing product stewardship programs under which producers take back end-of-life products and phased-in disposal bans for certain priority products.
- Requires the Queensland Government to regularly review and report on this strategy
- Introduces a waste disposal levy to change behaviour
- Strengthens requirements for implementing state and local government strategic waste plans
- Establishes requirements for resource recovery from waste streams prior to disposal
- Sets mandatory reporting requirements for the waste and resource recovery sector
- Delivers stronger litter and illegal dumping provisions, including third-party public reporting of vehicle-related litter offences.

Programs and actions:

State Government:

- Government departments required to include target for purchase of recycled content products, develop recycling and waste reduction actions in strategic waste management plans and report on progress;
- Product stewardship schemes on priority wastes, including tyres, or televisions (part of national waste strategy agenda)
- Regional and state wide collection programs including infrastructure²⁵ resource recovery programs to create green jobs in regional areas
- Improved compliance and regulation of waste and resource recovery sector
- State wide litter prevention strategy including public reporting of litter from vehicles, ban on the release of lighter –than-air balloons at government events, reduce litter from plastic bags and advertising material, support to existing programs.

Business and industry:

- Support business to make the transition to low-waste through business support (help to identify, avoid and reduce waste, install recycling infrastructure) develop partnerships between suppliers, retailers and government.
- Business information/networking services – investigation of online waste exchange server.
- Hazardous/regulated waste reduction and recycling fund – including research on characterisations, avoidance, treatment and alternative end uses
- Improve recovery of construction and demolition waste via state-wide planning measures (i.e. standardised site waste management and minimisation plans)
- Competitive grants for infrastructure – including organics, C&D, end-of-life tyres and e-waste
- Market development programs for organics and C&D
- Incentives for sustainable recovery and recycling of waste from regional areas
- Support for research and development programs to develop and commercialise innovative technologies, processes and products
- Design for Environment (D4E) program to support product development and design professionals to use sustainable product design across the entire product life cycle.

Households, Schools, and community organisations:

- Household waste reduction initiatives – educational campaigns focused on main waste reduction principles, the Target 150 campaign, investigate incentives to waste less, i.e. smaller residual bins and larger recycling.

	<ul style="list-style-type: none">■ Expanding public place recycling■ Reducing household organic waste through kerbside green/food waste bin pilots, incentives, education and community gardens■ Encourage hazardous waste collections for householders■ Community organisations recycling and re-use grant scheme■ Recycling educational programs such as 5 'recycling ambassadors' to provide community leadership also the 'Do the right thing, use the right bin' school waste minimisation programme <p>Local Government:</p> <ul style="list-style-type: none">■ Local government reference group to establish regional priorities■ Assistance for waste management planning■ Incentive schemes for improved resource recovery practices■ Assistance for small to medium disposal facilities, and alternative waste technologies■ Partnership program to act on litter and illegally dumped waste, clean up historical waste including those in indigenous communities
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■ **Victoria**

<p>Waste Strategy Reviewed:</p>	<ul style="list-style-type: none"> ■ Metropolitan Waste and Resource Recovery Strategic Plan ■ Sustainability in Action Towards Zero Waste Strategy
<p>Context and Date</p>	<p>Sustainability in action Towards Zero Waste (2005 - 2015)</p> <p>Metropolitan Waste and Resource Recovery Strategic Plan (2009) - This <i>Metropolitan Waste and Resource Recovery Strategic Plan</i> has been developed to further deliver on key targets and intentions of <i>Towards Zero Waste</i> for metropolitan Melbourne</p> <p>The Towards Zero Waste Strategy - sets the direction and vision for a more sustainable Victoria. It seeks to minimise the amount of waste that Victorians generate and maximise opportunities for recovering materials. The Metropolitan Waste and Resource Recovery Strategic Plan has been developed to further deliver on key targets and intentions of Towards Zero Waste for metropolitan Melbourne.</p>
<p>Scope of Strategy</p>	<p>The Strategy covers 3 main waste types (which have associated targets):</p> <ul style="list-style-type: none"> ■ Municipal Waste (which includes household waste) – Solid waste generated from municipal and residential activities, and including waste collected by, or on behalf of, a municipal council. As used in this document, MSW does not include waste delivered to municipal disposal sites by commercial operators or waste from municipal demolition projects. ■ Construction and demolition (C&D) - wastes emanate from large building projects to residential renovations. ■ Commercial and industrial (C&I) ■ Sector Waste Generated (Recycled) - Commerce & Industry 3.1 million tonnes (59%) Municipal 2.2 million tonnes (35%) Construction & Demolition 3.1 million tonnes (57%) <p>The Strategy also provides details of the priority products, materials, industries and locations.</p> <p><u>Priority Products:</u></p> <ul style="list-style-type: none"> ■ <i>Electrical and electronic appliances</i> ■ <i>Batteries</i> ■ <i>Computers and peripheral IT equipment</i> ■ <i>Industrial/transport packaging including film plastics</i> ■ <i>Tyres</i> ■ <i>Office paper</i> ■ <i>Consumer packaging</i> ■ <i>Treated timber</i> ■ <i>Paint</i> ■ <i>Motor vehicles</i> ■ <i>Mercury-containing lamps including fluorescent lamps</i> ■ <i>Oil and household chemicals and related Packaging</i> <p><u>Priority Materials:</u></p> <ul style="list-style-type: none"> ■ <i>Garden organics</i> ■ <i>Concrete, bricks, asphalt</i> ■ <i>Food organics</i>

	<ul style="list-style-type: none"> ■ Timber ■ Paper/cardboard ■ Fill material <p><u>Priority Industries:</u></p> <ul style="list-style-type: none"> ■ Construction and demolition ■ Food services, food retail and food manufacturing ■ Machinery, equipment, automotive and metal product manufacturing ■ Timber products and furniture manufacturing ■ The CBD office sector, including Victorian Government offices ■ Small and medium size enterprises which account for more than 90 per cent of Victorian businesses and are the source for a large and dispersed quantity of waste. <p><u>Priority Locations:</u> Geographic areas for priority action are greater metropolitan Melbourne, Geelong, Ballarat and Bendigo, where about 90 per cent of solid waste is generated, and locations with shortages of landfill capacity including the cities of Latrobe, Seymour and Hamilton.</p>
Waste Strategy Themes	<p>The Strategy has been developed upon the following strategic tools:</p> <ul style="list-style-type: none"> ■ Waste management hierarchy ■ Product Stewardship (including the Sustainability Covenant – voluntary agreement between an authority and business, industry association etc to increase resource efficiency and reduce ecological impacts of products and services and The National Packaging Covenant – shared responsibility to reduce the environmental impacts of consumer packaging) ■ Engagement and Education ■ Partnerships with industry and government ■ Funding and support ■ Regulatory tools
Targets	<p>Targets apply to the whole of Victoria, however the majority of the waste generation and therefore opportunities for improvement is in metropolitan Melbourne and large regional centres</p> <p><u>Generating less waste from our activities.</u></p> <ul style="list-style-type: none"> ■ 1.5 million tonnes reduction in the projected quantity of all types of solid wastes from all sectors generated, by 2014. Major contributor to this will be the C&I sector. <p><u>Increase the sustainable recovery of materials for recycling and reprocessing.</u></p> <ul style="list-style-type: none"> ■ 75% by weight of solid waste recovered for reuse, recycling and/or energy generation by 2014. ■ Strategy sets out sectoral targets to be achieved by 2008-09 and 2014.

	ACTUAL	TZW RECOVERY TARGETS	
	2006-07	2008-09	2013-14
Municipal Solid Waste (MSW)	41%	45%	65%
Commerical & Industrial (C&I) waste	68%	65%	80%
Construction & Demolition (C&D) waste	71%	65%	80%

Energy from Waste – No specific targets

Littering

- A 25% improvement, from 2003 levels, in littering behaviours by 2014.

The targets apply to Victoria as a whole, but are flexible in terms of demographics and other factors. The concentration of population and industrial activity mean Melbourne and large regional centres are expected to achieve resource recovery levels in excess of these targets. Metropolitan Melbourne contributes approximately 70% of Victoria's total solid waste, i.e., MSW, C&I waste and C&D waste.

Carbon

The strategy comments on the originally intended Carbon Pollution Reduction Scheme (CPRS): *The Australian Government has committed to introducing an emissions trading scheme for greenhouse gases by 2010, which has been called the Carbon Pollution Reduction Scheme (CPRS). The purpose of the CPRS is to introduce tradable permits for the emission of greenhouse gases. Now delayed until the end of 2012*

Development of the Waste Strategy?

This Strategic Plan was jointly prepared by the Department of Sustainability and Environment (DSE), Sustainability Victoria (SV), the Metropolitan Waste Management Group (MWMG) and the Environment Protection Authority (EPA) Victoria. In developing the Strategic Plan, these agencies undertook widespread consultation and engaged in discussions, notably with local government and industry. A companion to the Strategic Plan is the Solid Industrial Waste Management Plan (SIWMP), which will provide a clear direction for solid industrial waste and its future management and reduction in Victoria. The SIWMP will cover the five years from the time of its release and will apply to all individuals and organisations involved in the generation, management or transport of solid industrial waste in Victoria.

How are the targets monitored and reported?

Sustainability Victoria (a new statutory authority) will prepare an annual assessment of progress in achieving the strategy's targets. Results will be communicated to all stakeholders via internet and other channels. The assessment will draw upon a range of Victorian Government and industry sources, including annual surveys of the recycling industry and local government, landfill data collected by EPA Victoria, and information collected from the waste management industry and other sectors.

During 2009-10, Sustainability Victoria will undertake a formal progress review, in consultation with stakeholders, to assess progress in achieving the strategy's targets. This will provide opportunity to monitor achievements to date, adjust programs and activities, and review the appropriateness of the targets. The review will include an analysis of how technologies including alternative waste processing have developed to confirm ongoing directions for the processing of residual waste streams from

	<p>households and industry. The review will also provide important input into EPA's assessment of the feasibility of potential landfill bans for particular waste types and/or streams.</p> <p>To help monitoring Victoria will work on the Construction of a waste profile built upon data from EPA landfill levy returns, EcoRecycle surveys (annual <i>Local Government Data Collection and Annual Survey of Victorian Recycling Industries</i>) and landfill composition estimates</p>
<p>How are the schemes implemented?</p>	<p><u>Key Actions to implement Municipal targets</u></p> <ul style="list-style-type: none"> ■ Key actions for local government for achieving recovery targets include the expanded collection of organic garbage such as garden clippings, the establishment of product stewardship agreements for priority products, and the provision of away from home recycling services. ■ There is potential to extend the recovery of materials from a variety of sources, particularly multi-unit developments. ■ The Strategic Plan identifies the potential to establish up to eight new resource recovery facilities for MSW in Melbourne. ■ A range of technologies will enable increased recovery and treatment of resources to produce energy and marketable end products, such as compost. ■ reprocessing of waste materials will need to be flexible This could include varied service options in response to different demographics within municipalities <p><u>C&I and C&D Sector – Key actions</u></p> <ul style="list-style-type: none"> ■ Key actions for the commercial and industrial and C&D sector include the improvement of waste management systems and infrastructure to enable the sorting of mixed wastes, the establishment of product stewardship agreements for priority products, and greater efficiencies in the production of goods and services. ■ The strategy contains 28 key actions made up of industry incentives, education, and advisory support (listed below). Strategies focus on the improvement of waste management systems and infrastructure, the establishment of product stewardship agreements, the development of both new and existing markets for recycled products, and raising the awareness and capacity of communities and business. <p><u>Product Stewardship</u> - This involves innovations to improve the design and manufacture of merchandise and facilitate reuse, recycling or disposal. Under the strategy, product stewardship agreements will be established to reduce end-of-life waste for priority products while enhancing take back, recycling and resource recovery options. Innovations in sustainable packaging should also help to reduce litter.</p> <p><u>Engagement and Education</u> – Local government will build on existing innovative programs to promote the 'reduce, reuse and recycle' message to communities State and local governments will continue to coordinate, develop and implement the highly successful Waste Wise Program – an initiative assisted by regional educational officers and local government, to foster community action.</p> <p><u>Industry Leadership and Partnerships – to engage C&I and C&D sectors.</u> Successful examples already underway in the construction and demolition sector include project partnerships between Sustainability Victoria and the Housing Industry Association and the Master Builders Association of Victoria. Alliances have also been established with the Plastics and Chemicals Industry Association and the Australian Industry Group, to work with their members to improve performance in reducing commercial and industrial–related wastes.</p>

Implementation Actions – 28 key strategies from the Towards Zero Waste Strategy 2005:

1 Sustainability Victoria, Waste Management Groups and local governments will identify opportunities for resource recovery services, as appropriate through relevant planning processes. Waste Management Groups will facilitate contractual arrangements between local governments and the private sector for the provision of these services.

2 & 13 establishment of product stewardship arrangements, supported by appropriate tools such as regulatory underpinning legislation or sustainability covenants, for TVs, computers, IT equipment and other electrical and electronic products, tyres, consumer packaging (including plastic bags), paint and mercury containing lamps, batteries (domestic, car, and portable equipment), motor vehicles and treated timber.

4 Sustainability Victoria, with industry participation, will facilitate the establishment of **product stewardship arrangements** for responsible disposal of domestic chemicals and related packaging

5 Local government, the Municipal Association of Victoria, and other bodies including Sustainability Victoria, will establish **benchmarks and targets for recycled-content purchasing** (based on ECO-Buy data).

6 Sustainability Victoria and Waste Management Groups will work closely with industry to enhance and develop markets for recycled organic products and ensure recycled **organic products** are fit-for-purpose

7 Through the Recycling in Public Places program, Sustainability Victoria will provide increased assistance to local governments, Waste Management Groups, land managers, **major events and venue managers**, to provide efficient and accessible recycling services away from home.

8 EPA Victoria will investigate the practicability of **landfill bans** for municipal waste types and/or streams.

9 Sustainability Victoria will work with EPA Victoria, Waste Management Groups, local government and the waste management industry to **improve the quality of municipal data collection**, management and reporting throughout the life of the strategy.

10 Sustainability Victoria will develop materials efficiency measures to gauge the performance of the Victorian economy in relation to sustainability by 2006-07.

11 EPA Victoria will evaluate and encourage the uptake of broad sustainability indicators such as the **Ecological Footprint** to build community understanding of resource efficiency.

12 Sustainability Victoria and WorkSafe Victoria will work with the C&I and C&D sectors during the life of this strategy to develop systems and infrastructure which do not compromise worker or community health and safety.

15 Where identified needs exist, Sustainability Victoria will help to **develop markets for recovered C&I and C&D materials** through grants, partnerships and other initiatives over the life of the strategy.

16 Sustainability Victoria will work closely with industry to enhance markets for recycled organic products and renewable energy products derived from processing clean organic and residual materials streams containing organics.

17 Sustainability Victoria will further investigate, and where appropriate, promote resource management options which **recover energy from residual and clean organics wastes from the C&I and C&D sectors**, where no higher resource value recovery is viable.

18 The Victorian Government will develop closer coordination of government business assistance programs for industry, including a focus on lean manufacturing, cleaner production and waste recovery.

19 Sustainability Victoria, through its **Waste Wise Program**, will continue to work with the business sector to assist it with avoiding, reusing and recycling waste, as well as recognising the potential financial benefits of materials efficiency.

20 The Victorian Government will work with the waste **collection and disposal industry** to encourage practical and commercially driven services to foster waste avoidance and resource recovery. **A voluntary agreement** may be sought with the waste collection and disposal industry encompassing:

- Assistance to clients (from large manufacturers to SMEs etc) regarding waste avoidance and resource recovery
- Standards for recycling systems
- Pricing systems which encourage clients to reduce waste and to recycle (e.g., pay by weight)
- Collection and reporting of waste data.

21 The Victorian Litter Action Alliance, local government and the Department of Primary Industries will work with the business sector to build awareness within industry to address litter. Targeted industry groups include the hospitality, building, agriculture and farming sectors.

22 The Victorian Government will encourage local government to provide recycling services to C&I sectors, particularly those small to medium enterprises within their communities, where appropriate and viable, but will not be expected to subsidise the recycling of commercial waste.

23 The Victorian Government will ask local government to review planning processes to ensure recycling is supported in the design of new commercial and industrial buildings and infrastructure, and that during the construction phase, waste minimisation and litter prevention planning become a standard requirement for obtaining permits.

24 The Victorian Government, in partnership with industry will, over the life of the strategy, enhance **C&I and C&D waste management infrastructure** in line with established priority materials and products (see Section 7).

25 Priorities for expanded C&I and C&D waste management infrastructure will be integrated into EPA Victoria, Sustainability Victoria and WMG initiatives to implement government policy to minimise the use and development of landfills.

26 EPA Victoria will investigate potential **landfill ban for C&D waste types** and/or streams.

27 EPA Victoria will investigate the practicability of **landfill bans for C&I waste** types and/or streams

28 Establishing accreditation programs for waste sorters and processors has been an effective means of improving performance across other areas including the municipal sector. The Victorian Government will adapt similar programs for the C&I and C&D waste collection and reprocessing sector

■ **Western Australia**

Waste Strategy Reviewed:	Waste Strategy for Western Australia Draft II (March 2010)
Context and Date	<p>Revised in 2010 after public comment received between September to mid December 2009</p> <p>The aim of the Waste Strategy is to move Western Australia to best practice in Waste Management by 2022; it builds on substantial earlier work to reduce waste and its environmental impacts. The strategy acknowledges key factors and potential implementation issues in relation to the areas regional communities where disposal is primarily through unmanned landfill sites and recycling infrastructure is limited due to the large distance to recovery facilities and end markets.</p>
Scope of Strategy	<p>The Strategy covers 4 main waste types (which have associated targets):</p> <ul style="list-style-type: none"> ■ Municipal Waste (which includes household waste); ■ Construction and demolition (C&D) ■ Commercial and industrial (C&I) ■ Hazardous Household Waste <p>For the purpose of the strategy, waste refers to solid materials discarded from households, including both green waste and other household organics; local government generated green waste; business waste; and construction and demolition waste. It includes hazardous wastes. It does not include nuclear waste, mining spoil or agricultural residues.</p>
Waste Strategy Themes	<p>The strategy is based on the waste hierarchy:</p> <ul style="list-style-type: none"> ■ Waste avoidance ■ Waste recovery ■ Safe disposal of what cannot managed otherwise. <p>The strategy is underpinned by a focus on education and public information, empowering and supporting local government and the private waste management sector, and pushing those who produce goods that end up as waste to take responsibility for their products (e.g. Product Stewardship).</p> <p>There is also a strong focus on developing the recycling markets, in particular for Construction and Demolition wastes.</p> <p>The values and principles that drive the waste strategy include:</p> <ul style="list-style-type: none"> ■ Sustainability ■ Resource Efficiency ■ Community Engagement ■ Innovation ■ Acceptance ■ Simplicity

Targets

The aim of the Waste Strategy is to move Western Australia to best practice in Waste Management by 2022 and drive a decade of significant improvement in the management of waste

Waste Avoidance Measuring the quantity of waste avoided is extremely difficult. For the purposes of this strategy, the Authority has taken the view that developing a rational, agreed methodology for assessing waste avoidance is the first job before meaningful targets can be set.

Recycling or Recovery (Resource Recovery)

- In metropolitan Perth achieve at least a 70% recovery rate for **municipal waste** by 2016.
- The contamination rate of **kerbside recyclables** collections will be reduced from approximately 25% to 10% by 2016.
- The recovery rate for **construction and demolition** waste will be increased from 14% in 2006/07 to 50% by 2016 and to 70% by 2020 .
- The recovery rate for **commercial and industrial** waste will continuously increase over the lifespan of the strategy. At least one facility for processing commercial and industrial waste will be established by 2016 and a second by 2020.
- In larger regional areas with a population greater than 25,000 achieved at least a 45% recovery rate for waste by 2016.

Diversion from landfill

- There are no specific diversion targets set, however
- There are several standards set for landfills and dates to ensure achievement of these which link to the theme – safe disposal of waste. The standards are:
 - All landfills servicing metropolitan Perth will be operating to appropriate standards by 2011.
 - All landfills servicing larger regional areas with a population greater than 25,000 will be operating to existing standards consistent with those used by larger landfills in WA by 2015.
 - Landfills that are not consistent with the existing standards of larger landfills in WA will be closed by 2015 if they lie within a 100km radius of a landfill that does meet the standards. These sites will be replaced with transfer stations.
 - Residual waste from all regions with a population of less than 25,000 will be managed in accordance with a local or regional strategic waste management plan by 2015.

Energy from Waste there are no specific targets related to energy from waste, however the Authority will work with the Environment Protection Authority to develop a mechanism to look at waste to energy and evaluate its effects on the environment and community acceptance.

Litter Recycling. There are no specific targets related to litter.

Other Targets specifically mentioned in the Strategy include:

Product Stewardship – develop product stewardship schemes for 2 priority products. Priority material or material groups include:

- packaging and containers
- glass
- domestic hazardous materials and products containing hazardous materials, including chemicals, paint, fluorescent lights and batteries
- electronic waste

	<ul style="list-style-type: none"> ▪ tyres ▪ mattresses ▪ used oil <p>Product Stewardship – recommend PS regulations for at least 2 priority products. Community Engagement – will fund at least 2 community engagement and behaviour change programs that focus on waste avoidance. Construction and Demolition Waste – 50% of the current C&D waste stream to be used as raw material by government agencies. <u>Data – implement an efficient and effective scheme of monitoring and reporting by 2012.</u></p>
Development of the Waste Strategy?	<p>The quantity of waste generated in Western Australia is steadily growing, with the waste industry being continually challenged by future carbon constraints and reliance on overseas markets and global economic trends.</p> <p>Drivers for the Strategy are existing legislation including:</p> <ul style="list-style-type: none"> ▪ 2005 Extended Producer Responsibility Policy Statement; ▪ 2004 Statement of Strategic Direction for Waste Management in Western Australia; ▪ 2001 Towards Zero Waste action plan ▪ 2007 Stakeholder Advisory Group Investigation into Best Practice Container Deposit Systems for Western Australia. ▪ 2007 Waste Avoidance and Resource Recovery Act <p>The Act established the Waste Authority and required it to develop a long term Waste Strategy for Western Australia. The strategy is obliged to plan for continuous improvement of waste services, waste avoidance and resource recovery, benchmarked against best practice. It must set whole of state targets for waste reduction, resource recovery and the diversion of waste from landfill disposal.</p>
How are the targets monitored and reported?	<p>The strategy states that the Waste Authority will work with others to develop and implement an efficient and effective scheme of monitoring and reporting that is both useful for managers and suffices for reporting requirements and benchmarking by 2012. The Strategy itself includes information from a range of sources and includes extrapolation of data for rural areas, the information has been generated by the Department of Environment and Conservation http://www.zerowastewa.com.au/documents/Appendix2_Waste_in_WA_data.pdf The Strategy states that progress against the above targets will be reported in the Waste Authority's annual report.</p>
How are the schemes implemented?	<p><u>Waste avoidance</u> <i>Product Stewardship – assist industry and local manufacture, also recommend regulations and progress national schemes with the Environment Protection and Heritage.</i> <i>State and Commonwealth collaboration to reduce imported product waste generation</i> <i>Community engagement and behaviour- funding to develop at least 2 programs on waste avoidance, a senior staff member will be allocated to facilitate this process</i> <i>State and Commonwealth collaboration to develop a common mechanism to measure waste avoidance</i></p> <p><u>Resource Recovery</u> <i>Market Development – funding to identify viable market opportunities, recommendation for reuse of 50% C&D waste in government agencies</i> <i>Infrastructure Development – develop alternative waste management models (pop >25,000), and assist in regional Strategic Waste Management Plans</i> <i>Product Stewardship – assist industry and local manufacturing to develop product stewardship schemes for a minimum of two priority products, also recommend regulations, progress national schemes and recommend priority product stewardship for at</i></p>

least two priority products with the Environment Protection and Heritage Council. The Authority will review involvement in the National Packaging Covenant, a voluntary initiative implemented by the Australian Government and industry to reduce the environmental impact of packaging and recommend an extension of the Producer Responsibility Initiative, where a producers responsibility for a product is extended to the post-consumer stage of its life cycle, they will also recommend upfront charges on new purchases (a recycling fee) i.e. container deposit scheme

Recycling – work with private sector to optimise green and organic waste diversion, encourage recycling at major events.

Community Engagement – provide funding for community engagement and behaviour change programmes with a senior member of staff contributing to this activity, assist industry, support initiatives i.e. Waste Wise schools programme.

Regulation – advise government on increase in Landfill Levy (to reflect the true environment and social cost of landfilling wastes), recommendation to ban waste disposal which has not undergone resource recovery, regulations which require local government to implement disposal plan before demolition

Regional Planning – development of Strategic Waste Management plans to increase resource efficiency, planning framework for the provision of resource recovery facilities

Government leading by example – schemes to implement post-consumer management, state government agencies encouraged to create waste management plans including resource recovery and avoidance

Disposal

Landfill standards – revision of states landfill guidelines, propose regulations to bring waste management in larger regional areas in line with those used by larger landfills in WA

Regional and state-wide planning – regional councils to develop Strategic Waste Management Plans, landfill rationalisation, planning framework for the provision and siting of waste infrastructure.

Hazardous waste management – implementation of collection services, develop sound, pragmatic waste management outcomes, to facilitate this a senior staff member will be allocated to the project and funded it accordingly

Remote and mining communities - develop waste management plans for remote indigenous communities, management of waste from mining site accommodation

Litter and illegal dumping – future strategic waste management plans will include litter and illegal dumping management strategies

Regulation – develop regulation to declare collection and management of solid waste an essential service

Education – support initiative that promote positive behaviours in respect to litter and waste disposal

Alternative waste treatment – The Authority will work with Environment Protection Authority to develop a mechanism to look at waste to energy and evaluate its effects on the environment and community acceptance

The most recent annual report of 2010/2011 states the following achievements:

Avoidance

Waste Wise Schools - The Waste Wise Schools program offers resources and support for schools to plan, implement and maintain waste minimising projects such as recycling, composting and worm farming - This year, an additional 30 metropolitan schools and 18 regional schools joined the program, making a total of 665 Waste Wise Schools in Western Australia, compared to 617 last year. There were 44 grants made, reaching 17,097 students.

Keep Australia Beautiful Council - The 2010/11 National Litter Index showed that the amount of litter dropped has significantly reduced, reversing the trend of increasing litter levels over the previous three years. KABC WA had over 8,000 community members and businesses involved in the educational litter program Adopt-a-Spot and in the area of enforcement

Resource Recovery

The Zero Waste Plan Development Scheme (ZWPDS) was completed in 2010/2011. The Scheme funded local governments for

preparation of Strategic Waste Management Plans (SWMP). The program captured over 94% of local governments in WA resulting in 122 local governments working collaboratively in 24 groupings and 12 local governments working independently, to develop SWMPs. From July 2007 until June 2011 almost \$2.1m in funding was provided to local governments under the program. The ZWPDS was followed up by the Regional Funding Program (RFP), a \$2.3m pilot program providing funding to local governments towards implementation of their SWMPs, which was completed during 2010/11.

The Western Australian Transitional E-Waste Program (WATEP) will run for up to three years or until a national e-waste product stewardship scheme is introduced. The funding allocated to WATEP is \$1.5 million for up to three years.

A state government working group has been formed to consider the development of guidelines and policy aimed at government leadership in the procurement of recycled construction and demolition materials for government construction activities.

Disposal

Under a three year agreement with WALGA, the Waste Authority subsidised the cost of recycling used oil collected through local government depots. During 2010/2011 the Authority contributed \$55,000 to local Household Hazardous Waste (HHW) program - in March 2011 \$10 million allocated over the life of a new four-year HHW program, The new program will focus on permanent collection facilities.

■ **South Australia**

Waste Strategy Reviewed:	South Australia 2011 - 2015 - Zero Waste South Australia
Context and Date	Published in 2011, for South Australia's Waste Strategy (2011-2015) to be a success, individuals and organisations need to value the vision of zero waste. This requires the on-going cooperation and support of existing stakeholders and engaging fully with the community on all levels to change waste management behaviour
Scope of Strategy	MSW, C&I, C&D
Waste Strategy Themes	<p><u>Waste Avoidance/ Zero Waste</u> The Strategy's long-term objectives are to avoid and reduce waste, and to maximise the useful life of materials through re-use and recycling.</p> <p>Strategy specifically mentions the following:</p> <ul style="list-style-type: none"> ■ <i>Our new Strategy maintains our original vision, but redirects the focus from recycling to reducing and avoiding waste towards sustainability.</i> ■ <i>The strategy will continue to increase the economic and social benefits of re-using resources</i> <p><u>Recycling / recovery</u></p> <ul style="list-style-type: none"> ■ Aim to maximise the useful life of materials through reuse and recycling ■ Shift the focus from disposing of a discarded product to promoting the cyclical use of materials ■ Develop new measurement tools to quantify reuse through market surveys and other research activities ■ Improve feedstock to the recycling market in order to maximise value of source separated systems <p><u>Energy from Waste</u> Zero Waste SA has helped expand the resource management and recycling industry, investing in financial incentives for infrastructure, market development and research and innovation. These expanded businesses and facilities within South Australia now serve industry by producing energy from waste</p> <p>A policy to continue to monitor energy recovery enterprises to ensure that viable options for higher-order beneficial uses are not circumvented</p> <p>Support, encourage and, where possible, demand landfill gas recovery for energy production</p> <p><u>Litter Recycling</u></p> <ul style="list-style-type: none"> ■ Implement litter reduction and public place recycling ■ Identify and maximise opportunities to increase awareness, link environmental values with reduced litter, illegal dumping and associated impacts <p><u>Other</u></p> <ul style="list-style-type: none"> ■ Support consumers to make informed purchasing choices

	<ul style="list-style-type: none"> ■ Develop and adopt innovative products and services that drive efficiency improvements to reduce the ecological footprint and create a comparative economic advantage <p>The Strategy also talks about the benefits of waste management in reducing GHG emissions - As well as reducing methane emissions from landfill, collecting and recycling materials can save greenhouse gas, energy and water. When a recovered material is used, it saves the energy and other inputs used to extract and refine a virgin resource.</p>
Targets	<p><u>Waste Avoidance/ Zero Waste</u> MSW, C&I</p> <p>Target in South Australia's Strategic Plan to reduce waste to landfill by 35% by 2020 and achieve the milestone of 25% by 2014.</p> <p>5% reduction in waste generation per capita by 2015</p> <p><u>Recycling / recovery</u> – no targets are mentioned.</p> <p><u>Diversion from Landfill</u> Numerical targets for waste diverted from landfill in municipal solid waste (MSW), commercial and industrial (C&I) and construction and demolition (C&D) waste streams are for metropolitan areas. Non-metropolitan areas to maximise diversion to extent practically achievable</p> <p>35% reduction in landfill disposal from 2002-03 level by 2020</p> <p>MSW - 60% by 2012– 70% diversion through improved collection, recycling processes and treatment by 2015 - Target achievability – high</p> <p>C&I - 75% diversion by 2015 - Target achievability - medium</p> <p>Construction and demolition - 90% diversion by 2015 - Target achievability - medium to high</p> <p><u>Energy from Waste</u> – no targets are mentioned.</p> <p><u>Litter Recycling</u> – no targets are mentioned.</p> <p><u>Other</u> Target state's greenhouse gas emissions to 108% of 1990 levels during 2008-12. This is a first step towards reducing emissions by 60% by 2050</p>
Development of the Waste Strategy?	<p>Key drivers for the Waste Strategy are:</p> <ul style="list-style-type: none"> ■ the waste management hierarchy ■ ecologically sustainable development

	<ul style="list-style-type: none"> ■ best practice methods and standards ■ policy development through open dialogue and consultation. <p>South Australia's directions will be influenced by the 2009 National Waste Policy: Less Waste, More Resources (National Waste Policy) from the Environment Protection and Heritage Council. This has a 10-year framework of priorities and principles, and tackling problems such as e-waste, hazardous materials, and product stewardship.</p> <p><i>"Cost is a main factor from the time waste is generated, to its value as a recyclable commodity, to final disposal."</i></p> <p><i>"South Australia's Waste Strategy 2011-2015 looks different from its predecessor. It builds on earlier good work, takes advantage of a stronger national focus, and recognises sustainability as an integral part of future prosperity. The Strategy is underpinned by long term objectives, thorough planning and targeted collaborations and partnerships."</i></p>
How are the targets monitored and reported?	<p>Numerical targets are set for metropolitan areas – these represent a stretch target for many metropolitan councils</p> <p>For non-metropolitan areas where conditions vary greatly, targets may need to differ. Challenges here include location, distance, population base, and community expectations, quantities that can be collected for recycling and local relationships. So these targets are defined as intentions. For example <i>'Maximise diversion to the extent practically achievable'</i></p> <p><i>"In setting targets for each sector, (MSW, C&I and C&D waste streams), we have worked from limited information to make estimates. As landfill operators need only report figures for aggregated waste, not for each sector, exact amounts were not available as baselines. In the future this will be changed by measuring waste (tonnes) to landfill by waste stream (MSW, C&I, C&D)"</i></p> <p>SA has set itself a target to <i>"develop new measurement tools to quantify reuse through market surveys and other research activities"</i></p> <p><i>"South Australia is developing a new way to measure outcomes as they relate to greenhouse gas emissions, water and ecological footprint."</i></p> <p><i>"South Australia is planning to develop models that give feedback on individual and system performance."</i></p>
How are the schemes implemented?	<p>The following measures will be introduced:</p> <p><i>Building waste data and knowledge</i></p> <ul style="list-style-type: none"> ■ <i>Implement Zero Waste SA's environmental data and knowledge management and reporting system</i> ■ <i>Measure waste (tonnes) to landfill by waste stream (MSW, C&I, C&D)</i> ■ <i>Capture and report local government, industry and business experiences in the form of case studies for use by others</i> ■ <i>Develop accreditation schemes that allow businesses and organisations to be recognised for their effort</i> ■ <i>Develop new measurement tools to quantify reuse through market surveys and other research activities</i> ■ <i>Monitor industry investment, cost savings, jobs growth, change in perceptions and importance of environmental issues</i> ■ <i>Measure outcomes as they relate to greenhouse gas emissions, water and ecological footprint</i> ■ <i>Develop models that give feedback on individual and system performance</i>

	<p>MSW Target – 60% landfill by 2012</p> <ul style="list-style-type: none"> ■ Assist in development of regional waste management plans ■ Encourage reuse of materials or items through refurbishment ■ Education programmes (households) – Recycle Right ■ Reduce contamination ■ Guidelines for recycling from higher density urban living ■ Promote green purchasing ■ Schemes to assist purchasing decisions – i.e. star rating on products and leave packaging in store options. <p>C&I Target – 65% diversion by 2012, 75% by 2015.</p> <ul style="list-style-type: none"> ■ Identify chemical hazard reduction and related opportunities in government and business and identify business leaders who can assist with education and change ■ Work with economic development agencies to look at growing resource recovery sectors (e.g. e-waste sector) ■ Consistent with the waste management hierarchy, continue to monitor energy recovery enterprises to ensure that viable options for higher-order beneficial uses are not circumvented ■ Guidance for management of farm generated waste ■ Involve greater numbers of businesses, especially SME and retail sectors in work-based recycling and resource efficiency programs
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■ **Tasmania**

Waste Strategy Reviewed	The Tasmanian Waste and Resource Management Strategy (2009)
Context and Date	<p>2009</p> <p><i>The Tasmanian Waste and Resource Management Strategy has been developed to provide a framework to guide programs and initiatives to achieve improvement in waste and resource management, through enforcement, economic and legislative drivers, education and awareness, support and facilitation, improved services and facilitates and leading by example. The Strategy was developed following public consultation and a strategic planning process involving State and Local Government, industry and community stakeholders. The Strategy also places a strong emphasis on the importance of local solutions due to low economies of scale and the geographical distance from existing mainland and international markets for waste treatment and resource recovery.</i></p>
Scope of Strategy	<p>The Strategy covers 3 main waste types:</p> <ul style="list-style-type: none"> ■ Municipal Waste (which includes household waste); ■ Construction and demolition (C&D) ■ Commercial and industrial (C&I)
Waste Strategy Themes	<ul style="list-style-type: none"> ■ Waste Avoidance and Sustainable Consumption ■ Waste Minimisation and Resource Recovery ■ Improved Regulation and Management of Residual Waste ■ Data Collection and Management Systems ■ Reduction of Greenhouse Gas Emissions ■ Improved Partnership, coordination and planning
Targets	<p>The strategy does not specifically state any targets for waste reduction however it does state the following for greenhouse emissions:</p> <ul style="list-style-type: none"> ■ The State Government has committed to reducing the State's greenhouse gas emissions by 60% by 2050 from 1990 levels <p><u>One of the key objectives of the Strategy is to improve the data collection and management systems to allow meaningful, achievable and realistic targets to be set. The introduction section of the Strategy highlights the following: 'There are currently no complete datasets for the total amount of waste diverted from landfill through recycling, reuse or resource recovery'</u></p>
Development of the Waste Strategy?	<p>The <i>Tasmanian Waste and Resource Management Strategy</i> is developed and guided by the overarching framework of the Resource Management and Planning System (RMPS) which also provides the framework for Tasmania's environmental and planning legislation and policies. The cornerstone of the RMPS is the promotion of sustainable development requiring the effective integration of economic, social and environmental considerations in decision-making processes and strategic planning. The Strategy has been developed in the context of recent national and state policy developments in relation to climate change and sustainability, it also supports the Tasmania <i>Together</i> Goal 12 in achieving <i>Sustainable Management of our Natural Resources and aims to deliver the best outcome for all Tasmanians by promoting sustainable development.</i></p> <p>The Strategy is guided by the following principles::</p> <ul style="list-style-type: none"> ■ Waste management hierarchy ■ Environmental Stewardship from all Tasmanians. ■ Precautionary principle for the impacts of unknown activities ■ Life cycle principle for products – Product Stewardship. ■ Polluter pays and user pays

	The Strategy will be implemented by the Waste Advisory Committee who is responsible for developing a series of action plans and performance measures.
How are the targets monitored and reported?	<p><u>Although there are currently no targets established for the key thematic areas of the Strategy. The Strategy sets out a series of performance indicators for how they will monitor progress going forward.</u></p> <p><i>This Strategy provides a framework of key objectives for resource recovery and solid waste minimisation and management that were developed in consultation with stakeholders. To achieve each objective, strategic actions are listed for consideration and incorporation into stakeholder action plans and activities for waste and resource management and to guide each of the stakeholder groups in identifying resource recovery, waste minimisation and management priorities. Indicative performance measures are listed for each objective. These performance measures and others will be reviewed and put forward by the Waste Advisory Committee to be used to monitor success in achieving the objectives.</i></p> <p><u>Waste Avoidance and Sustainable Consumption</u></p> <ul style="list-style-type: none"> ▪ <i>Reduction in the amount of waste per capita produced in Tasmania (= amount going to landfill + amount diverted from landfill).</i> ▪ <i>Number, and take up, of waste avoidance programs/incentives.</i> <p><u>Waste Minimisation and Resource Recovery (extraction of useful material for a specific end use, such as recycling, reuse or energy generation)</u></p> <ul style="list-style-type: none"> ▪ <i>Increase in amount of waste diverted from landfill (see implementation section on how this will be achieved).</i> ▪ <i>Recycling rates for core recyclables - plastics, glass, paper and cardboard etc.</i> ▪ <i>Resource recovery rates</i> ▪ <i>% participation in resource recovery programs.</i> <p><u>Improved Regulation and Management of Residual Waste</u></p> <ul style="list-style-type: none"> ▪ <i>All Tasmanian landfills operating in accordance with the Landfill Sustainability Guide 2006.</i> ▪ <i>Implementation of the Controlled Waste Tracking System.</i> ▪ <i>Establishment of improved infrastructure for the management of controlled waste.</i> ▪ <i>Number of waste management improvement programs developed and implemented.</i> ▪ <i>Best practice guidelines produced for priority waste management areas.</i> <p><u>Data Collection and Management Systems</u></p> <ul style="list-style-type: none"> ▪ <i>Uptake of credible stakeholder endorsed data collection and management system(s).</i> ▪ <i>Data available to support the performance measures in the Strategy.</i> ▪ <i>Waste Advisory Committee sets targets by end 2012.</i> <p><u>Reduction of Greenhouse Gas Emissions (to be developed)</u></p> <ul style="list-style-type: none"> ▪ <i>Development of emission reduction plans and policies</i> ▪ <i>% participation in emission reduction schemes</i> ▪ <i>Reducing trend of greenhouse gas emissions from waste</i> ▪ <i>Increasing trend of diversion of organic waste from landfill</i> <p><u>Improved Partnership , coordination and planning</u></p> <ul style="list-style-type: none"> ▪ <i>Establishment and operation of the Waste Advisory Committee</i> ▪ <i>Development and implementation of Action Plans, developed by State Government and Local Government to deliver the Strategy</i> ▪ <i>Partnerships established in waste and resource management programs</i> ▪ <i>Annual reports produced by the Waste Advisory Committee detailing implementation of the Strategy.</i>
How are the schemes implemented?	The Strategy sets out the initial strategic actions for implementation. These will lead to the development of specific actions and targets for future waste strategies.

Waste Avoidance and Sustainable Consumption

- *Develop and deliver targeted **education and awareness programs** to promote informed and responsible **sustainable consumption behaviours and purchasing** decisions and ways to avoid waste.*
- *Adopt and practice sustainable consumption behaviours and green purchasing policies.*
- *Promote and facilitate **innovation in product design** and manufacture that encourages product longevity and waste avoidance.*
- *Develop and implement systems to encourage and provide **incentives for waste avoidance** in the broader community.*

Waste Minimisation and Resource Recovery

- *Develop and deliver educational programs, guidance and services to enable and promote waste minimisation, resource recovery and recycling.*
- *Develop policies and deliver services and programs which **stimulate investment in technologies**, facilities and systems to promote resource recovery and reduce the disposal of resources to landfill.*
- *Develop **economic and legislated instruments** to reduce waste generation and divert waste from landfill.*
- *Where appropriate, require industries and major new developments to develop Waste Minimisation and Resource Recovery Plans.*
- *Develop collaborative strategies with the **Construction & Demolition and Commercial & Industrial** sectors to reduce the amount of waste deposited to landfill from these sectors.*
- *Create and support **local markets for resource recovery** through implementation of appropriate purchasing practices.*
- *Undertake relevant market research to identify suitable opportunities for local development (e.g. alternative treatment technologies) and improvement/extension of existing services and facilities.*
- *Participate in the National Packaging Covenant (NPC) in the reduction of excess packaging.*
- *Participate in and support the development of Extended Producer Responsibility and Product Stewardship programs.*

Improved Regulation and Management of Residual Waste

- *Identify priority areas for improved waste management practices*
- *Develop and implement waste-specific, industry-specific, and/or region-specific guidelines, policies, strategies and action plans to employ best practice management practices for residual wastes.*
- *Facilitate the development of infrastructure and best practice facilities to meet Tasmania's waste & resource management needs.*
- *Strengthen regulatory systems and employ improved mechanisms to identify and appropriately investigate non-compliant waste practices.*
- *Employ best practice waste management for all activities*
- *Proactively engage industry and improve **regulatory systems** to improve waste management standards*
- *Reward businesses committed to sustainable resource management and improved environmental outcomes*
- *Support and facilitate range of national programs for waste such as the **Product Stewardship** Arrangements for Waste Oil and for End-of-Life Tyres.*

Data Collection and Management Systems

- *Provide recommendations for a coordinated approach & systems for **data collection** and management, setting targets, measuring performance & public reporting*
- *Establish a coordinated approach & implement systems for data collection and management, setting targets, measuring performance & public reporting.*
- *Facilitate and regulate relevant data collection from industry.*
- *Review data after a 3-year collection cycle and establish a timeline for target setting and development of performance measures in consultation with stakeholders.*
- *Continue to participate in and support national data collection systems and use results for waste and resource management*

	<p><i>planning.</i></p> <p><u>Reduction of Greenhouse Gas Emissions</u></p> <ul style="list-style-type: none"> ▪ <i>Develop, participate in and support national, State and local schemes and programs that lead to a reduction in greenhouse gas emissions through improved waste management and enhance resource recovery.</i> ▪ <i>Review and amend procurement policies to ensure waste reduction and climate change considerations are incorporated into purchasing decisions</i> ▪ <i>Review waste management practices that generate greenhouse gas emissions and develop waste minimisation and management plans to reduce emissions. In 2011 the Tasmanian government released Tasmania's Action Plan to reduce Emissions, the plan has 6 priority action areas ranging from targeting the county's biggest emitters to improving building energy</i> ▪ <i>Increase the diversion of organic (green) waste from landfill and develop policies for alternative management of organic wastes</i> <p><u>Improved Partnership, coordination and planning</u></p> <ul style="list-style-type: none"> ▪ <i>Establish a Waste Advisory Committee in accordance with the Terms of Reference in this Strategy.</i> ▪ <i>Investigate options for, and make recommendations with respect to suitable funding mechanism(s) to deliver the Strategy and supporting programs and initiatives.</i> ▪ <i>Establish funding mechanism(s) to deliver the Strategy and supporting programs and initiatives.</i> ▪ <i>Develop working partnerships between State Government, Local Government, regional waste groups, industry and the community to improve coordination of programs and in delivery of the Strategy.</i> ▪ <i>Provide recommendations for an education plan to outline and target the specific education needs, communication strategies and desired outcomes of each sector in delivering this Strategy.</i> ▪ <i>Identify priorities and provide guidance on the develop of Action Plans to all stakeholders</i> ▪ <i>Establish resource sharing arrangements and coordination of an integrated network of resource recovery, waste transfer, treatment and disposal services between regions.</i> ▪ <i>Develop strategies to address the needs and requirements for new and growing industries and investment and to facilitate improved waste and resource management options.</i> ▪ <i>Develop and implement Action Plans to deliver the Strategy State Government, Local Government</i> ▪ <i>Review progress in implementing this Strategy on an agreed, timeframe and publish Annual Reports.</i> ▪ <i>Conduct a full review of the Strategy after 3 years (Not yet reviewed)</i>
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■ **Australian Capital Territory**

Waste Strategy Reviewed:	Australian Capital Territory (ACT) Waste Management Strategy – Towards a Sustainable Canberra
Context and Date	Released in 2011 the goal of the ACT Waste Management Strategy 2011–2025 is to ensure that the ACT leads innovation to achieve full resource recovery and a carbon neutral waste sector. The Strategy sets a clear direction for the management of waste in the ACT towards 2025, building on the success of the No Waste by 2010 Strategy, released in 1996, that successfully reduced the waste sent to landfill from nearly 60% of total waste in 1995–96 to below 30% by 2003–04. The Strategy has been finalised following the release of a draft strategy in December 2010 and a subsequent public and industry consultation process conducted in early 2011.
Scope of Strategy	<p>The Strategy covers 4 main waste types (which have associated targets):</p> <ul style="list-style-type: none"> ■ <u>Household</u> – collected by government funded kerbside collection services, in 2010-11 61,000 tonnes from ACT households and 8,000 tonnes from Queanbeyan households was landfilled. The contents of the bins constitute 40-50% organic, 10-20% readily recyclable materials, 20-30% low value materials with a high energy content and the remainder material that will be landfilled ■ <u>Commercial</u> – this includes government agencies, retailers, businesses, offices and restaurants, bins constitute 30-40% readily recyclable material, 10-20% organic waste such as food, 240-50% low value material with high energy content and a small proportion of landfilled material. Businesses are responsible for their own collections. Increased uptake of the ACTSmart Business and ACTSmart Office recycling programs along with the construction and operation of a new mixed-commercial waste Material Recovery Facility (Commercial MRF) from 2014 is hoped to increase recycling rates ■ <u>Construction and demolition sectors</u> - the waste stream consists of a diverse set of resources including timber, concrete, asphalt and dirt. Over the last decade several Material Recovery Facilities (MRFs) have been built that specialise in sorting construction and demolition waste. This technology and the deterrent of high landfill prices has meant that ACT is now diverting over 85% of the construction and demolition waste stream. However, demand for recovered wood has not matched production in recent years leading to a significant increase in stockpiling and landfilling. ■ <u>Biomass from wood and garden waste</u>.- Garden waste includes prunings, leaves and grass clippings from household gardens and parks, 90% of garden waste diverted from landfill. Currently wood waste mulched however age profile of forest means an increase in tree planting and greater quantities of wood waste. Wood could potential be used to generate renewable energy where higher value users are not available. ■ <u>Biosolids</u> – by-product of sewage treatment, currently managed by ActewAGL but is an organic resource with potential synergies with the ACT waste management system <p>The strategy also mentions the management of hazardous waste.</p>
Waste Strategy Themes	<p>The goal of the ACT Waste Management Strategy 2011–2025 is to ensure that the ACT leads innovation to achieve full resource recovery and a carbon neutral waste sector. This goal is supported by four key outcomes and identifies 29 schemes that will enable the achievement of the outcomes. The objectives are:</p> <ul style="list-style-type: none"> ■ Outcome 1: less waste generated ■ Outcome 2: full resource recovery ■ Outcome 3: a clean environment ■ Outcome 4: a carbon neutral waste sector <p>The Strategy looks to relive pressure on raw materials, reduce GHG and ensure Canberra remains a clean and safe place to live (reduce litter and better hazardous waste management).</p> <p>The Strategy also discusses technologies for creating energy from waste and contributing towards the renewable base load.</p>

	<p>The waste hierarchy is an important principle in the ACT Strategy as well as the need for waste to play a part in reducing greenhouse gas emissions.</p>
<p>Targets</p>	<p>The overall goal of the strategy is to ensure that the ACT leads innovation to achieve full resource recovery and a carbon neutral waste sector.</p> <p><u>Waste Avoidance/Zero Waste</u></p> <ul style="list-style-type: none"> ■ The growth in ACT waste generation is less than the rate of population growth. ■ Reuse of goods expanded in the ACT. <p><u>Recycling/recovery</u></p> <ul style="list-style-type: none"> ■ The rate of resource recovery for waste combined increases: <ul style="list-style-type: none"> ■ over 80% by 2015. ■ over 85% by 2020. ■ over 90% by 2025. <p><u>Energy from Waste</u> - no targets are mentioned</p> <p><u>A Clean Environment (Litter recycling)</u></p> <ul style="list-style-type: none"> ■ ACT to lead Australia in lower litter and incidents of illegal dumping. ■ ACT's natural resources are protected and, where feasible, enhanced through waste management. <p><u>Carbon Neutral Waste Sector</u></p> <ul style="list-style-type: none"> ■ The ACT Waste Sector will be carbon neutral by 2020: <ul style="list-style-type: none"> ■ energy generated from waste doubling by 2020; ■ Increased waste resources are recovered for carbon sequestration by 2020. <p><u>Other</u></p> <p>Climate Change Targets - Climate Change and Greenhouse Gas Reduction Act 2010 zero net greenhouse gas emissions by 2060; • 80% below 1990 levels by 2050; and • 40% below 1990 levels by 2020. ACT acknowledges that waste has an important part to play in this through generating energy from waste to displace energy from fossil fuels.</p>
<p>Development of the Waste Strategy?</p>	<p>The waste hierarchy remains an important principle for waste management in the ACT and is embedded in ACT waste legislation. This ensures that the ACT's waste management strategy presents a holistic waste management system approach from the initial generation of waste through to its ultimate disposal with opportunities to reduce waste at each step of the hierarchy. Technology in waste management has evolved since the 1990s when the No Waste by 2010 Strategy was first developed. New waste sorting and processing facilities provide more cost effective ways of achieving resource recovery and greenhouse gas abatement.</p> <p>New technologies for creating energy from waste (or bioenergy) can produce safe renewable base-load power for approximately 6% of the ACT's needs (as of 2010). Innovative bioenergy technologies also offer the potential to manufacture valuable products such as biochar or liquid fuels from wood, biosolids and other materials the ACT currently underutilises or inters in landfill.</p>
<p>How are the targets monitored and reported?</p>	<p><u>Waste Avoidance</u></p> <p>Annual Resource Recovery Surveys in conjunction with data collected from weigh bridges at the Resource Management Centre. The rate of waste generation will be compared to population growth annually. Strategies that promote waste avoidance, such as awareness raising campaigns, and product reuse through second hand businesses and charities will also be monitored to evaluate the effectiveness of these strategies.</p>

Recycling/recovery

Resource recovery surveys and audits of waste composition will be maintained and updated as required to provide ongoing reporting and analysis of trends in waste to landfill and resource recovery rates. Individual programs will also be monitored to identify the contribution that different strategies are making to increase the rate of resource recovery and reduce waste to landfill. For example ACT Smart Office and Business programs will collect information on the volume of waste their participants divert from landfill to recycling.

A Clean Environment

Littering rates will be monitored through the National Litter Index. The National Litter Index is published by Keep Australia Beautiful as a part of an ongoing assessment of litter volumes and numbers of items across a range of sites to inform the general public about the trends in litter at key locations. The audits of litter are undertaken twice a year in May and November and are reported on a financial year basis. The 2009–10 National Litter Index counts covered 76 sites across the ACT. Illegal dumping incidents will be reported calling Canberra Connect and as well as being monitored through the National Litter index. Landfill leachate quality will be monitored to ensure risks from heavy metals and nutrients are being appropriately managed.

Carbon Neutral Waste Sector

Energy generated from landfill gas and new bio-energy facilities will be monitored and reported each year. Greenhouse gas emissions from the ACT Waste Sector will be monitored as part of the annual ACT Greenhouse Gas Inventory. The ACT Government commissions an ACT specific greenhouse gas inventory to provide comprehensive information on the major emission sources. Emissions for the ACT are broken down into sectors —electricity, natural gas, transport, land use and land use change, waste, and miscellaneous. The ACT Greenhouse Gas Inventory is used to inform the ACT on how it is tracking against greenhouse gas reduction targets. The Inventory includes the Scope 2 emissions (a state-wide average calculated by DCCEE that reflects the emissions intensity of the mix of technologies used to generate the electricity consumed in each state and territory) related to energy generated outside the ACT but consumed in the ACT. The emissions avoided by generating energy from waste will be counted towards the achievement of a carbon neutral waste sector.

The ACT Waste Management Strategy will be reviewed every three to five years to measure progress and ensure that the strategies remain current. The review will be informed by monitoring against targets as outlined above and will identify:

- infrastructure investment for further diversion of wastes from landfill;
- modifications to actions such as program delivery and education and awareness raising; and
- progress in national waste issues, including national stewardship program for e-waste.

How are the schemes implemented?

Waste Avoidance

- Awareness, education and action – promote more sustainable living. This Strategy aims to integrate complementary education, training and initiatives targeting industry and households, as well as within schools and training institutes. For example the Australian Sustainable Schools Initiative (AuSSI) works to encourage all ACT schools to manage waste, water and energy sustainably. As part of its education service the Territory and Municipal Services Directorate (TaMS) maintain a campaign on household recycling. TaMS also run educational tours through the Materials Recovery Facility at Hume, which engages with 8,000 to 10,000 visitors a year, to show the community the effects of waste on their immediate environment
- Support for community gardens and home composting. – through a 'one stop shop' to facilitate the granting of community garden licenses and the development of a Site Selection Criteria which requires the requester to take into account development codes and undertake community consultation
- Ban single-use plastic shopping bags. - The Plastic Shopping Bags Ban Act 2010 came into effect on 1 July 2011 and from 1 November 2011 bans the distribution and use of polyethylene bags of 35 microns or less.
- Reduced packaging waste. – ACT signatory of the Australian Packaging Covenant.
- Promote reuse through ACT businesses and charities.
- Promote reuse through bulky waste collection service – ACT undertook a trial bulky waste collection service. The trial commenced across Canberra in April 2011 and will run for 12 months, following which an evaluation will be undertaken to determine the effectiveness of the program.
- Encourage on-site reuse for construction & demolition waste - The ACT will consult with facility providers and the construction industry to explore options for temporary construction and demolition facilities within new development areas.

Recycling/recovery

- Boost commercial waste recycling – ACT are to develop a commercial MRF in 2014.
- Recover organic and residual waste resources – potential to develop a residual-waste MRF however decision delayed until the commercial MRF has been running for 12-14 months.
- Develop markets for organic and residual waste resources.
- Provide free drop-off facilities for electronic waste. The ACT became the first jurisdiction to divert all computers and televisions
- units from landfill by introducing mandatory recycling for televisions in 2010, complementing the mandatory recycling for computers introduced in 2005. This is presently a user-pays system. The Commonwealth's Product Stewardship Act 2011 came into effect in August 2011. Regulations for the television and computer product stewardship scheme were passed in late 2011. This scheme is expected to provide at least two free drop-off sites in the ACT, by the end of 2012.
- Promote education and active recycling. - The Territory is presently working towards this via a number of programs, including the Australian Sustainable Schools Initiative (AuSSI), and educational programs such as the ACTSmart Business and ACTSmart Office program, as well as through ACT NOWaste.
- Government procurement - The ACT Government's Sustainability Policy 2009, People, Place, Prosperity11, includes principles for sustainable procurement to be incorporated into the ACT's procurement processes.
- Public place recycling – ACT is trialling public recycling. Following the initial trial, that will commence by the end of 2011, the program will be evaluated to determine the effectiveness of the program and options for its continued operation.
- Public event recycling.
- Develop markets for recyclable materials and strengthen regional connections
- Disincentives to landfill including appropriate pricing and regulation.
- Product Stewardship schemes – TV and computers focus for now.

A Clean Environment

- Reduce litter and dumping through laws and raising awareness - The Litter Act 2004 (ACT) aims to enhance the natural and built environment. Littering of any kind is illegal under the Act. If the rubbish contains hazardous waste, it is also an offence

under the Dangerous Substances Act 2004. penalty range from \$1,000 to \$200,00.

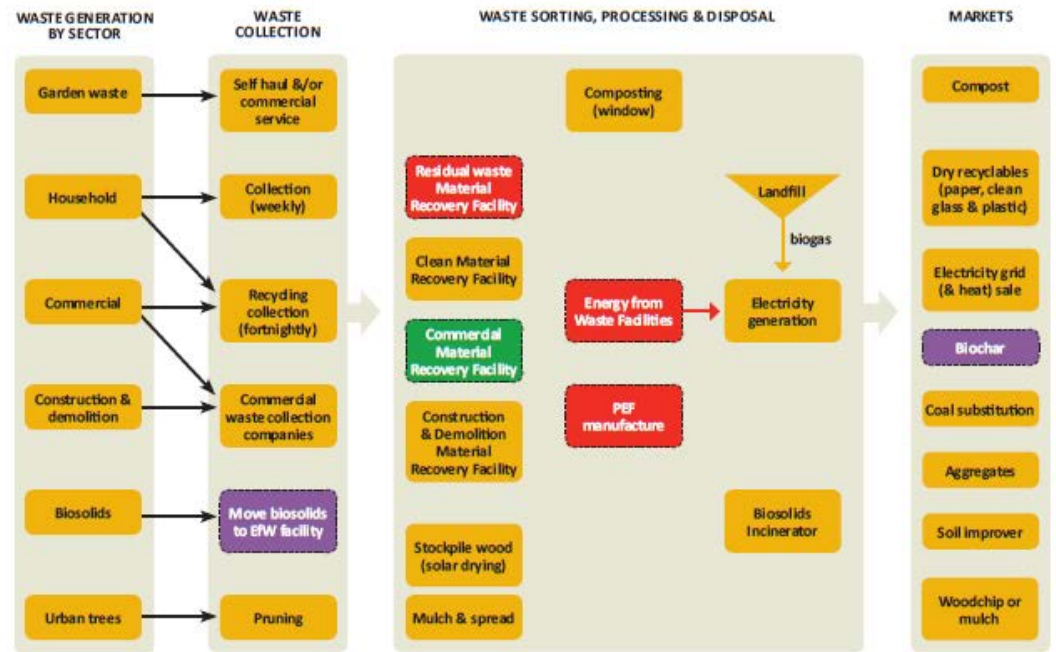
- National approaches to litter management. - ACT participates in the National Litter Index conducted by Keep Australia Beautiful12.
- Development of the Hume Resource Recovery Estate.
- Maintain a safe and environmentally responsible landfill to meet the ACT's future needs.
- Manage hazardous waste.
- Increase soil reuse and rehabilitation - the government will seek to have temporary soil and construction and demolition material exchange sites established to allow the efficient reuse of these materials were possible without excessive transport or transaction costs. Review waste operations and urban planning requirements for multiunit dwellings.

Carbon Neutral Waste Sector

- Methane capture from landfill - Methane captured from both the Mugga Lane landfill and the West Belconnen facility generates more than 28,000 megawatt hours a year of renewable energy13, sufficient to power nearly 3,300 homes.
- Minimise organic waste to landfill – introduction of a commercial MRF facility, potential energy from waste or development of a residual MRF
- Expand bio-energy generation and investigate new energy from- waste technologies to generate energy - The government will continue to investigate the costs and benefits associated with developing markets for waste streams. ACT have investigated the use of 'biochar' supporting the Fenner School of Environment and Society at the Australian national University to use 'biochar' in glass-house pot trials.

- Increase recycling to avoid greenhouse gas emissions.
- Ensure energy efficient waste collection and transport solutions.

The ACT's waste management systems with potential options for greater resource recovery is provided at right:



Legend: Yellow boxes represent existing waste services, facilities and markets. Dashed boxes represent new waste options.

■ **New Zealand**

Waste Strategy Reviewed:	The New Zealand Waste Strategy: (2010)
Context and Date	<p>Revised in 2010 after an internal review</p> <p>The goals of the NZ Waste Strategy are to 'reduce the harmful effects of waste' and to 'improve the efficiency of resource use'.</p>
Scope of Strategy	<p>The strategy sits within a legislative frame including the Waste Minimisation Act. Waste is defined by the Waste Minimisation Act 2008 to:</p> <ul style="list-style-type: none"> a. mean anything disposed of or discarded; and b. include a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and c. to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded. <p>The focus of the strategy is on solid waste but this extends to residues from wastewater treatment.</p>
Waste Strategy Themes	<p>The strategy looks to focus on harm as a result of waste and areas where there is a negative economic impact due to inefficient use of resources. In contrast to the NZ Waste Strategy 2002 there is a move away from targets to setting high level objectives that are to be interpreted by local government who may choose to set targets accordingly. The 2010 Strategy comments that "<i>While the 'zero waste' vision of the 2002 Strategy was ambitious, many of its targets were unable to be measured or achieved. The revised Strategy enables a more flexible approach to waste management and minimisation through two high level goals: reducing harm and improving efficiency</i>".</p> <p>The strategy sets out priorities while tools are provided by the Waste Minimisation Act 2008 and a range of legislation cover waste related issues (Resource Management Act 1991, Hazardous Substances and New Organisms Act 1996, Local Government Act 2002 and Climate Change Response Act 2002.)</p> <p>The focus of the Waste Minimisation Act 2008 is on Product Stewardship and funding of new waste minimisation initiatives via the Waste Minimisation Fund (money collected via a NZ\$10/tonne levy on disposal).</p> <p><u>Product Stewardship</u></p> <p>The purpose of product stewardship as set out in the Waste Minimisation Act is to encourage people and organisations involved in the life of a product to share responsibility for:</p> <ul style="list-style-type: none"> ensuring effective reduction, reuse, recycling or recovery of products managing environmental harm arising from the product when it becomes waste. <p>Product stewardship schemes are initiatives that help reduce the environmental impact of manufactured products. When a product stewardship scheme is introduced, anyone involved in the product's life cycle, such as producers, brand owners, importers, retailers and consumers, accepts responsibility for the environmental effects of that product.</p> <p>The Act provides a regulatory framework for establishing and accrediting product stewardship schemes. At this time, product stewardship schemes are voluntary, but priority products may be regulated to ensure producers and others in the supply chain share responsibility for end-of-life products.</p>

Targets	<p>The strategy looks to focus on harm as a result of waste and areas where there is a negative economic impact due to inefficient use of resources. In contrast to the NZ Waste Strategy 2002 there is a move away from targets to setting high level objectives that are to be interpreted by local government who may choose to set targets accordingly.</p> <p>There are no targets in the NZ Waste Strategy 2010.</p> <p><u>Waste disposal levy and Waste Minimisation Fund</u></p> <p>From 1 July 2009, the Waste Minimisation Act introduced a waste disposal levy of \$10 per tonne (plus GST) on all waste disposed of at disposal facilities. The purpose of this levy is to:</p> <ul style="list-style-type: none"> ■ raise revenue to promote and achieve waste minimisation ■ recognise the cost of waste disposal on the environment, society and the economy by increasing the cost of waste disposal. <p>Fifty per cent of the funds raised by the levy go directly to territorial authorities. This allocation is calculated on a population basis. Payments are made quarterly and must be spent only to promote or achieve waste minimisation and in accordance with each territorial authority's WMMP. The other fifty per cent of the funds raised by the levy money (minus administration costs) forms the Waste Minimisation Fund, which was set up to boost New Zealand's performance in waste minimisation through:</p> <ul style="list-style-type: none"> ■ investment in infrastructure and systems for waste minimisation ■ building educational and promotional capacity. <p>The Fund will help fund waste minimisation projects that increase resource efficiency, increase reuse, recovery and recycling, and decrease waste disposed of at disposal facilities. The Minister for the Environment sets the criteria for the Fund and makes the final decisions about which projects receive funding.</p>
Development of the Waste Strategy?	<p>The New Zealand Waste Strategy (2002) was developed follow extensive consultation with industry and local government stakeholders. The Strategy had aspirational target (Towards Zero Waste) and a mix of qualitative and quantitative targets intended to drive activity towards reducing waste to landfill. With a change in government, significant progress against a number of the targets and issues identified with a number of other targets the strategy was reviewed within 2009/10. The resulting NZ Waste Strategy 2010 moved from a target to goal based approach leaving the setting of targets and development of Action Plan(s) to industry and local government.</p> <p>As noted above waste management in NZ is covered by a range of legislation (see figure from the NZ Waste Strategy 2010 below) and the Strategy is intended to provide high level policy direction to guide the use of these tools.</p> <p>Policy drivers for action on waste include:</p> <ul style="list-style-type: none"> ■ Minimising environmental harm (through the Resource Management Act 1991 and Hazardous Substances and New Organisms Act 1996) ■ Addressing climate change impacts of waste disposal (the the Climate Change Response Act 2002) ■ Maximising Resource Efficiency/best use of resources (through the Waste Minimisation Act 2008) ■ Ensuring appropriate service provision (through the Local Government Act 2002)

	<p>The toolkit for managing and minimising waste in New Zealand</p> <p>New Zealand Waste Strategy</p> <p>Legislative framework</p> <table border="1"> <thead> <tr> <th>Waste Minimisation Act 2008</th> <th>Local Government Act 2002</th> <th>Hazardous Substances and New Organisms Act 1996</th> <th>Climate Change Response Act 2002</th> <th>Resource Management Act 1991</th> <th>Other tools</th> </tr> </thead> <tbody> <tr> <td>Waste minimisation and management plans</td> <td>By-laws</td> <td>Regulations and group standards related to waste</td> <td>Disposal facility regulations</td> <td>National environmental standards</td> <td>International conventions</td> </tr> <tr> <td>Waste disposal levy</td> <td>Long-term council community plans</td> <td></td> <td></td> <td>District and regional plans and resource consents</td> <td>Ministry guidelines, codes of practice, and voluntary initiatives</td> </tr> <tr> <td>Waste Minimisation Fund</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Product stewardship</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other regulations</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Waste Minimisation Act 2008	Local Government Act 2002	Hazardous Substances and New Organisms Act 1996	Climate Change Response Act 2002	Resource Management Act 1991	Other tools	Waste minimisation and management plans	By-laws	Regulations and group standards related to waste	Disposal facility regulations	National environmental standards	International conventions	Waste disposal levy	Long-term council community plans			District and regional plans and resource consents	Ministry guidelines, codes of practice, and voluntary initiatives	Waste Minimisation Fund						Product stewardship						Other regulations					
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<p>How are the targets monitored and reported?</p>	<p>There are no targets in the NZ Waste Strategy 2010. The NZ Ministry for the Environment (owner of the Strategy) does have an environmental reporting programme in place comprising 5 yearly State of the Environment Report, a set of environmental indicators (incl composition and quantity of waste disposed of to landfill) and ad hoc environmental report cards.</p>																																				
<p>How are the schemes implemented?</p>	<p>Product Stewardship</p> <p>Voluntary product stewardship schemes can be accredited under the Waste Minimisation Act. If the Minister for the Environment declares a product to be a priority product, a product stewardship scheme must be developed and accredited. In March 2009, the Ministry for the Environment released a discussion paper for public consultation including requesting feedback on potential priority products for product stewardship schemes. This has yet to result in any priority products being declared.</p> <p>A number of voluntary schemes have been accredited. These are:</p> <ul style="list-style-type: none"> Holcim Geocycle (used oil) Glass Packaging Scheme (glass) Plasback (agricultural plastics – wrap and twine) Refrigerants Recovery Agrecovery Rural Recycling Programme (Agrichemicals and agricultural plastic containers) 																																				

Paintwise (waste paint)
ROSE NZ (used oil)

Waste levy and Waste minimisation fund

The waste levy of \$10/tonne applies to waste disposed to a waste disposal facility accepting household waste. The Minister for the Environment has completed the first review the effectiveness of the levy. As a result of the review, the Government is not considering any changes to the rate of the waste disposal levy at this time.

Half of the total money generated by the levy goes to local authorities (who have responsibility for planning for waste management activities on an operational level), on a per head of population basis, to assist them with minimising waste in their area. The remaining levy money (minus administration costs) is put into a waste minimisation fund, to fund waste minimisation activities around New Zealand.

The helps fund waste minimisation projects. The purpose of the Waste Minimisation Fund (WMF) is to “increase resource efficiency, increase reuse, recovery and recycling, and decrease waste to landfill”. The Minister for the Environment has set criteria for the Waste Minimisation Fund. Only projects which promote or achieve waste minimisation, including the reduction of waste and the reuse, recycling and recovery of waste and diverted material will be eligible.

Eligibility and assessment criteria are provided on the Ministry for the Environment website and are reproduced below.

Eligibility – Waste Minimisation Projects

1. Only waste minimisation projects are eligible for funding. Projects must promote or achieve waste minimisation. Waste minimisation covers the reduction of waste and the reuse, recycling and recovery of waste and diverted material. The scope of the fund includes educational projects that promote waste minimisation activity.
2. Projects must result in new waste minimisation activity, either by implementing new initiatives or a significant expansion in the scope or coverage of existing activities.
3. Funding is not for the ongoing financial support of existing activities, nor is it for the running costs of the existing activities of organisations, individuals, councils or firms.
4. Projects should be for a discrete timeframe of up to three years, after which the project objectives will have been achieved and, where appropriate, the initiative will become self-funding.
5. Funding can be for operational or capital expenditure required to undertake a project.
6. For projects where alternative, more suitable, Government funding streams are available (such as the Contaminated Sites Remediation Fund, or research funding from the Foundation for Research, Science and Technology), applicants should apply to these funding sources before applying to the Waste Minimisation Fund.
7. The applicant must be a legal entity.
8. The fund will not cover the entire cost of the project. Applicants will need part funding from other sources.
9. The minimum grant for feasibility studies will be \$10,000.00. The minimum grant for other projects will be \$50,000.00.

Assessment Criteria

Project Benefits

1. Preference will be given to projects that collectively give the largest net benefit over time. The assessment of the effectiveness of projects will include the extent to which the projects can demonstrate:
 - o likelihood of success;
 - o reduction of harm to the environment;
 - o reduction in the volume of waste disposed of;
 - o economic, environmental, social or cultural benefits;

	<ul style="list-style-type: none">○ longer term benefits after the completion of the project.2. Projects will be assessed for their strategic value in achieving the purpose of the fund. Strategic value means the likely ability of projects to act as catalysts that enhance and extend the uptake of waste minimisation.3. The degree of partnership and cross-sectoral collaboration will be taken into account in assessing the strategic value of proposals.4. The level of funding from other sources will be taken into account. Shared funding is preferred. <p>Project Delivery</p> <ul style="list-style-type: none">5. The applicant must demonstrate:<ul style="list-style-type: none">○ ability to deliver the project;○ how the project will achieve its goals;○ how the effectiveness of the project will be monitored, evaluated and reported;○ if and how the project will be used to promote waste minimisation to the wider public;○ if and how the project will continue after funding ends and become self-sustaining, particularly if the funding is for the establishment phase of a longer term project.
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Europe

■ England

Waste Strategy Reviewed:	Government Review of Waste Policy in England 2011
Context and Date	<p>The review of Waste Policy document contains actions and commitments, not only of government but of other key actors, which together set a clear direction towards a zero waste economy. These actions will form the implementation plan for waste policies in the Waste Review.</p> <p>There is a clear focus on the need to move beyond the current throwaway society to a “zero waste economy” in which material resources are re-used, recycled or recovered wherever possible, and only disposed of as the option of very last resort.</p> <p>The review and waste strategy is driven by the Waste Hierarchy and a key aim is to decouple economic growth and waste. An overarching focus of the strategy is localism and the big society. This aims to empower local communities as part of a power shift away from central government, reinvigorating local democracy, understanding, accountability, and participation. Waste and resource use is a key area where some of the best initiatives exist to build on, such as the role charity sector organisations often play in ensuring clothing or bulky items like furniture are reused rather than thrown away.</p> <p>The strategy makes a clear link between waste policy and climate change and energy policy, where they need to be clear about the potential contribution of energy from waste to the UK’s target that, by 2020, 15% of energy will come from renewable sources.</p>
Scope of Strategy [waste groups included in the Strategy]	All waste streams are covered, with a particular focus on biodegradable waste and food waste.
Waste Strategy Themes [Include comments on waste types, Waste Avoidance, Recycling or recovery, Diversion from Landfill, Energy from Waste, Litter Reduction/Reduction in illegal dumping, Other targets (community involvement/ community benefits/carbon)]	<p>The Strategy is set out in the following key areas:</p> <ul style="list-style-type: none"> ■ Sustainable use of materials and waste prevention; ■ Regulation and Enforcement; ■ Empowering local communities; ■ Food waste; ■ Energy Recovery; ■ Landfill; ■ Infrastructure and planning; <p>These sections set out a number of key principles and actions, namely:</p> <p><u>Waste Avoidance/ Zero Waste</u></p> <ul style="list-style-type: none"> ■ Develop a range of measures to encourage waste prevention and reuse, supporting greater resource efficiency. <p><u>Recycling/recovery</u></p> <ul style="list-style-type: none"> ■ Support councils and the waste industry in improving the collection of waste from smaller businesses ■ Develop voluntary approaches to cutting waste, increasing recycling and improving the quality of recycle material ■ Work with councils to increase the frequency and quality of rubbish collections and make it easier to recycle ■ Consult on the case for higher packaging recovery targets for some key materials.

	<p><u>Diversion from Landfill</u></p> <ul style="list-style-type: none"> ■ Consult on a wood waste landfill restriction and the case for other material landfill restrictions. Focus specifically on textiles and biodegradable waste ■ Landfill should be the last resort for most waste, and particularly for biodegradable waste. The landfill tax – with increases maintained towards a floor of £80 per tonne in 2014/15 – will remain the key driver to divert waste from landfill. <p><u>Energy from Waste (EfW)</u></p> <ul style="list-style-type: none"> ■ Support energy from waste where waste cannot be recycled ■ Work to increase the energy from waste provided by Anaerobic Digestion e.g. for food waste. ■ Publish an EfW guidance document, and capture more methane from landfill. ■ England's aim is to get the most energy out of genuinely residual waste, not to get the most waste into energy recovery. <p><u>Litter Recycling</u></p> <ul style="list-style-type: none"> ■ Protect civil liberties by stopping councils from criminalising householders for trivial bin offences whilst ensuring that stronger powers existing for tackling fly tipping. ■ WRAP (Waste and Resources Action Programme) will support councils who want to work with local businesses to explore how the necessary street infrastructure can be funded to allow 'recycling on the go' to be developed. ■ A drive to bring anti-littering and tidy-up messages and recycling on the go messages together under the same banner. <p><u>Carbon</u></p> <ul style="list-style-type: none"> ■ Prioritise efforts to manage waste in line with the waste hierarchy and reduce the carbon impact of waste. ■ Target waste streams with high carbon impact in terms of embedded carbon (e.g. plastics, food and metal) and direct emissions from landfill (food, paper, card and textiles). ■ Promote resource efficient design, promote life cycle thinking and promote the measurement of waste management in carbon terms. <p><u>Other</u></p> <ul style="list-style-type: none"> ■ Support initiatives which reward and recognise people who do the right thing to reduce, reuse and recycle waste. ■ Reduce the burden of regulation and enforcement on legitimate business but target those who persistently break the law.
Targets	<p>There are 2 key targets central to UK delivery of two key waste targets in 2020 set by EU Directives;</p> <ul style="list-style-type: none"> ■ Landfill Directive requires us to divert biodegradable municipal waste from landfill ■ Revised Waste Framework Directive sets a 50% recycling target for waste from households. <p><u>Waste Avoidance/ Zero Waste</u></p> <p>No specific targets are mentioned.</p> <p><u>Recycling or recovery</u></p> <p>The Strategy aims to increase the percentage of waste collected from both households and businesses which is recycled, and at the very least meet the revised waste framework directive target to recycle 50% of waste from households by 2020.</p>

	<p><u>Diversion from Landfill</u> Continuing to drive waste away from landfill and ensuring that the UK meets the EU Landfill Directive targets for diverting biodegradable municipal waste from landfill in 2013 and 2020.</p> <p><u>Energy from Waste</u> No specific targets mentioned.</p> <p><u>Other targets</u> UK's target that, by 2020, 15% of energy comes from renewable sources.</p>
<p>Development of the Waste Strategy?</p> <p>[Include comments on Policies objectives which targets are set against, Policy Drivers, Context behind the targets]</p>	<p>The Department for Environment, Food and Rural Affairs (Defra) is currently working to produce a National Waste Management Plan for England to replace WS2007 that is compliant with Article 28 of the Waste Framework Directive. It is scheduled for publication in 2013.</p>
<p>How are the targets monitored and reported?</p>	<p>The latest waste management data for England is published at: www.defra.gov.uk/statistics/environment/waste, with the progress against the Action Plan being reported on an annual basis.</p> <p>Local Authorities – data for existing targets (e.g. Landfill Allowance Trading Scheme (LATS) mass balance and previous National Indicators) is collected via an online waste data system called WasteDataFlow. This data is collected quarterly and validated independently prior to release as a national statistic. The requirement to complete data into this system is currently in the Landfill Allowance Trading Scheme regulations. Once LATS is complete (March 2013), this system will continue to be used to provide data to Europe as part of the 'waste from households' recycling target.</p> <p>WasteDataFlow currently reports on weight, and the strategy highlights the desire to move towards reporting in carbon terms as a more accurate measure of the environmental impact of waste management.</p> <p>Commercial and Industrial data – the proposed responsibility deal with the waste management industry covers improving the data available on C&I waste.</p> <p>Defra will also use a number of other indicators to measure the progress of the strategy. These include:</p> <ul style="list-style-type: none"> ■ Service Quality - Defra has asked WRAP to create an annual update of performance benchmarks for recycling schemes and to develop a new measure of customer satisfaction or service quality in support of the Recycling and Waste Services Commitment. ■ Service Quality v Cost – Defra will measure the progress of this by using the cost of Local Authority waste management per household. ■ Defra will monitor levels of gross value added and employment in the repair, maintenance and recycling sectors. Re-use activities are carried out by a range of organisations in the economy and further work is required to identify appropriate indicators here. ■ Defra will also publish guidance for businesses by 2012 on how to report their corporate environmental impacts. This will complement existing Government guidance on how to report on greenhouse gas emissions. It will cover key areas such as waste minimisation and water use as well as impacts on natural resources and biodiversity.
<p>How are the schemes implemented?</p>	<p>There are a number of key actions which are recommended to deliver the Strategy objectives. These include:</p>

Landfill Tax – this will continue to be the key driver for diverting waste from landfill, increasing to £80 per tonne by 2014/15. The review of the waste strategy confirms that the current Landfill Allowance Trading Scheme will end in 2013, leaving the landfill tax as the main driver.

Responsibility deals with business – including developing Material Recovery facility (MRF) code of practice (quality of materials output from MRF), voluntary responsibility deals on paper, packaging, for the hospitality sector and voluntary actions on textiles. These voluntary agreements are not legally binding and are 'enforced' only through moral obligation and the commitment of those concerned. This includes for example the Courtauld Commitment, which sees retailers committing to reducing packaging, food and post consumer waste and the Construction and Demolition sectors commitment to halving waste to landfill.

Preventing waste - Developing a National Waste Prevention Programme by 2013, establishing a Waste Prevention Loan Fund for business to implement waste prevention activities, launching a Zero Waste Award, exploring reuse collection facilities at HWRCs, and introducing minimum mandatory standards for the design of products. Also they seek to improve the education of consumers of the durability and reliability of re-used products.

Quality Protocols – making it possible for materials that are derived from waste to be safely used (and marketed) as quality products. This has great benefits for the diversion of waste from landfill and it is estimated that by 2020 the first 12 materials should contribute towards diverting 17 million tonnes of waste from landfill, preserve 14 million tonnes of raw materials and avert 2.1 million tonnes of carbon dioxide-equivalent emissions.

Design of products – to drive waste prevention, remove hazardous materials and increase recycling at end of life. The government is working with business to explore how waste prevention requirements can be incorporated into minimum mandatory standards for the design of energy using products, to be included in voluntary and best practice standards.

Helping and rewarding those who 'do the right thing' – producing a local authority Recycling and Waste Services Commitment, funding reward and recognition scheme trials, increasing knowledge of 'recycling on the go' and various support to food waste initiatives.

Energy from waste – produce an Anaerobic Digestion strategy, publish an EfW guidance document, and capture more methane from landfill.

Modernising waste regulation and enforcement – review bio-waste policy and regulatory framework, replace the Controlled Waste Regulations 1992, End LATS, reduce the burdens of WasteDataFlow, consider a wood waste to landfill restriction, general streamlining of regulatory enforcement powers and responsibilities.

Public Sector leading by example – develop a carbon metric, a waste partnerships road map, the English Environment Agency to publish data on waste infrastructure, improve procurement skills, reduce food waste in the public sector and include waste prevention in government buying standards.

■ **Wales**

Waste Strategy Reviewed:	Towards Zero Waste. One Wales: One Planet - 2010
Context and Date	<p>Published in 2010, this new overarching waste strategy document sets out Wales' goals for 2050, and outlines their proposals to achieve them. Wales want to lead by example – setting out a long term framework linking resource efficiency and waste management between 2010 and 2050.</p> <ul style="list-style-type: none"> ■ 2025: Towards zero waste – <i>“By 2025, we will have significantly reduced waste and will manage any waste that is produced in a way that makes the most of our valuable resources”</i> ■ 2050: Achieving zero waste – <i>“By 2050 we will as a minimum reduce the impact of waste in Wales to within our environmental limits”</i>
Scope of Strategy	<p>Sector plans are the implementation plans for the strategy. They will describe the role of the sector, the Assembly Government and others in delivering the outcomes, targets and policies in Towards Zero Waste</p> <p>Wales will develop a rolling programme of sector plans on a priority basis and the following sector plans will be developed first:</p> <ul style="list-style-type: none"> ■ Municipal waste collected by local authorities ■ Collection, infrastructure and markets ■ Construction and demolition ■ Retail including wholesale, food manufacturers and hospitality (with a focus on food waste and it this will also address packaging in detail) ■ Subsequent specific sector plans will include the public sector and agriculture and there will also be a sector plan covering the remaining commercial and industrial waste sectors.
Waste Strategy Themes	<p><u>Waste Avoidance/ Zero Waste</u> Evaluating the role in waste prevention of the provision by local authorities of household waste collection services. There needs to be significant behavioural change to achieve the levels of waste prevention needed, and this means us all being challenged and accepting that challenge, including accepting the need for changes All products and packaging will be designed for disassembly and ease of reuse or recycling Evaluating production processes to make them more resource efficient</p> <p><u>Recycling / recovery</u> All recycling operations will be 'closed loop', or employ 'up-cycling (e.g. Closed loop is “Production system in which the waste or by-product of one process or product is used in making another product” and “Upcycling is the process of converting waste materials or useless products into new materials or products of better quality or a higher environmental value) Evaluating ways to encourage source separation as a way to drive waste prevention behaviour as well as to deliver high quality recycle Enhancing household recycling services and the level of households that participate Develop mechanisms for promoting recycling facilities that accept recycle depending on the material they are rather than the</p>

	<p>sector they come from - to achieve economies of scale</p> <p><u>Diversion from Landfill</u> Ensuring that all contaminants and rejects that are landfilled are properly identified and accounted for Ensure capacity for residual waste treatment and the most sustainable type of residual waste treatment</p> <p><u>Energy from Waste</u> Recyclate will be used directly in Welsh manufacturing processes. This means there will be far less need for residual waste treatment facilities such as 'energy from waste' plants with the number and/or capacity required progressively reducing from 2025 to 2050</p> <p><u>Litter Recycling</u></p> <p><u>Carbon</u></p> <p><u>Other</u> Education and awareness raising campaigns. These play a big role in encouraging people to buy better quality, durable and functional goods, as well as second hand and buying fewer products in general.</p> <ul style="list-style-type: none"> ■ A Sustainable Environment, where the impact of waste in Wales is reduced to within our environmental limits by 2050. This means we will take action on reducing the ecological footprint of waste in Wales to 'one Wales: one planet' levels through waste prevention and recycling, so that we contribute to using only our fair share of the earth's resources. ■ A Prosperous Society, with a sustainable, resource efficient economy. More 'green jobs' across a range of skill levels will be provided within the waste and resource management industry in Wales, and increased profit for businesses will be achieved through resource efficient practices, which are 'future proofed' against increasing competition for resources. ■ A Fair and Just Society, in which all citizens can achieve their full human potential and contribute to the wellbeing of Wales through actions on waste prevention, reuse and recycling
Targets	<p><u>Waste Avoidance/ Zero Waste</u> Wales to reduce waste by around 1.5% (of the 2007 baseline) each year across all sectors in order to achieve their one planet goal for 2050</p> <p>Household waste - 18,869 tonnes reduction in tonnage arising per year from baseline tonnage of 1,572,420 (2006/07) to 761,051 2050</p> <p><u>Recycling or recovery</u> 2025:All sectors in Wales will be recycling at least 70% of their waste by 2025 - this includes businesses, households and the public sector 2025:Construction sector will be expected to reuse and recycle 90% of its wastes by 2025</p>

	Waste stream	2009/10	2012/13	2015/16	2019/20	2024/25
	Local authority collected municipal waste	40%	52%	58%	64%	70%
	Commercial waste			57%	67%	70%
	Industrial waste			63%	67%	70%

Diversion from Landfill
Residual waste will be the material that cannot be recycled feasibly, and it will decrease to a maximum of 30% by 2025. Maximum levels of municipal waste landfill of 10% by 2019/20 and 5% by 2024/25

Energy from Waste.
This residual waste (max 30%) will be phased out of landfill sites and sent instead to high efficiency 'energy from waste' plants in accordance with the waste hierarchy
Maximum level of energy from waste of municipal waste for individual local authorities of 42% in 2015/16, 36% in 2019/20 and 30% in 2024/25.

Development of the Waste Strategy?	<p>Key driver for Wales is to “Reduce the impact of waste in Wales to within their environmental limits” (as Wales have defined as: One Wales: one planet levels of waste, which equates to approximately 65% less waste than Wales currently produces now)</p> <p>The main legal instruments driving Wales’ Strategy and policies are: Waste Framework Directive, The Landfill Directive; The Packaging and Packaging Waste Directive.</p>
How are the targets monitored and reported?	<p>The Welsh Assembly Government (WAG) is using ecological footprinting as a way to measure if it is meeting its sustainable development commitments</p> <p>WAG will measure waste arisings, management, disposal and capacity across all sectors to monitor progress against the waste prevention and management targets and progress towards the establishment of an integrated and adequate network of recovery and disposal facilities.</p> <p>WAG will improve information on the destination of recyclates and how they are managed in order to decrease contamination and improve the quality of recyclate.</p>
How are the schemes implemented?	<p>Sector plans are the implementation plans for the strategy. They will describe the role of the sector, the Assembly Government and others in delivering the outcomes, targets and policies in Towards Zero Waste</p> <p>The Welsh Assembly has used legislation to enforce the key targets of the Strategy. Welsh Assembly passed a law that allows the Welsh Government to set recycling and composting targets for local authorities. The Wales Waste Measure 2010 is the first legislation to be passed after Wales acquired new environmental powers 2010.</p> <p>Wales’ waste strategy sets a 70% target for 2024/25, which councils must meet using uniform waste collection methods from 2013 (as set out in the Sector Plans). The Welsh Government can now fine councils that fail to meet targets. The measure also includes powers to:</p> <ul style="list-style-type: none"> ■ Ban landfilling materials such as metals and food.

	<ul style="list-style-type: none">■ Require retailers to donate profits from the sale of single-use carrier bags to green causes, if a voluntary agreement to do this is not successful.■ Make laws to introduce a charging scheme for site waste management plans for the construction and demolition sector <p>Welsh Government has enacted legislation that defines recycling and set fines for local authorities failing to meet targets or provide information. The legislation set out the intention to fine councils £200 per tonne if they fall short of their recycling targets and £1,000 if they fail to report data.</p>
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■ **Scotland**

Waste Strategy Reviewed:	Scotland's Zero Waste Plan
Context and Date	<p>June 2010</p> <p>This Zero Waste Plan is intended to create a stable framework that will provide confidence for the investment necessary to deliver a zero waste Scotland over the next 10 years.</p> <p>Shaped by the Scottish Government's public consultation in 2009 on proposals for a Zero Waste Plan</p> <p>A plan for all Scotland's waste, not just the waste collected and managed by local authorities, which is largely household waste</p> <p>To achieve a zero waste Scotland, by making the most efficient use of resources by minimising Scotland's demand on primary resources, and maximising the reuse, recycling and recovery of resources instead of treating them as waste.</p> <p>The Strategy aims to create a fundamental shift in the way that waste is viewed and managed in Scotland i.e. as a resource not a waste.</p>
Scope of Strategy	<p>Waste types covered are: (20 Million tonnes in 2008)</p> <ul style="list-style-type: none"> ▪ Household and Municipal (2.9 tonnes) ▪ Construction and Demolition (8.6 tonnes) ▪ Commercial and Industrial (7.9 tonnes)
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u> - The Strategy gives priority to waste prevention and moving waste management up the waste hierarchy. It covers implementation of existing producer responsibility directives and initiatives in Scotland (relating to plastic bags, electronic equipment, batteries, and packaging), to determine how revisions could be made to drive waste prevention and recycle markets in Scotland, alongside creating options for extended producer responsibility and "take-back" schemes in Scotland.</p> <p>A key aim is to develop a Waste Prevention Programme for all wastes.</p> <p><u>Recycling/recovery</u> Regulations to drive separate collection and treatment of a range of resources in order to maximise their reuse and recycling value, and generate market supply. Initial focus will be on separate collection of food waste, in order to recover as much as possible of the 2 million tonnes of food waste is produced every year from all sectors in Scotland. This also improves potential energy value and avoids contamination of other wastes.</p> <p>The Zero Waste Plan promotes a move away from 'down cycling' – the linear management of resources to "closed loop" resource management which captures, reuses and recovers resources in line with the approach of the waste hierarchy.</p> <p>Collection and sorting systems should be designed to promote high quality recycle, and avoid reducing its value through contamination.</p> <p><u>Diversion from Landfill</u> The Scottish Government will introduce progressive bans on the types of materials that may be disposed of in landfill, and associated support measures, to ensure that no resources with a value for reuse or recycling are sent to landfill by 2020</p> <p>The initial focus of this will be on materials with a higher biodegradability (e.g. food waste). The timeline for landfill bans must</p>

	<p>therefore be tied directly into the source segregation requirements.</p> <p><u>Energy from Waste (EfW)</u> EfW has an important role to play and can make a positive contribution to both renewable energy and climate change targets. EfW could contribute to 31% of Scotland's renewable heat target (11% as the portion of heat energy to be supplied from renewable sources by 2020) and 4.3% of the renewable electricity target. For energy from waste to be truly sustainable it should only be used for resource streams which cannot practicably offer greater environmental and economic benefits through reuse or recycling.</p> <p><u>Litter Recycling.</u> Encourage increased "recycling on the go" opportunities to stimulate public behaviour change.</p> <p><u>Carbon</u> The Scottish Government will introduce a carbon metric for waste to identify and prioritise the materials with the highest environmental benefit for recycling, leading to better environmental outcomes, and a more efficient economy. The driver for this was that using waste tonnage data as a basis for measuring recycling does not always promote waste prevention, reduction and re-use and does not always focus recycling towards the material with the greatest environmental impact.</p> <p><u>Other</u> – A key aspect of the success of the Strategy is everyone taking part and understanding their role in progressing towards a zero waste Scotland. The strategy commits to providing support and resources on waste management for education providers and to develop appropriate support and resources to integrate zero waste objectives into teaching and learning from early years to tertiary education. It also focuses on ensuring that local and national awareness campaigns are well targeted and build on a common and consistent message for waste prevention, reuse and recycling as well as the important role that new waste infrastructure in achieving a zero waste Scotland.</p>
Targets	<p><u>Waste Avoidance/Zero Waste</u> Scottish Government will develop a Waste Prevention Programme for all waste, in line with the EU Waste Framework Directive, in order to place prevention at the heart of zero waste policy and action. The key focus for the strategy is zero waste to landfill, there are no targets associated with waste growth but the key target is:</p> <ul style="list-style-type: none"> ▪ Maximum 5% to landfill for ALL waste in Scotland by 2025 <p><u>Recycling or recovery</u> A long term target of 70% recycling for <u>all waste</u> arising in Scotland by 2025 Introduce minimum standards for recycled materials, which will be periodically reviewed in order to progressively improve the quality of recyclates. Recycling/composting and preparing for re-use of waste from households</p> <ul style="list-style-type: none"> ▪ 40% by 2010 ▪ 50% by 2013 ▪ 60% by 2020 ▪ 70% by 2025 <p>Separate targets for C&I waste streams are mentioned in the Strategy as 'being developed in due course'. Construction and Demolition – 70% recycling of construction and demolition waste by 2020. The measurement of recycling will include the tonnage of material sent to the end use reprocessor markets. Therefore, they will take account of rejects through the process. Organic (bio-waste) – inputs to treatment facilities (AD, IVC, open windrow) will count towards recycling and composting targets, subject to the output being PAS100 or PAS110 certified.</p>

	<p><u>Diversion from Landfill</u> Maximum 5% to landfill for ALL waste in Scotland by 2025 By 2020 Scotland needs to reduce the landfilling of biodegradable municipal waste (BMW) to 1.26 million tonnes. This requires the diversion of an additional 530,000 tonnes of biodegradable municipal waste.</p> <p><u>Energy from Waste</u> As the Strategy now deals with all waste, the previous 25% cap on local authority collected municipal waste treated in energy-from-waste plant, is being replaced with a range of measures including: landfill bans on mixed waste, mandatory requirements to pre-sort waste, limit on biodegradable content of waste which can be landfilled and restrictions on what can be incinerated. This aims to ensuring that energy from waste treatment is only used to recover value from resources that cannot offer greater environmental and economic benefits through reuse or recycling.</p> <p><u>Other targets</u> Climate Change Act 2009 - Reducing Scotland's greenhouse gas emissions by 42% by 2020 and 80% by 2050. These are ambitious targets and include powers to tackle the climate change impacts of waste.</p>
Development of the Waste Strategy?	<p>The Zero Waste Plan acts as response to the climate change act of 2009 by progressing some of the key measures and provisions set out in the Scottish Government's response via the Climate Change Delivery Plan (2009). Some of these include: the statutory framework for greenhouse gas emissions reductions in Scotland by setting an interim 42 per cent reduction target for 2020, with the power for this to be varied based on expert advice, and an 80 per cent reduction target for 2050</p> <p>This Zero Waste Plan is concise and strategic in its approach. One of the key messages is to deliver highest quality and value recyclables.</p> <p>One of the methods to achieve this is by strengthening the resource management sector, whose role is increasingly shifting away from disposal of waste, and towards recovery of resources.</p> <p>This is an aspirational zero waste plan with regulatory backing from Landfill bans on BMW and other European Legislation, such as the Waste Framework Directive Act as a previous driver. However Scotland has moved beyond this and has developed further regulations and landfill bans. Scotland notes that Landfill bans alone will not lead to high reuse and recycling rates. It would result in a shift from landfill to residual waste treatments such as Mechanical Biological Treatment (MBT) and Energy from Waste (EfW) facilities.</p> <p>Scotland wants to improve their understanding of how, when and where resources are being used, and which resources are appropriate for reuse, recycling or recovery. This requires better information on the full range of resources currently being treated as waste in order to identify the actions and policies necessary to improve the quality of the resource streams captured</p>
How are the targets monitored and reported?	<p>Municipal Waste (local authority) data is collated via WasteDataFlow every Quarter (an online Waste statistics recording database) managed by The Scottish Environmental Protection Agency (SEPA).</p> <p>Strategy mentions it will use powers under the CCA to introduce regulatory reporting to improve data on resource use by the business sector. See Annex A.</p> <p>Annex A states that C&I waste is produced by SEPA and published in the form of a waste data digest.</p> <p>The Annex A mentions that future data for all waste streams will be published quarterly or as appropriate annually. In the short term this will be for municipal solid waste. In the medium to long term SEPA will move towards publishing data for individual waste stream (e.g. paper and glass) with an overall aim to produce data for a better understanding on the flow of materials through the waste management system.</p> <p>Targets will measure the carbon impacts of waste to prioritise the recycling of resources which offer the greatest environmental and climate change outcomes through carbon savings, giving priority to different materials than if based on weight alone.</p>

	<p>In relation to data a key focus moving forward is the improvement of quality of data from the C&I sector. The idea to produce a mandatory obligation for businesses receiving waste data requests from SEPA to complete them has not been fully implemented. As of the 2011 waste data strategy. Currently data on waste produced by the commercial and industrial sector is collected directly from businesses by SEPA using voluntary waste surveys.</p>
<p>How are the schemes implemented?</p>	<p>A key focus of the implementation strategy for Scotland is using regulation to provide a mandatory enforcement framework to deliver the Strategy. The regulations are called the Waste (Scotland) Regulations 2012.</p> <p>Some key parts of the regulations are detailed below:</p> <ul style="list-style-type: none"> ▪ Progressive bans on the types of materials that can be disposed in landfill, (focus on biodegradable material) and associated support measures, to ensure that no resources with a value for reuse or recycling are sent to landfill by 2020. ▪ Measures to drive separate collection and treatment of a range of resources in order to maximise their reuse and recycling value, and generate market supply. Initial focus on food waste collections to recover material and energy value and avoid contamination of other wastes. ▪ Ensuring energy from waste treatment is only used to recover value from resources that cannot offer greater environmental and economic benefits through reuse or recycling. Consideration will be given to the establishment of an accreditation scheme whereby wastes could be certified to be residual. This would assist operators of EfW installations to ascertain whether the waste arriving at their gate had undergone sufficient pre-treatment to be considered residual <p>Some of the other Implementation methods mentioned in the strategy include:</p> <p>Develop Waste Prevention Programmes for all waste</p> <p>Use powers under the Climate Change (Scotland) Act 2009 to introduce regulatory reporting to improve data on resource use by business.</p> <p>Carbon metric introduced to identify and prioritise the materials with the highest environmental benefit for recycling. However because of the lack of data concerning Commercial and Industrial waste this will not apply to this sector immediately, but likely to be for all waste streams by 2025.</p> <p>Establish sector specific programmes, building on the success of previous programmes e.g. voluntary agreements (Coulter Agreement (retail) and Construction & Demolition (halving waste to landfill)).</p> <p>Develop a 'waste to resources' toolkit for resource managers which will introduce minimum standards for recycled materials.</p> <p>Sustainable Procurement Toolkit – encourage purchase of products containing recycled content and minimise overall resource use.</p> <p>Support the implementation of the Low Carbon Economic Strategy by encouraging investment in innovate resource management technologies. Particularly those that contribute towards Scotland's renewable energy targets.</p> <p>Review producer responsibility schemes (plastic bags, electronic equipment, batteries and packaging) to determine how revisions could be made to drive waste prevention and recycle markets.</p> <p>Develop good practice commitments for resource management collection and services provided to householders and small businesses. This will encourage resource management sector to sign up to these commitments so that users have a consistent service, leading to increased participation.</p> <p>Implement an education and awareness programme and develop resources for education providers. This programme must be a consistent, targeted, coordinated and phased education and awareness programme</p> <p>Review the role of incentives in promoting behaviour change and develop schemes to drive reductions in waste and improve recycling performance.</p>

■ Northern Ireland

Waste Strategy Reviewed:	Towards Resource Management – The Northern Ireland Waste Management Strategy 2006-2020
Context and Date	<p>The Strategy was adopted in 2006 and has a greater emphasis (than the previous 2000 Strategy) on the importance of waste prevention and of breaking the link between waste production and economic growth. The Strategy reinforces the need to increase waste recycling and recovery through a mixture of approaches, including the renewal of recycling targets, focused awareness campaigns and the possible introduction of incentive schemes. The Strategy updated the 2000 Waste Management Strategy. The Strategy is due to be reviewed late 2012 and is envisaged to become more in line with the European Waste Framework directive.</p>
Scope of Strategy	<p>Major waste types:</p> <ul style="list-style-type: none"> ■ Municipal waste ■ Commercial & industrial waste ■ Construction, demolition & excavation wastes ■ Hazardous waste ■ Agricultural waste <p>Priority wastes under European legislation:</p> <ul style="list-style-type: none"> ■ Packaging ■ Waste Electrical & Electronic Equipment (WEEE) ■ End of life vehicles ■ Tyres ■ Batteries
Waste Strategy Themes	<p>The Northern Ireland Waste Management Strategy 2006 to sets out the key policies and actions in six policy strands (e.g. themes):</p> <p><u>Strand 1: Waste Prevention</u> <u>Aim:</u> To stabilise waste generation in order to minimise impact on the environment, improve resource efficiency and reduce the cost of waste management in Northern Ireland.</p> <p><u>Strand 2: Recycling/recovery</u> <u>Aim:</u> To increase resource efficiency through the promotion of recycling and recovery of waste, based on a life cycle approach which balances consumption and production.</p> <p><u>Strand 3: Waste Planning</u> <u>Aim:</u> To support the development of an integrated network of facilities for the recycling, recovery and disposal of waste within Northern Ireland and to ensure that these facilities are planned, designed and operated to provide a high level of protection for the environment and for public health.</p> <p><u>Strand 4: Data and Research</u> <u>Aim:</u> To provide appropriate and reliable data to inform the decision making process and facilitate progress towards strategic objectives.</p> <p><u>Strand 5: Legislation and Enforcement</u> <u>Aim:</u> To provide an effective regulatory framework for waste and resources management in Northern Ireland, this ensures high standards, environmental protection and the prevention of waste crime.</p> <p><u>Strand 6: Learning and Communication</u> <u>Aim:</u> To raise awareness, encourage best practice and achieve behavioural change by all stakeholders, in order to effect a cultural shift towards better resource management and improved environmental quality.</p>

Targets	<p><u>Strand 1: Waste Prevention</u></p> <p>The consultation issued by the Department of Environment in 2005 and whose responses were incorporated into the 2006 strategy put forward proposals to introduce waste prevention targets. These proposals were supported by most respondents, but raised concerns about how the targets would be measured, due to the lack of robust data. In response, the Waste Prevention Forum will set targets for waste prevention for all waste streams by 2010. Improved data collection systems and the delivery of research and demonstration projects in waste prevention will assist in the development of SMART1 targets.</p> <ul style="list-style-type: none"> ■ Government departments Waste Action Plan - reduction in paper use by 50% over the next five years, minimum target for the reduction in paper use by 10% per annum, based on each Department's baseline. <p>However there were no targets set in 2010 for waste prevention due to the complexities surrounding this strand.</p> <p><u>Strand 2: Recycling / recovery</u></p> <ul style="list-style-type: none"> ■ 60% of Commercial and Industrial Waste to be recycled by 2020 ■ 75% of Construction, Demolition and Excavation Wastes to be recycled or reused by 2020 ■ Recycling and Composting of Household Wastes to be at: <ul style="list-style-type: none"> ■ 35% by 2010 ■ 40% by 2015 ■ 45% by 2020
Development of the Waste Strategy?	<p>The Strategy is set firmly in the context of sustainable development policy and other key government policy documents and initiatives, such as the Regional Development Strategy, the Investment Strategy for NI, the Energy Strategy and the Review of Public Administration, as well in the context of EU legislation, as a key driver of waste management policy and practice.</p> <p>The 2006 Strategy, together with the three sub-regional Waste Management Plans, provides the framework for establishing an integrated network of waste management facilities for Northern Ireland, as required by the EU Waste Framework Directive. It also incorporates Northern Ireland's measures for the management of biodegradable wastes in fulfilment of Article 5(1) of the EU Landfill Directive.</p> <p>In addition, the Review of Public Administration (RPA) will affect the way in which waste is managed in Northern Ireland. The RPA aims to strengthen the role of local government in delivering accessible public services. Key legislation driving the strategy is shown in the following diagram:</p>



The Strategy is developed in line with European legislation which informs waste policy and local legislation. These include:

Landfill Directive:

Reduce the quantity of biodegradable municipal waste being landfilled set out as national landfill allowances, which in Northern Ireland have been translated these into annual allowances for each district council.

Producer Responsibility Directives

Packaging Waste:

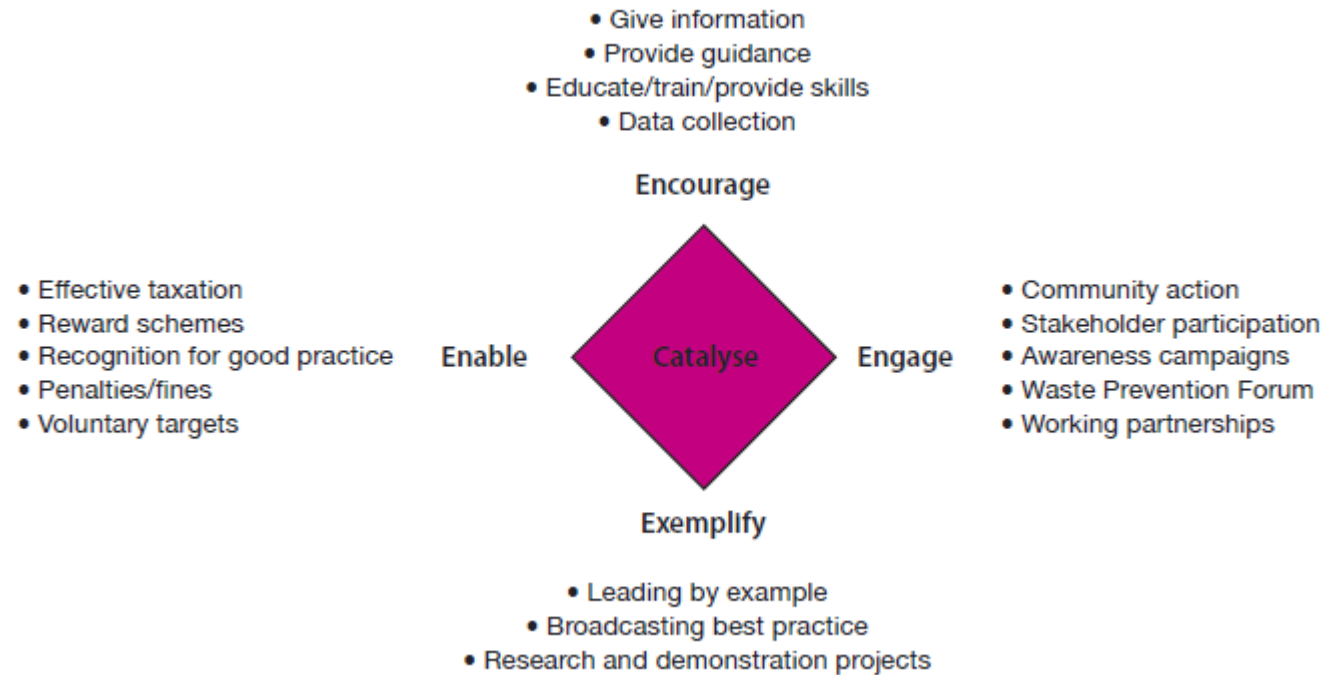
The UK national target for recovery of packaging waste (with 95% of the recovery figures for 2008 must be achieved by recycling). Also there are material specific recycling targets as follows:

- Paper 70% Steel 61.5% Aluminium 35.5% Glass 71% Plastic 23.5% Wood 21%

Waste Electrical and Electronic Equipment (WEEE):

Producers are required to introduce separate collection systems for household WEEE to meet a minimum annual collection target of 4kg of WEEE per person by 31 December 2006. For 2006, recovery targets for separately collected WEEE are set between 50 and 80%, depending on the product category.

	<p>End of Life Vehicles: From 2006-2014, each vehicle producer must achieve 85% reuse and recovery of ELVs (80% of which must be achieved by reuse and recycling). For vehicles marketed before 1 January 1980, 75% reuse and recovery must be achieved (70% of which must be achieved by reuse and recycling).</p> <p>Batteries: The EU Batteries Directive proposes that collection targets for spent portable batteries will be 25% of average annual sales, increasing to 45% after 8 years. 50-75% of collected batteries will be recycled, depending on battery type. Landfilling or incineration of untreated automotive or industrial batteries will be banned.</p>
<p>How are the targets monitored and reported?</p>	<p>Monitoring Northern Ireland's progress is essential to the successful implementation of the Strategy, to ensure that we remain on track to meet our targets. As one of its key functions, the Strategic Waste Board will monitor performance across all strands of the Strategy delivery programme and publish annual reports. The Strategic Waste Board will address the issue of identifying appropriate key performance indicators, where required, as part of its early work programme.</p>
<p>How are the schemes implemented?</p>	<p>Waste Prevention</p> <ul style="list-style-type: none"> ■ Government leadership in waste prevention based on the 4 E's tool (shown below). It will include implementing green housekeeping and environmental performance throughout government, developing procurement policies and practices that encourage sustainable purchasing, providing consistent information and guidance to assist all stakeholders to improve resource management. The government are also looking into introducing Site Waste Management Plans on projects £200,000 and above which quantify the waste to be produced and measures for its reduction, recycling. The Government consulted on this in 2011 however the implementation of the regulations is currently on hold. ■ Providing a financial incentive to reduce waste – The Government have consulted on a 'Pay as you throw' scheme for municipal waste. The feedback on this consultation was positive however recommendations were made to pilot it within local councils. SKM is unable to find any evidence of this occurring. District councils are already obliged to collect waste from commercial premises and are free to charge for this service. Pricing mechanisms such as differential charging schemes could also be used to help foster a culture of waste minimisation, recycling and recovery for commercially collected wastes. Non-municipal waste The Landfill Tax is an effective fiscal driver to reduce waste at source because, as the tax increases, alternative investment to reduce waste and therefore avoid landfill charges becomes attractive economically. The government may also look to use monies from the Landfill Tax Escalator to potentially benefit waste management schemes. ■ Preventing waste in the business sector ■ Preventing waste in the home ■ Setting targets for waste prevention



Summary of Waste Prevention Actions and Targets

- Publish Departmental Waste Management Action Plans by April 2006.
- Public Sector to reduce paper use by 10% per annum based on the baseline established by each Departments own waste audit.
- Develop a mechanism to monitor the implementation of the Departmental Waste Management Action Plans by March 2007.
- The Department to bring forward, for public consultation, detailed proposals for a statutory requirement to prepare Site Waste Management Plans as a tool to help minimise waste on construction projects.
- The Department to bring forward, for public consultation, detailed proposals on the provision of legal powers to district councils to charge for collection of residual wastes from householders.
- Waste Prevention Forum to develop a comprehensive action plan for waste prevention, detailing the delivery of the initiatives listed in sections 1.4 and 1.5, by July 2006 and will be reviewed annually.
- Waste Prevention Forum to design SMART targets for the prevention of municipal, commercial and industrial waste and construction, demolition and excavation wastes by 2010.

Recycling/recovery

- Enabling and Encouraging Participation in Recycling, Composting and Recovery

- Amending the building regulations
 - Introducing a legal requirement for separate collection of recyclable materials
 - Assisting small businesses
 - Providing powers for district councils to introduce financial incentives
 - Providing technical support and advice
 - Stimulating Markets through Sustainable Procurement
 - Integrating environmental considerations into public procurement
 - Adopting sustainable construction
 - Adopting Waste Management Action Plans
 - Developing a Recycling Economy for all Waste Streams
 - Stimulating markets for recycled material
 - Engaging businesses in the environmental sector
 - Implementing Producer Responsibility
 - Setting Recycling and Recovery Targets
- Summary of Recycling and Recovery Actions and Targets**
- Waste Management Groups to review Waste Management Plans by June 2006.
 - The Department of Finance and Personnel will amend the Building Regulations by 2009.
 - The Department will bring forward, for public consultation, detailed proposals for a statutory requirement for district councils to collect at least two materials for recycling or recovery at the next available legislative opportunity.
 - The Department will bring forward, for public consultation, detailed proposal to provide district councils with powers to provide financial incentives for recycling waste and fixed penalties for illegal behaviour such as flytipping at the next available legislative opportunity.
 - Market Development Forum to develop a Market Development Action Plan by June 2006.
- Providing Waste Infrastructure**
- Planning for the Management of Waste in Northern Ireland
 - Waste Management Planning
 - Obtaining planning permission for waste infrastructure facilities
 - Procuring the Infrastructure
 - Structural arrangements
 - Assessing the infrastructure requirements
 - Funding
 - Supporting the procurement of infrastructure
- Summary of Waste Planning Targets and Actions**
- Make a Local Government Companies (Best Value) Order during 2006.
 - Complete the work of the Waste Infrastructure Task Force by June 2006.
 - Waste Management Groups to review Waste Management Plans by June 2006.
 - Establish a single, regional waste disposal authority within the context of, and in parallel with, the implementation of the Review of Public Administration (by 2009).
 - Establish a Programme Delivery Support Unit in 2006.

Data and research

- Improving our waste data systems – including municipal waste, C&I, C&D, Hazardous Waste, Agricultural waste, regulatory returns, statutory returns
 - Municipal waste – Environment and Heritage Service (EHS) will continue to implement and develop the Wastedataflow system. EHS with local councils have conducted a waste compositional survey to determine biodegradable municipal waste content. District councils will develop a monitoring programme for biodegradable municipal waste as part of their reporting requirements under the NI Landfill Allowance Scheme.
 - C&I and C&D – EHS to conduct further surveys to gather baseline data.
 - Hazardous waste – summarised in technical report prepared by the Hazardous Waste Forum.
 - Agricultural waste - Agricultural waste will be included within the regulatory regime for controlled waste in 2006. EHS to carry out survey in 2006-7.
 - Regulatory returns
 - Statutory reporting
- Promoting research, development and demonstration projects

Summary Data and Research Targets and Actions

- Publish annual (December) data reports to include information on performance indicators.
- Carry out surveys on waste arisings, composition and management methods on various waste streams over the next three years. Particular surveys include:
 - Carry out an NI Waste Characterisation survey in partnership with district councils during 2005/06.
 - Co-operate with business interest groups to develop information recording tools on waste arisings and management activities during 2006.
 - Undertake new surveys to update baseline information on commercial and industrial, and construction, demolition and excavation wastes, using the findings of the 2005/06 surveys by September 2006.
 - Work in partnership with the Department of Agriculture and Rural Development to survey agricultural waste arisings and management during 2006/07.
- Within three years of the publication of the Strategy, the Department will bring forward detailed proposals for public consultation, to introduce a statutory requirement for businesses to submit returns on waste arisings and management.
- Develop a waste management information database to integrate all statutory returns, surveys and applications from waste producers and carriers and in particular from licensed facilities by 2008/2009.
- Continue to support research and demonstration projects through WRAP, the Community Waste Innovation Fund and the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) and the DEFRA Waste and Resources Research Programme.

Legislation and Enforcement

- Prompt introduction of new legislation
- **Advice and guidance**
- Regulatory activities
- Prevention of illegal dumping
- Additional legislation to support implementation of the Strategy

Summary of Legislation and Enforcement Targets

The Department will continue to introduce and implement legislation to meet statutory obligations in accordance with published

programmes and timetables. The review of the Strategy has highlighted a number of particular areas where new legislation is required and the Department is committed to bringing this forward in a timely manner as follows:

- To amend the Waste and Contaminated Land (Northern Ireland) Order 1997 by autumn 2006 to provide for new investigation and enforcement powers (see section 5.4);
- To bring forward, the additional measures outlined in section 5.5 within 3 years of publication of the strategy;
- Towards Resource Management 59
- Environment & Heritage Service will review its Enforcement and Prosecution Policy in 2006; and
- By 2015, Environment & Heritage Service aims to reduce the annual tonnage of illegal waste disposed of in Northern Ireland to 1% of the 2004/05 baseline.

Learning and Communication

- A new communications programme for all sectors
- Providing accessible information on all waste streams
- Using incentives to encourage all sectors in greater resource efficiency
- Supporting the delivery of waste education and training

Summary of Learning and Communication Targets and Actions

- The Learning and Communications Forum to develop an overarching learning and communications programme for waste management by summer 2006. The delivery of the programme will be evaluated annually.
- In partnership with key stakeholders, the Department will extend the Wake up to Waste campaign, and develop a long-term, national campaign delivered at local level by December 2006.
- The Learning and Communications Forum will develop an overarching education and training framework for waste management by 2006.

■ **City of Copenhagen**

Waste Strategy Reviewed:	Waste Management Plan 2012 – The Short Version City of Copenhagen
Context and Date	The Waste Management Plan 2012 is about waste management in Copenhagen in the period 2009-2012. Copenhagen aims to be the Eco-Metropolis of the world in 2015. The Waste Management Plan contains a number of initiatives aiming at further development of a well worked waste management system. Initiatives deal with increase in separation of waste for recycling and new treatment technologies. Among the areas for effort in the plan, focus has been put on waste prevention. The Waste Management Plan is a consolidated document for the City's efforts in the waste management field describing how the City of Copenhagen will manage waste generated in the city.
Scope of Strategy	The Copenhagen waste management system that all waste must primarily be separated at source, i.e. at the place of generation of the waste. In addition, the City's waste management system builds on the so-called waste hierarchy. The Waste Management Plan covers waste from households, businesses and public institutions.
Waste Strategy Themes	<p><u>Waste Prevention and Reuse</u></p> <ul style="list-style-type: none"> ■ Change in behaviour among consumers and producers ■ City's institutions as frontrunners ■ More options for reuse <p><u>Increased waste separation</u></p> <ul style="list-style-type: none"> ■ Knowledge and information ■ Separation must be easy ■ Instruments ■ Hazardous Waste <p><u>Treatment Solution</u></p> <ul style="list-style-type: none"> ■ Large municipal investment ■ Waste treatment 'on site' ■ Import Export ■ Environmental impacts from waste management <p><u>Innovative waste solutions in urban areas</u></p> <ul style="list-style-type: none"> ■ New solutions in existing urban areas ■ Innovative solutions in new urban development areas ■ Development of recycling centres and local drop-off stations ■ Vacuum waste system <p><u>Tender for collection and treatment of waste</u></p> <ul style="list-style-type: none"> ■ Quality of service ■ Environmental impacts from collection, treatment and transport ■ Knowledge-building and market focus

Targets	<p><u>Waste Avoidance/ Zero Waste</u> Target: Reducing growth in waste arisings by 10 % – corresponding to prevention of 2,500 tonnes of waste in Copenhagen by 2012</p> <p><u>Recycling or recovery</u> No set recycling targets identified</p> <p><u>Diversion from Landfill</u> No set diversion from landfill targets set</p> <p><u>Increase in separation of waste.</u> Target: Separating 33,000 tonnes of the waste that would otherwise go to incineration in 2012 to ensure more eco-friendly treatment – corresponding to amounts for incineration being around 10 % lower compared with today (2009)</p> <p><u>Street Cleaning</u> The City has a target to remove waste in public streets within eight hours. This target is separate from the Waste Management Plan 2012</p> <p><u>Carbon</u> Under the Eco-Metropolis project the City is committed to reducing CO₂ emissions by 20 % in 2015 compared to 2005. This target is separate from the Waste Management Plan 2012; however the plans initiatives are important measures liable to reduce emissions of greenhouse gases in Copenhagen.</p> <p><u>Other targets</u> Target: Having decisions about changes in waste treatment based on a 100 % survey of present environmental impacts from treatment system Target: Deciding and starting implementation of at least five new waste solutions in the urban spaces Target: Ensuring smooth transition from monopolistic situation to competition for clients, R98 staff, and the City</p> <p><u>Soil</u> Contaminated soil is part of waste management planning. The City of Copenhagen has prepared a soil strategy focusing, among other things, on prevention of soil contamination, management of contaminated soil as well as supervision and enforcement.</p>
Development of the Waste Strategy?	<p>According to the Danish Statutory Order on Waste local authorities must prepare a plan for municipal management of waste every four years. The plan must contain a survey section, an objectives section, and a planning section, and it must have a 12 years' perspective. Therefore, Waste Management Plan 2012 contains in addition to initiatives for the period 2009-2012 a waste amount forecast for the period 2009-2020. In the EU, a new waste directive has been adopted setting targets for recycling and incineration with energy recovery. Initiatives in Waste Management Plan 2012 take these developments in the waste management field into consideration. Other important documents include:</p> <p>City Plan - The City Plan and associated local plans sets up the physical framework of the City's work.</p> <p>Agenda 21 Plan - A crosscutting plan affecting all administrations of the City. Its purpose is to promote eco-friendly behaviour among citizens and businesses and to give a boost to certain selected fields.</p> <p>Dogme 2000 - The City of Copenhagen participates in the intermunicipal Dogme 2000 cooperation. A key issue in this work is to anchor environmental work, measure people's impact on nature, and prepare a plan for environmental improvements.</p>
How are the targets monitored and reported?	The Strategy does not indicate how the initiatives will be monitored.
How are the schemes implemented?	<p><u>Waste Avoidance</u> <u>Change in behaviour among consumers and producers</u></p> <ul style="list-style-type: none"> ■ Information about Waste prevention and climate

- Enhanced cooperation with businesses
- Partnership with retail trade
- Campaign about 'No unsolicited mail'
- City's institutions as frontrunners**
- General project about waste prevention in the City
- Survey of waste prevention impact on CO2 burden
- Requirement for less packaging in City purchasing agreements
- Exchange site on City's Intranet
- More options for reuse**
- Exchange centres at recycling centres
- Exchange centre for C&D waste
- Information about reuse website
- 'Flea Market' at Copenhagen Climate
- Guidance on exchange centres in courtyards
- New recycling centres and drop-off stations for reusable materials
- Increase in separation of waste**
- Knowledge and information**
- Industry campaign about packaging waste
- Information material in Polish about C&D waste
- Information material about food waste
- Information close to citizens
- Paper campaign for single-family houses
- Information about new waste regulation
- Enhanced cooperation with caretakers
- Separation must be easy**
- Establishment of drop-off stations for municipal institutions
- Provision of more cardboard containers
- Containers for storage of small waste fractions
- Separate collection of plastic from households
- Location of plastic film and cardboard containers upon occupation
- Source-separation of waste electronics, iron and metal in multi-storey buildings
- Instruments**
- Efforts for most waste-intensive industries
- Supervision of industries with large amounts of Plastic
- Contact with newly established industries
- Waste separation for businesses in housing estates
- Multi-annual supervision strategy
- Economic incentives through taxes and fees
- Environmental diplomas, checklists and tips
- Review of buildings before demolition

Hazardous Waste

- Requirement for documentation for C&D waste
- Survey of industries with hazardous waste
- PCB campaign upon window replacement
- Campaign about waste electronics
- Information about separation of hazardous waste in multi-storey buildings
- Assessment of 'green vehicle' scheme
- Follow-up on box scheme
- Campaign for battery scheme

Treatment Systems for the future**Large municipal investment**

- Increased control at treatment plants
- Investigation of extension of I/S Vestforbrænding
- Investigation of substitute capacity at I/S Amagerforbrænding
- Feasibility study of merger of incineration plants
- I/S SMOKA (SMOKA assists companies in disposing of oil and chemical waste) and future-oriented treatment of hazardous waste
- Control and new treatment methods for waste to landfill

Waste treatment 'on site'

- Safeguarding treatment and landfill capacity for contaminated soil in Nordhavnen
- Utilisation of surplus soil from building and construction projects
- Development of treatment techniques for contaminated soil
- Temporary separation areas at construction sites

Import and Export

- Supervision and enforcement of export of waste
- Treatment of waste abroad

Environmental impact from waste management

- Use of EASE waste as decision-making tool (a life cycle assessment model for waste management)
- Survey of CO2 reduction potential in management of shredder waste

Innovative waste solutions in urban areas**New Solution in existing urban spaces**

- More packaging types and new containers Events etc. in the city
- Improved collection of free newspapers
- Cooperation with fast-food stores etc.

Innovative Solutions in new urban development areas

- Alternative waste haulage in new urban development areas
- Underground waste containers
- Room for waste in urban development areas

Development of recycling centres and local drop-off stations

- Establishment of two new recycling centres
- Improvement of three existing recycling centres

- Survey of possibilities for establishing larger recycling centre
- New forms of recycling centres
- More local drop-off stations

Vacuum waste systems

- Evaluation of vacuum waste systems
- Trial regarding vacuum waste systems for household and street waste
- Investigation of vacuum waste system for Paper

Tender for collection and treatment of waste

Quality and Service

- Preparation of waste service strategy focusing on customers
- Follow-up on cooperation agreements
- Development of incentives for high quality and high customer service
- Network for dialogue for stakeholders and user groups
- Regular citizen satisfaction surveys

Environmental impact from collection, treatment and transport of waste

- Highest standard for environment, occupational health and traffic safety in replacement/procurement of vehicles
- Focus on environment, fuel efficiency and reduction of CO₂ emissions
- Requirements for tyres and hydraulic oils in tender documents and supplier contracts

Knowledge-building and market focus

- Gathering of knowledge about new methods and technical solutions
- Launch of development initiatives in supplier contracts
- Continuous market focus

Around DKK 486 million or EUR 65 million (2007 figures) are levied in waste management fees from Copenhagen's home owners – with three different fee types:

- Fee covering collection and treatment of household waste – also called tariffs
- Fee covering fixed contribution to municipally owned incineration plants
- Fee covering municipal expenses for planning and administration of waste schemes.

To increase transparency in municipal waste management fees the fee structure in Copenhagen will be changed – see figure below. This change will mean a conversion of fee levying so that fees are levied separately for private households and businesses. The conversion also means that fees are levied for specific fields.

PROPOSED NEW FEE STRUCTURE

FEE AREA	YIELD	DISTRIBUTION BETWEEN BUSINESSES AND PRIVATE HOUSEHOLDS			
	DKK MILLION (EUR)	HOUSEHOLDS DKK MILLION (EUR)	HOUSE-HOLDS %	BUSINESSES DKK MILLION (EUR)	BUSINESSES %
Domestic waste	266 (36)	266 (36)	100	-	-
Garden waste	13 (1.8)	13 (1.8)	100		
Bulky waste	59 (8)	59 (8)	100		
Cardboard, paper, beverage containers	31 (4.2)	31 (4.2)	100	-	-
Recycling centres	65 (8.8)	39 (5.3)	60	26 (3.5)	40
Hazardous waste	13 (1.8)	11,3 (1.5)	87	1,7 (0.2)	13
Health-care risk waste	2 (0.3)	-	0 (0.3)	2	100
Administration	37 (5)	16,7 (2.3)	45	20,3 (2.7)	55
Total	486 (65.7)	436 (58.9)		50 (6.8)	

The table has been drawn up based on figures from 2007. Actual distribution of costs on different fee areas and between businesses and private households may be different in 2009.

■ **Flanders**

Waste Strategy Reviewed:	Implementation plan for Environmentally Responsible Household Waste Management 2007
Context and Date	<p>Aims for the responsible and sustainable treatment and processing of virgin materials and materials in general in the waste management chain</p> <p>The 2007 implementation plan (which runs until 2015) no longer focuses on the latter links in the chain, but rather visualises a global approach that starts from the very production stage of materials, goods, and products and ends with the final disposal of the resulting household waste.</p> <p>The 2007 implementation plan did not just come about because there was a need for it. It is also subject to a legal obligation. The reason is that the European Framework Directive on Waste places an obligation on every Member State of the European Union to draft one or more plans pertaining to the management of its waste. Within the bounds of the Flemish legislation, the plan fits into the Waste Decree.</p> <p>An integral approach and not just a solution for dealing with the waste that remains at the end of the material chain. Waste management needs to broaden its outlook and perspective to cover the entire material chain, from the production of materials, goods, and products through to the treatment of household waste</p>
Scope of Strategy	<p>Covers the 2008-2015 period</p> <p>Household waste and category 2 Industrial waste – Waste that is comparable or similar to Household waste.</p>
Waste Strategy Themes	<p><u>Waste Avoidance/ Zero Waste</u></p> <p>The aim of the implementation plan is to:</p> <ul style="list-style-type: none"> ■ produce as little waste as possible in Flanders ■ Optimise waste treatment methods - materials will be re-introduced into the material chain. ■ Likewise, the volume of waste that is still left for final disposal will be restricted to a minimum <p><u>Recycling/recovery</u></p> <p>That via recycling, Flanders will re-introduce the largest possible volume of the waste they produce into the material chain. This can be achieved in part by having minimum collection method (e.g. door to door) and a recommended minimum frequency for each particular material type. This includes actions of:</p> <ul style="list-style-type: none"> ■ Household waste must be collected a minimum of bi-weekly except for city centres and tourist areas of coastal municipalities ■ Re use centres – Use a network of accredited re use centres. ■ Improve the quality of the selectively collected waste - the higher this quality is, the more effectively waste can be recycled. ■ Promote the marketing of recycled material - improve the marketing of compost, recycled aggregates, plastics, and recycled packaging and Work out and apply codes of good practice for waste carriers <p><u>Diversion from Landfill</u></p> <p>Only waste that is not recyclable and cannot be incinerated may be disposed of a Landfill</p> <p>Starting in 2015, Flanders will no longer be landfilling combustible, non-recyclable industrial waste, because adequate treatment capacity is achieved</p>

	<p><u>Energy from Waste (EfW)</u> Only waste that is not recyclable qualifies for EfW. EfW must be self-sufficient meaning that it should not need be subsidised to be efficient economically. To help achieve this Landfill must be more expensive than Incineration. The tariff for the final disposal of combustible waste on landfill sites is 75 euro/ton. The tariff for the incineration of waste is 7 euro/ton. Flanders will achieve optimal use of the existing capacity of waste incineration and Mechanical Biological Treatment facility (MBT) A final processing capacity that: -meets the emission standards currently in force -ensures the optimal recovery of energy -is attuned to the supply of combustible waste that needs disposing</p> <p><u>Litter Recycling</u> Flanders has a policy to deal with Illegal circumvention and evasion of rules and regulations on waste disposal They are addressing this kind of behaviour with a policy based on 3 'cornerstones' 1. communication, awareness, and education 2. an adequate and adapted infrastructure 3. enforcement.</p> <p><u>Other</u> Continue to apply the 'the polluter pays' principle The municipalities charge the rising costs for local waste management on to their residents. Per household, the annual cost for this will rise from 222 euro in 2005 to 275 euro in 2015</p>
Targets	<p><u>Waste Avoidance/ Zero Waste</u> Flanders is striving for a maximum annual production of 560 kilograms of waste per head. By 2015 – 25% of population engaged in home composting. A reduction in the volume of industrial waste that needs to be treated, and this by 15 percent in 2015 on a baseline of the volume in 2005 On average, at the Flemish level, they aim to produce no more than 150 kilograms of residual waste a year per head</p> <p><u>Recycling or recovery</u> 75% of household waste needs to be collected selectively (i.e. sorted at kerbside) 2015 – 5Kg per head re use at re use centres Waste fractions qualifying for recycling contain as few pollutants as possible - Maximum 3% for green waste and paper and cardboard waste, 5% for wood and glass waste, 15% for construction and demolition waste, 5 to 15% for textile waste</p> <p><u>Diversion from Landfill</u> -No specific targets 2015, combustible waste will no longer be landfilled because adequate treatment capacity was achieved. In addition, Flanders plan a landfill capacity of 300,000 tons for non-combustible waste and for incineration ashes from grid incinerator plants</p> <p><u>Energy from Waste.</u> Policy estimates that, in 2015, they will incinerate 1.66 million tons of waste products. This renders 332,000 tons of incineration</p>

	<p>ashes, of which 166,000 tons will be re-used. In this way, Flanders saves on primary construction and building materials by recycling and reuse of these materials earlier in the process.</p> <p>Other targets – None mentioned</p>
Development of the Waste Strategy?	<p>The plan for Household Waste 2003-2007, has served as a basis in the preparation of the 2007 plan.</p> <p>3 main ambitions for the plan:</p> <p><i>A. That we produce as little waste as possible in Flanders.</i></p> <p><i>B. That, via recycling, we re-introduce the largest possible volume of the waste we produce into the material chain. This will help us in keeping to a minimum the quantities of waste products that need final disposal, as well as limiting the use of new virgin materials.</i></p> <p><i>C. That we dispose of those materials that we do not recycle as best as we can”</i></p> <p><i>“From the European perspective, Flanders is a small region. On top of this, it has not been granted all of the necessary competences required to pursue a completely integrated waste and materials policy. Yet, to avoid circumventing and evasion practices or economic or ecological activities of negative impact, it is necessary that the three Regions (Flanders, Wallonia and Brussels) and the Federal Government harmonize their policies in order to bring them in synch with each other”</i></p>
How are the targets monitored and reported?	No information available
How are the schemes implemented?	<p>The implementation plan is built up around a number of target objectives which are translated into action programmes.</p> <p>These programmes have been classified under three thematic group headings.</p> <p>A. prevention, environmentally responsible consumption, and re-use of products;</p> <p>B. selective collection and recycling;</p> <p>C. final treatment.</p> <p>Aside from these detailed programmes, there is also a general action programme. This general action programme coordinates the other programmes, such as, for instance, consultation among the parties involved in the Household Waste Consultation Platform, and the monitoring of the progress of these actions.</p> <p>Some examples include:</p> <p>A – Create more room for innovative materials, products and systems</p> <p>B – Improve quality of the separately collected waste</p> <p>C – guarantee a final treatment with optimal energy recovery</p>

■ Finland

Waste Strategy Reviewed:	Finland - Towards a recycling society: The National Waste Plan for 2016
Context and Date	Published in 2009
Scope of Strategy	The objectives cover most sectors of waste management, including municipal waste management, and waste management in industry, mineral extraction, construction, agriculture, trade and services.
Waste Strategy Themes	<p><u>Waste Avoidance/ Zero Waste</u> Material efficiency of products will be promoted by incorporating material efficiency criteria in product standards. Studies will be carried out on which natural resources should, from the point of view of the environmental policy, be subjected to economic steering. Waste strategies and waste regulations of the municipalities must be drawn up and other areas of waste management planned and developed in accordance with the principle of waste hierarchy. More efficiency in the reuse of packaging and recycling of packaging waste</p> <p><u>Recycling/recovery</u> Quality and environmental compliance criteria will be drawn up for certain recycled materials. Incentive-based waste charges for the recycling industry will be introduced to make the sorting of municipal waste more efficient. Aim to increase demand for recycled products</p> <p><u>Diversion from Landfill</u> Changes to the Government decision on landfills will be draw up so that the restrictions on the landfilling of biodegradable waste can be reinforced and put on a concrete basis</p> <p><u>Energy from Waste</u> There will be more use of waste as energy, while at the same time it will be ensured that materials suitable for recycling are not incinerated in substantial amounts Measures will be taken to promote the construction of biogas plants so that manure and certain other types of waste can be utilised</p> <p><u>Litter Recycling</u> – No specific mention</p> <p><u>Greenhouse Gas</u> The main climate-related objective of waste policy is to reduce the greenhouse gas emissions generated by waste, particularly by reducing the methane emissions resulting from treatment at landfills. In order to reach the objective, the amount of landfilled biodegradable waste will be substantially reduced, while at the same time measures will be taken to increase the recovery rates of methane generated at landfills.</p>

	<p>Other Regional waste plans will be given a more prominent role and steps will be taken to ensure that enough land is reserved during land use planning for waste management</p>
Targets	<p>Waste Avoidance/ Zero Waste The aim is to achieve a decline in the amount of municipal waste by the year 2016.</p> <p>Recycling or recovery Goal that in 2016, 50 % of all municipal waste is recycled as material 2016, at least 70 % of all construction waste will be used as material and energy 2016, 100 % of all municipal sludge will be recovered, either to be used as energy or for soil conditioning 2016, 80 % of municipal waste is recycled or used as energy.</p> <p>Diversion from Landfill Municipal waste - By 2016 - a maximum of 20 % ends up at landfills The aim of the National Waste Plan is that by 2016 a maximum of between 460,000 and 500,000 tonnes of municipal waste would end up at landfills and that in 2016, landfill numbers would be between 30 and 40</p> <p>Energy from Waste By 2016 - 30 % of all municipal waste is used as energy</p> <p>Other targets – No specific targets</p>
Development of the Waste Strategy?	In addition to objectives and targets, the plan also lays down the measures required for achieving them and the parties responsible for implementing them. The purpose of the plan is to guide players and decision-makers in different sectors so that the Government-approved objectives concerning the recycling society can be met.
How are the targets monitored and reported?	The Ministry of the Environment and the Finnish Environment Institute will draw up (review in 2013) a monitoring programme for the assessment of the implementation and impacts of the plan. The programme will list the indicators to be monitored in connection with the most important steering instruments. Most of the indicators will be based on existing information systems and statistics.
How are the schemes implemented?	<p>The implementation of the Plan will also be monitored as part of the monitoring reports drawn up in accordance with the environmental and quality systems maintained by the individual sectors (municipal waste management, and the waste management in industry, mineral extraction, construction, agriculture, trade and services).</p> <p>The Plan also proposes that industrial sectors would in their sector-specific material-efficiency agreements set targets for reducing specific waste volumes and increasing recycling rates.</p> <ul style="list-style-type: none"> ■ Promote the incorporation of standards of recycled materials in product standards for building products and packaging ■ Studies will be carried out on which natural resources should, from the point of view of the environmental policy, be subjected to economic steering ■ Quality and environmental compliance criteria will be drawn up for certain recycled materials. Recycled materials will be given priority in public construction and the use of waste-based fertiliser products will be promoted in landscaping and in agriculture by providing advice on the matter ■ Safe use of recycled materials will be guaranteed

	<ul style="list-style-type: none">■ Permit based steering will be used for ensuring an adequate energy efficiency of waste incineration and efficient recovery of landfill gas■ Promote the construction of biogas plants so that manure and certain other types of waste can be utilised■ The chances of launching a technology programme will be assessed. Measures will be taken to ensure sufficient funding for research and development of steering measures of material efficiency. Measures will be taken to provide SMEs with more services allowing them to improve their waste management and material efficiency
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■ **The Netherlands**

Waste Strategy Reviewed:	Netherlands – 2 nd National Waste Management Plan (LAP) 2009 – 2021
Context and Date	<p>2008 - Figures show that until 2000 a relative decoupling could be seen between total waste production in the Netherlands and economic growth, because waste production grew less quickly than the GDP. From 2000, Netherlands is in fact looking at an absolute decoupling, with an increase in GDP and a decrease in waste production.</p> <p><i>“As the Netherlands is gradually reaching the limits of the possibilities of further reduction in detrimental environmental impact due to waste (such as the further reduction and better reuse of waste) via sectoral waste policy, a further reduction in the environmental impact of waste is envisaged by means of a chain approach within waste policy. Intervention points earlier in the chain are sought, such as during product development. For the reduction of environmental impact in the waste phase, the whole chain must be taken into account, and that the efforts to reduce the environmental impact in the waste phase may not result in shifting the environmental impact to other phases in the chain “</i></p> <p>The key legal motivation for the 2nd national waste plan was because Europe and the Environmental Management Act make it mandatory.</p>
Scope of Strategy	<p>All household waste All trade, services and government waste All of building and demolition waste All industrial waste</p>
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u></p> <p>As much waste as possible must be recovered, that only waste which cannot be recovered may be disposed of, and that only incombustible waste may go to landfill</p> <p>Activities to reduce environmental impact in the chain are introduced where the greatest environmental gain is to be made (most efficiently). Particular efforts will be made on the priority streams which “produce” throughout their whole material chain.</p> <p>Intervention earlier in the chain can result in design changes, the provision of services instead of the manufacture of products, using products differently, more reuse.</p> <p>Priority will be given to the following streams:</p> <ol style="list-style-type: none"> 1. paper and cardboard 2. textiles 3. building and demolition waste 4. organic waste/food residues 5. aluminium 6. PVC 7. bulky household waste <p><u>Recycling/recovery</u></p> <p>In the coming years the policy relates to waste separation at the source will continue to be pursued. 83% of Dutch waste (consumers and businesses) is currently separated at source</p>

	<p><u>Diversion from Landfill</u> In the Netherlands it is not permitted to dispose to landfill reusable or combustible waste. This waste is subject to landfill bans that are embedded in the Decree on landfills and bans on the dumping of waste. Waste may only be disposed to landfilled when it is not reusable or cannot be incinerated</p> <p><u>Energy from Waste</u> Non-hazardous waste Optimal usage of the energy content of waste that cannot be reused Better usage of residual heat from waste incineration (The best opportunities for increasing the energy performance mainly involve the sale of the generated (residual) heat.) Hazardous waste The Netherlands no longer has any specific incineration capacity for the processing of hazardous waste, except for specific hospital waste. For incineration of Combustible hazardous residual waste, the Netherlands is now mainly dependent on the available incineration capacity abroad</p> <p><u>Litter Recycling.</u> No specific themes</p> <p><u>Carbon</u> No specific themes</p> <p><u>Other</u> Use of the Cradle-to-Cradle (C2C) concept as source of inspiration in the seven priority streams targeted in the context of chain-oriented waste policy</p>
Targets	<p><u>Waste Avoidance/Zero Waste</u> total waste production in 2015 may not be greater than 68 Mton and in 2021 may not be greater than 73 Mton (60 Mton in 2006)</p> <p><u>Recycling or recovery</u> Increase in recovery from 83% of all waste in 2006 to 85% in 2015 Increase in recovery from 51% of all household waste in 2006 to 60% in 2015 Increase in recovery from 46% of all trade, services and government waste in 2006 to 60% in 2015 At least maintain the percentage already achieved in 2006 in the Netherlands of 95% recovery of building and demolition waste, despite the expected steep increase in the production of this waste stream in the coming years Maintain the percentage already achieved in 2006 in the Netherlands of 90% recovery of industrial waste</p> <p><u>Diversion from Landfill</u> - No specific target</p> <p><u>Energy from Waste.</u> The objective is to reduce the landfilling of combustible residual waste to 0 Mtons by 2012</p>

	Other targets In the context of the integral chain approach to waste materials policy: reduce the CO2 emission by 30% in 2020 compared with 1990
Development of the Waste Strategy?	<p>A long-term vision for waste policy was drafted. Important elements of this long-term vision include that in 2050 the market will find a beneficial, eco-efficient use for almost all waste, that detailed waste legislation and management is no longer necessary, and that European frameworks, among other things, ensure that waste policy has become a part of industrial, product and energy policy.</p> <p>The achievement of this long-term vision will be based on the three spearheads “strengthening innovative force”, “internalising environmental costs” and “chain approach”.</p>
How are the targets monitored and reported?	<p>The strategy gives a mix of Quantitative and Qualitative targets</p> <p>Data is only collected when required to underpin, legitimise and evaluate the waste and chain policy and to comply with international reporting obligations</p> <p>Reports will be published every year which describe how implementation of the LAP is progressing. Amongst other things, there will be reports on the capacity for thermal processing and the landfilling of waste, the extent of waste imports and exports, the total supply of waste in the Netherlands, the extent of recovery, the amount of waste that is disposed of.</p> <p>Inspection methods in which trust is the basic principle. Good businesses are receiving fewer visits and offenders are being monitored more often.</p>
How are the schemes implemented?	<p>To promote an effective enforcement policy, the following four programme lines have been mapped out:</p> <ol style="list-style-type: none"> 1. promoting the use of information-driven enforcement methods 2. developing the quality criteria for enforcement programmes 3. improving the cooperation between various government bodies 4. setting up an Enforcement Service Centre for local governments. <p>During the plan period of this second LAP, the chain approach in waste policy will be further implemented and broadened. In this, work will be done with, among other things, new priorities for policy implementation, inspired by the importance of minimising environmental impact in the whole chain, and the points of intervention for the achievement of environmental gain. At the same time, under consideration of the range of instruments, a general, broad basis for direction on chain solutions to environmental problems can be formulated.</p> <p>Where necessary and possible, the policy instruments available to the government will be concentrated on a chain approach, so that the desired direction arises from this. The ultimate objective is a single integrated policy framework for the whole material chain.</p>

■ Sweden

Waste Strategy Reviewed:	Swedish waste management 2012-2017
Context and Date 2011	<p>Waste management in Sweden is focusing more on waste minimization and waste prevention - exemplified by the long-term vision – “Zero Waste for 2020.</p> <p>Sweden is one of the leading nations in waste management –an impressive 99% of the household waste is recycled or processed through Energy from Waste.</p> <p>The national generation goal says that the overall objective of environmental policy is that the next generation is a society in which the major environmental problems have been solved, without causing increased environmental and health problems outside of Sweden.</p> <p>This plan replaces the previous Waste Management Plan of 2005: "Sustainable waste management - the Swedish waste management plan."</p>
Scope of Strategy	<p>Waste shall be managed in a way that achieves maximum environmental and societal benefits.</p> <p>Everyone participates in this effort: producers, businesses, municipalities and households.</p> <p>Covers MSW, C+I and C+D wastes</p> <p>Waste streams of priority:</p> <ul style="list-style-type: none"> ■ <i>food waste (target to reduce 20 % until 2015 compared with 2010)</i> ■ <i>Textiles Waste prevention</i> ■ <i>construction and demolition waste</i> ■ <i>Illegal exports of waste</i>
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u></p> <p>Preventing waste generation is also a priority in the national environmental objectives and in the national waste plan</p> <ul style="list-style-type: none"> ■ <i>Long term vision – “Zero Waste”</i> ■ <i>A resource-efficient society - vision 2020</i> <p>Improve the resource efficiency in the food chain</p> <ul style="list-style-type: none"> ■ <i>Less food waste</i> ■ <i>Recycling of nutrients from food and sewage sludge</i> <p><i>Prevention is a top priority. The most effective way to reduce resource consumption and environmental impacts is to prevent waste. Although the recovery is very valuable, it can only compensate for part of resource use and environmental impacts arising from the production of new products.</i></p> <p>Increased producer responsibility in the following areas:</p> <ul style="list-style-type: none"> ■ <i>Electrical/electronic products</i> ■ <i>Cars</i> ■ <i>Packaging</i> ■ <i>Newspaper</i> ■ <i>Tyres</i> ■ <i>Office paper (voluntary agreement)</i> ■ <i>Building- and demolition waste (voluntary agreement)</i> ■ <i>Farming plastics (voluntary agreement)</i>

	<p><u>Recycling/recovery</u> Reuse and recycling of construction and demolition waste</p> <p><u>Diversion from Landfill</u> Landfilling is a treatment method for waste which cannot or should not be recycled. Landfilling of organic or combustible waste is forbidden. The Swedish disposal of household waste has decreased more than in other EU countries. Only 1% went to landfill in 2010. Instead, the material is recycled or incinerated. Landfill ban on organic waste came into force in 2002, - This material now goes to composting and Anaerobic Digestion</p> <p><u>Energy from Waste</u> District heating from the combustion of waste is replacing fossil fuels, as is biogas derived from food waste. Recycling helps to reduce extraction of virgin raw materials. There is overcapacity of waste incineration plants in Sweden. Low gate fees for waste for incineration reduces the incentives for users to sort the waste for recycling. Sweden imports waste from Norway to use its capacity.</p> <p><u>Litter Recycling</u> – Nothing specific mentioned <u>Carbon</u> – Nothing specific mentioned <u>Other</u> – Nothing specific mentioned</p>
Targets	<p><u>Waste Avoidance/ Zero Waste</u> Long-term goals for 2020: a) to break the relationship between waste and economic growth b) to achieve clear, strong upward movement in the waste hierarchy By 2015, food waste shall be reduced by at least 20% compared with 2010-2015 at least 40% of food waste from households, restaurants, institutional catering and shops is recycled by digestion.</p> <p><u>Recycling or recovery</u> By 2020, reuse and material recycling of non-hazardous construction and demolition waste shall be at least 70% of the total arisings.</p> <p><u>Diversion from Landfill</u> - No specific target</p> <p><u>Energy from Waste.</u> - No specific target</p> <p><u>Other targets</u> The interim goal states that by 2020, emissions of greenhouse gases in Sweden, from activities outside the system for emissions trading, reduced by 40% compared to 1990. By 2015, at least 60% of phosphorus pollution in effluent shall be treated and used on productive lands, of which at least half should be used on arable land.</p>

Development of the Waste Strategy?	The EU framework Directive on Waste requires member states to work to prevent waste generation. Member states must develop waste reduction plans with the goal of reducing waste by 2020.
How are the targets monitored and reported?	Not mentioned
How are the schemes implemented?	<p>The local authorities may choose how to organize waste management. This option for municipal self-government is laid down in constitutional law. The local authorities may choose management system and municipal undertakings, separate or jointly with other municipalities.</p> <p>Municipalities and producers handle the management of household waste. The municipal costs are charged as a separate waste collection fee, and the producers' costs as a fee included in the price of the product. The local councils set the municipal waste collection fees and the producers decide on the amount of the product fee.</p>

USA and Canada

■ Vancouver

Waste Strategy Reviewed:	Vancouver - Integrated Solid Waste and Resource Management 2010
Context and Date	<p>The overriding principle of the Integrated Solid Waste and Resource Management Plan is the avoidance of waste through an aggressive waste reduction campaign and through the recovery of materials and energy from the waste that remains. (ISWRMP) has four goals:</p> <p>Goal 1: Minimise waste generation Goal 2: Maximise reuse, recycling and material recovery Goal 3: Recover energy from the waste stream after material recycling Goal 4: Dispose of all remaining waste in landfill, after material recycling</p> <p>The Plan follows the sustainability principles set out in Metro Vancouver's Sustainability Framework, the principles of Integrated Resource Recovery and the 5R hierarchy of resource management.</p>
Scope of Strategy	<ul style="list-style-type: none"> • Multi-family residential • Single-family residential • Institutional, commercial and industrial • Demolition, land clearing and construction
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u></p> <p><u>Minimize Waste Generation</u></p> <ul style="list-style-type: none"> ■ <i>Transfer additional waste management responsibilities to producers and consumers</i> ■ <i>Reduce or eliminate materials entering the solid waste system which hinder or limit the opportunities to achieve reuse, recycling, or energy recovery</i> <p><u>Recycling / recovery</u></p> <p><i>Maximize reuse, recycling and material recovery - focus on proactive approaches to reuse, increased recycling effort and implementation of a region-wide food waste composting program</i></p> <ul style="list-style-type: none"> ■ <i>Increasing the opportunities for individuals to reuse more materials involves increasing convenience and reducing impediments</i> ■ <i>Use the existing infrastructure effectively to achieve higher recycling rates</i> ■ <i>Provide opportunities to increase private sector recycling</i> ■ <i>Target demolition, land clearing and construction (DLC) sector for increased reuse and recycling In collaboration with municipalities and industry groups, develop a process to require DLC recycling at construction/demolition sites</i> ■ <i>Target organics for recycling and energy recovery</i> ■ <i>Reduce paper and paperboard being disposed</i> ■ <i>Target wood and plastics for reuse, recycle, and energy recovery</i> ■ <i>Target multi-family and industrial, commercial and institutional (ICI) sectors to improve diversion rates</i> ■ <i>Develop contingency plans for the loss of recycling markets</i> <p><u>Diversion from Landfill</u></p> <p><i>Dispose of all remaining waste in landfill, after material recycling and energy recovery –</i></p>

	<ul style="list-style-type: none"> ■ <i>There will be residual (post recycling) waste flows which exceed the aggregate capacity of the region's waste-to energy facilities. The Vancouver Landfill provides a local solution for remaining waste</i> ■ <i>Local public and private disposal sites for waste are expected to reach their capacity in the near future – identify future sites. Also Establish contingency disposal sites</i> <p><u>Energy from Waste</u> Recover energy from the waste Stream after material recycling</p> <ul style="list-style-type: none"> ■ <i>Use waste-to-energy to provide electricity and district heating (currently 140 GWh of electricity a year)</i> ■ <i>Recover energy from other solid waste management facilities(e.g. methane from landfill)</i> ■ <i>Utilise non-recyclable material as fuel</i>
Targets	<p><u>Waste Avoidance/Zero Waste</u> A target for the Metro Vancouver region to reduce the quantity of waste generated per capita within the region, calculated on a rolling 5 year average, to 90% or less of 2010 volumes by 2020.</p> <p><u>Recycling or recovery</u> Recycling rate from an average of 55% to a minimum of 70% by 2015</p> <p><u>Diversion from Landfill</u> increase the regional diversion rate from an average of 55% to a minimum of 70% by 2015 and an aspirational target of achieving 80% by 2020 assuming there will be sustained markets for all diverted material</p> <p>The overall 70% diversion target implies the following approximate diversion rates by sector:</p> <ul style="list-style-type: none"> ■ Multi-family 30% ■ Single-family 65% ■ Institutional, commercial and industrial 70% ■ Demolition, land clearing and construction 80% <p><u>Energy from Waste.</u> No specific targets mentioned</p> <p><u>Other targets</u> BC (British Columbia) Climate Action Plan This Plan sets a provincial target of 33% less greenhouse gas emissions by 2020, and 80% fewer by 2050.</p>
Development of the Waste Strategy?	<p>A key feature of the Plan is adaptive management – monitoring progress, identifying challenges, and finding solutions to overcome challenges.</p> <p>Reaching the primary goal of waste avoidance requires a reduction in the generation of waste. Metro Vancouver has few levers to directly control the volume of waste generated. So the target for waste reduction is one for the community as a whole to aspire to, rather than one the Greater Vancouver Sewerage & Drainage District (GVS&DD) can be held wholly responsible for achieving</p> <p>This Plan is driven by the underlying principles of sustainability but, for the sake of historic comparability, continues to use the conventional definition of 'diversion rate.</p>

How are the targets monitored and reported?	<ol style="list-style-type: none"> 1. Waste generation quantities for all sectors tracked year-over-year and on a rolling five-year basis 2. Overall diversion rate/rate per capita tracked year-over-year. 3. Energy outputs from solid waste and its beneficial use tracked year-over-year 4. Quantity of treated and untreated waste per capita going to landfill is tracked year-over-year <p>Metro Vancouver will develop a waste accounting system for the entire solid waste management system, identifying the quantities generated, recycled, composted, used for energy recovery, and disposed in landfill. Comparison of per capita disposal values will provide the most accurate assessment of progress of the Plan.</p>
How are the schemes implemented?	<p>Vancouver will continue to assess the success of initiatives outlined in the Plan against the overall trends in waste generation and the performance of waste to- energy facilities to determine the need for an emphasis of future resource allocations to the various strategies and actions.</p>

■ **New York State**

Waste Strategy Reviewed:	Beyond Waste: New York State Department of Environmental Conservation A Sustainable Materials Management Strategy for New York State 2010
Context and Date	<p>2010</p> <p><i>“New York State’s Beyond Waste Plan sets forth a new approach for New York State—a shift from focusing on “end-of-the-pipe” waste management techniques to looking “upstream”. This shift is central to the state’s ability to adapt to an age of growing pressure to reduce demand for energy, reduce dependence on disposal, minimise emission of greenhouse gases and create green jobs.</i></p> <p><i>This vision can only be fully realized if the state allocates resources for additional staff and infrastructure at the state and local level, if manufacturers take financial or physical responsibility for the reuse and recycling of the products and packaging they put into the marketplace, and if residents and businesses embrace their responsibility for proper materials management</i></p> <p><i>The strategy is a planning tool, and the contents of this Plan are not intended to create any substantive or procedural rights, enforceable by any party in administrative and judicial litigation with the State of New York.”</i></p>
Scope of Strategy	<p><i>“The Plan provides a direction and goals for solid waste management in New York State, alerting planning units, permittees, and the general public of the lens through which future solid waste planning, decision-making, and assessment will be viewed.</i></p> <p><i>The strategy covers MSW (quantitative goals), construction and demolition debris, industrial waste and biosolids (qualitative goals.)</i></p> <p><i>The plan seeks to change the way discarded materials are managed in New York State by progressively reducing the amount of materials that go to disposal over the 10-year planning period and the 20-year planning horizon”</i></p>
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u> Important to manage waste at the highest possible point in the hierarchy within the facility’s service area Product stewardship is a centrepiece of the Beyond Waste Plan – it requires manufacturers or brand owners to finance the collection and processing of recyclable materials, and, in most cases, also set aside funds to invest in education, market development, processing infrastructure or other program enhancements that improve the efficiency and effectiveness of the recycling system</p> <p><u>Recycling/recovery</u> Use materials in the waste stream for their highest and best use Recycling programs must be made available to and employed by all generators in all settings in the state; that is, that source-separation requirements extend beyond the residential sector to commercial, institutional and industrial generators and to public</p>

	<p>spaces, events and other gatherings. This is to enforce the message that all New Yorkers are required to recycle at work, home or any other space.</p> <p>Progressive reduction in state-wide waste disposal, with greatest initial impacts from 2013-2016. Additional impacts expected periodically as additional materials are added.</p> <p><u>Diversion from Landfill</u> Supplement the “economic market” clause with a designated list of recyclables This entails a programme to encourage communities to establish recycling programs for materials “where economic markets exist.” Progressive reduction in state-wide waste disposal, with greatest initial impacts from 2013-2016. Additional impacts expected periodically as additional materials are added.</p> <p>Establish disposal restrictions on bulk quantities of designated recyclables (not specified).</p> <p><u>Energy from Waste</u> Maximise the energy value of materials management. For residual waste that is not or cannot be prevented, reused, recycled or recovered, disposal methods (EfW) must be employed.</p> <p><u>Litter Recycling</u></p> <p><u>Carbon</u></p> <p><u>Other</u></p>
Targets	<p><u>Waste Avoidance/Zero Waste</u> MSW - the goal of reducing disposal to 0.6 pounds per person per day by 2030 The goal applies to the state as a whole; planning units are expected to develop their own baseline and goals based on similar progressive reduction in waste destined for disposal. The quantitative goal is intended to apply to MSW. While the state government has not established quantitative goals for the reduction of construction and demolition debris, industrial waste and bio-solids, the qualitative goals presented in the 'Themes' section apply to all of the waste generated in the state. State agencies and authorities should lead by example - Reduction in agency waste generation by 10% per year. Product stewardship - One material per year to cumulatively reduce or recycle 747,000 tons/year by 2030; reduce disposal of products containing mercury and other toxins.</p> <p><u>Recycling or recovery</u> Updated in 2000, the Solid Waste Management Act 1988 - increase recycling to 11.5 million tons/year. Develop reuse and recycling infrastructure and end-use markets - New infrastructure for increased recycling, particularly for harder to recover types of glass, organic, plastic and other materials The infrastructure is to also include food scrap recycling.</p> <p><u>Diversion from Landfill</u></p>

	<p><u>Energy from Waste.</u></p> <p><u>Other targets</u> Reduce GHG by 11.3 million metric tons of CO_{2e} Conserve 135 trillion BTUs (British Thermal unit) of energy by 2030</p>
Development of the Waste Strategy?	<p>Key Policy Themes:</p> <ul style="list-style-type: none"> ■ Update Solid Waste Management Act ■ Product Stewardship ■ Revenue Generating Programs ■ Returnable Container Law ■ Mercury Containing Products ■ Update Part 360 Solid Waste Management Facility Regulations; Provide Outreach and Technical Assistance ■ Educate the Public ■ Combat Climate Change ■ Develop Reuse and Recycling Infrastructure and End-Use Market
How are the targets monitored and reported?	<p>Not established quantitative goals for the reduction of construction and demolition debris, industrial waste and biosolids, the qualitative goals presented apply to all of the waste generated in the state. These include: Maximize Reuse; Maximize Recycling; Engage all New Yorkers—government, business, industry and the public—in Sustainable Materials Management; Foster Technological Innovation; Prioritize Investment in Reduction, Reuse, Recycling and Composting Over Disposal</p> <p>To measure recycling progress, the state will track per capita waste disposal, as well as per capita diversion of recyclables and organic materials. The regulator will evaluate the effectiveness of the new metric and the state’s progress against the disposal reduction goal in biennial Plan updates, which will assist the State Legislature and solid waste managers in making short and long-term policy decisions that promote both effective and environmentally responsible materials management.</p> <p>To improve monitoring NY state proposes to develop an on-line reporting system. This will collect more timely and accurate recycling and disposal data from solid waste and recycling facilities and planning units; work with industry to develop uniform methods for more accurate data gathering and reporting, using the new statewide performance metrics based on per capita amounts collected for recycling and disposal.</p> <p>Increase DEC’s authority and resources to enforce recycling requirements.</p>
How are the schemes implemented?	<p>Planning units will be afforded flexibility in determining how to best implement their programs. They will not be ordered to establish specific facilities or programs or be held to firm or mandatory goals. Rather, they will be asked to work as aggressively as possible to reduce the amount of waste destined for disposal</p> <p>New legal structure to include the following:</p> <ul style="list-style-type: none"> ■ Updates to the Solid Waste Management Act 1988

	<ul style="list-style-type: none"> ■ Set new goals and define new metrics; ■ Update and clarify recycling and green purchasing requirements for state agencies and Authorities to ensure the state leads by example; ■ Clarify the Solid Waste Management Hierarchy – mentions that product stewardship is the preferred approach to implementing the waste hierarchy. The updated act should make clear that the hierarchy is a statement of policy that communities should use as a guidepost, while using more advanced tools to evaluate the economic, environmental and GHG impacts of various alternatives to determine the best path Beyond Waste. ■ Generate and allocate new resources to move Beyond Waste - significant investment in planning, reuse, recycling and composting infrastructure, market development, education, outreach and enforcement ■ Reinforce recycling requirements for all generators ■ Supplement the “economic markets” clause in the current law (Section 120-aa of Article 6 of General Municipal Law) with a designated list of recyclables - The 1988 Act required that communities establish recycling programs for materials “where economic markets exist.” consistently viable markets; they include paper, glass, metal, plastics and yard trimmings. These would comprise an initial list of designated recyclable materials in the updated act; other potentially recyclable materials would be subject to the “economic markets” test. ■ Increase the regulator’s authority and resources to enforce recycling requirements - An updated act should supplement local enforcement of source-separation requirements with explicit authority for the regulator to enforce against generators who do not source separate designated recyclables in the Act.
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■ **Seattle**

Waste Strategy Reviewed:	City of Seattle : Solid Waste Management Plan – 2011 Revision – Preliminary Draft
Context and Date	Revised and preliminary draft released in March 2012. The March 2012 Preliminary Draft replaces the August 2011 Preview Draft. The Preliminary Draft is currently under review by the Washington Department of Ecology. This Plan revises Seattle's 1998 Solid Waste Management Plan, 'On the Path to Sustainability', as amended in 2004, however the overall direction in the plan remains the same.
Scope of Strategy	<p><u>Municipal Solid Waste</u> - Municipal Solid Waste, abbreviated as MSW, is solid waste that includes residual waste, recycling, and organic material discarded from residential and commercial sources.</p> <p><u>C&D</u> - The waste material that results from construction, demolition and land clearing, largely comprised of inert and organic material. Consists of, but is not limited to the following materials: wood waste, concrete, asphalt, gypsum wallboard, glass and scrap metal.</p> <p><u>Moderate Risk Waste</u> - The Local Hazardous Waste Management Program (LHWMP) manages moderate risk waste in Seattle and other areas of King County. Moderate risk waste (MRW) is hazardous waste generated by residents and in small quantities by businesses and institutions. This includes two categories of waste:</p> <ul style="list-style-type: none"> ■ Household hazardous waste (HHW), which is generated by residents ■ Conditionally exempt small quantity generator waste (CESQG), which is generated in small quantities by businesses, schools, and other institutions. <p><u>Special Waste</u></p>
Waste Strategy Themes	<p><u>Waste prevention:</u> Seattle Public Utilities (SPU's) waste prevention programmes work to reduce waste volumes from households and businesses. Waste prevention programmes also seek to reduce toxic substances in goods purchased by people, institutions and businesses. SPU organises waste prevention activities into programmes for the following:</p> <ul style="list-style-type: none"> ■ Reuse ■ Sustainable building ■ Onsite organics ■ Product Stewardship ■ Other waste prevention programmes <p><u>Recycling or recovery</u> Collection-related recycling strategies- continue to contract services to encourage competition, and monitor contractors Transfer Stations – (see implementation section)</p> <p><u>Systems and Facilities</u> - Seattle contracts with different companies for recycling processing, organics composting, and landfill disposal. This Plan proposes to stay with the contracting approach to end-stage MSW management. Processing and disposal innovations would come through the contracts with private service providers.</p> <ul style="list-style-type: none"> ■ C&D waste – develop new legislation, bans and training programs ■ Historic Landfills – Continue monitoring <p><u>Clean City Programs</u> Clean City is a set of programs that provides tools to abate graffiti, illegal dumping, and litter.</p> <p><u>Moderate Risk management</u> – maximise collection facilities</p> <p><u>Special Wastes</u> - maintain referral information</p>

Targets	<p>Recycling or recovery</p> <p>The following recycling targets (% recycled) are laid out in the strategy:</p> <ul style="list-style-type: none"> ■ MSW 60% by 2015 and 70% by 2022 ■ C&D 70% by 2020
Development of the Waste Strategy?	<p>Various state and local regulations, guidelines, and plans influence Seattle’s solid waste planning. These include :</p> <ul style="list-style-type: none"> ■ State of Washington law RCW 70.95 which requires solid waste plans and sets required content. ■ Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions (2010). ■ Beyond Waste in 2009 (updated). ■ Oregon State law regulates Columbia Ridge Landfill, in Arlington, Oregon, to which Seattle sends waste for disposal. <p>The City of Seattle also has numerous ordinances, resolutions and administrative rules governing solid waste management. These include</p> <ul style="list-style-type: none"> ■ Seattle City Council Resolution 30990 (the Zero Waste resolution) (2007) which moved the City of Seattle’s 60% recycling goal to 2012 (previously 1998, then 2008 and 2010) and set a new goal of 70% recycling by 2025. ■ Climate protection initiatives which have influenced solid waste management in recent years. ■ Solid Waste Code (SMC 21.36, 21.40, and 21.44). ■ Seattle Public Utilities’ (SPU’s) 2009-2014 Strategic Business Plan – sets utility priorities over 6 years ■ Department of Planning and Development – issues permits and land use for waste management facilities ■ City of Seattle’s Comprehensive Plan - city-adopted goals and policies ■ Public Health – Seattle & King County - regulates solid waste handling facilities in Seattle and King County
How are the targets monitored and reported?	<p>SPU’s core measurement and reporting is done by MSW sector, they also measure waste prevention to the extent possible. C&D measurement is not included in the annual calculations of Seattle’s progress towards its MSW 60% recycling goal. The primary area for reporting recycling progress is the City of Seattle Annual Recycling Report.</p> <p>SPU uses data and modelling tools to track recycling progress and analyse future programs. Data sources include routine detailed reports from SPU’s contracted collectors and processors, and yearly reports from recycling businesses.</p> <p>To see what people are putting in their bins, SPU conducts waste composition studies on 4-year cycles by sector. The sectors used are single-family sector, The multi-family sector recycled, the self-haul sector and the commercial sector.</p> <p>SPU’s Seattle Discards Model analyses recycling programme performance. The Recycling Potential Assessment model analyses future programmes. They also gather waste prevention data on a programme-by-programme basis. Data collection specifics:</p> <p>Residential (kerbside data) –</p> <ul style="list-style-type: none"> ■ Data comes from reporting requirements built into the authorities collection. ■ Composition studies ■ Home Organics Survey. The authority conducts a survey every 5 years. Information on how many households compost and grass cycle is combined with other data on average amounts of yard and food waste per household. SPU uses all of these data to estimate the weight of green waste diverted through the home organics programs ■ Organics (food vs. garden) estimated by the Seattle Discards Model - a statistical model that separates out the tons based on historical data relationships. ■ Oil and electronic from monthly contractor reports ■ Self haul data (1) self-hauled organics (for composting), and 2) a variety of other recyclable materials placed in drop boxes/Bring banks) ■ SPU uses scale house data (weight and trip) as customers enter the station to measure tons brought into transfer stations for

	<p>compost.</p> <ul style="list-style-type: none"> ■ Drop-box recycling tons are weighed when SPU hauls the material to the various processors <p>Commercial data:</p> <ul style="list-style-type: none"> ■ annual reports required from recyclers and processors through the City of Seattle Recyclers Business License <p>Waste prevention data</p> <ul style="list-style-type: none"> ■ SPU tracks waste prevention on a programme-by-programme basis. Seattle use a variety of methods to measure tons not generated. These methods include the following: self-weighing; pre- and post intervention surveys (attitudes, behaviours, participation rates); collection data; composition studies; and estimation (modelling). The best approach is to build evaluation methodology into new waste prevention programmes and campaigns.
<p>How are the schemes implemented?</p>	<p><u>Waste prevention:</u> <i>SPU organises waste prevention activities into programs for reuse, onsite organics management, sustainable building, and product stewardship</i></p> <p>Reuse</p> <ul style="list-style-type: none"> ■ <i>Continuing and enhancing programs at the city's transfer stations to divert more materials before they enter the station, and to direct C&D loads to C&D recycling processors</i> ■ <i>Continuing involvement and support for industrial commodities exchange</i> ■ <i>Continuing and enhancing programs to divert reusables to charities</i> ■ <i>Increasing electronics diversion by adding more products to Washington State's electronic product recycling law, and by promoting private donation of electronic products to places that refurbish them</i> <p>Sustainable building</p> <ul style="list-style-type: none"> ■ <i>Continuing to expand C&D prevention and recycling programs. This includes developing grading standards for dimensional lumber and promoting house moving.</i> ■ <i>Supporting the initiatives listed under C&D in this Plan</i> <p>Onsite organics</p> <ul style="list-style-type: none"> ■ <i>Continuing to promote backyard composting and 'grasscycling'</i> ■ <i>Continuing programs for commercial food businesses to donate edible food to feeding programmes. Supporting feeding programmes in keeping food fresh and composting leftovers. Helping commercial kitchens find efficiencies</i> ■ <i>Focusing community grants on schools to increase food and yard waste collection</i> ■ <i>Supporting schools and business to comply with food packaging regulations so that all food serve-ware is recyclable or compostable</i> <p>Product Stewardship</p> <ul style="list-style-type: none"> ■ <i>Northwest Product Stewardship Council (NWPSC). The NWPSC is a coalition of governmental organizations that conducts studies and promotes product stewardship programs and policies.</i> ■ <i>Developing a strategic framework for product stewardship actions</i> ■ <i>Continuing to work with the NWPSC to promote product stewardship, and increase the range and effectiveness of product stewardship at the state level</i> ■ <i>Continuing to support national dialogues through the Product Stewardship Institute</i> ■ <i>Pursuing local regulation for select products when state and regional action is not forthcoming</i> ■ <i>Tracking efforts toward product stewardship solutions, for example, producer fees for products commonly found in the city's kerbside collection programs</i> <p>Other waste prevention programs</p>

- Expanding city green purchasing efforts to city facilities construction and standard specifications for work in the public right-of-way
- Continuing to seek packaging waste reduction and aggressive controls on chemicals
- Continuing the online junk mail and yellow pages phone books opt-out service, and working with phone book businesses to change Washington State regulations that require white pages phone book delivery

Recycling or recovery

Collection-related recycling strategies target a range of actions in different sectors:

- Enhancing and increasing education. Increasing awareness of customer options such as free recycling extras, larger recycling carts.
- Increasing enforcement of recycling
- Banning certain materials from disposal in the garbage
- Introducing pet waste and diaper composting

Collection system structure recommendations include:

- Continuing to contract for collection services
- Continuing to monitor collection performance
- Considering changing single-family residual waste collection from weekly to every other week after evaluating 2012 pilot project

Transfer Stations

Transfer facility recycling recommendations, as seen in the recycling recommendations above, include strategies for self-haul that focus on:

- Banning certain materials from disposal in the residual waste
- Making reuse and recycling drop-off more convenient
- Educating self-haulers about recycling opportunities
- Other transfer facility recommendations keep current stations running as well as possible, and plan for running and taking advantage of the rebuilt city stations.

Processing and disposal

Recycling processing recommendations centre on contracting, and propose:

- Continuing with contracting out city collected recycling processing
- Continuing to allow open-market processing services for material privately collected from commercial sector
- Evaluating the best contracting approach to prepare for 2013 to 2019 contract end

Organics processing recommendations centre on contracting, increasing capacity, and compostable materials, including:

- Continuing with contracting out city-collected organics processing
- Continuing to allow open-market processing services for commercial sector
- Supporting composting capacity development, including possibly anaerobic digestion. Pursuing competitive contract process after current contract ends.
- Continuing to encourage backyard organics composting
- Supporting changes to food packaging and labelling in ways that promote composting and reduce contamination, enhance contamination outreach and enforcement

Landfill disposal recommendations centre on the contracting approach:

- Continue with contracting for landfill disposal
- Do not pursue or authorize direct combustion of mixed MSW. Do not authorize such facilities.
- Monitor and consider emerging conversion technologies
- Evaluate contracting approach and disposal alternatives as 2028 nears

C&D waste

C&D recommendations set goals, target certain materials, set facility standards, and modify permit requirements, including

- *Creating city-wide C&D recycling goal of 70% of arisings by 2020*
- *Developing, with private processors, an advanced level facility certification process*
- *Banning metal, cardboard, plastic film wrap, carpet, and scrap gypsum (new construction) by 2013. Banning clean wood and tear-off asphalt shingles by 2014.*
- *Requiring recycling reports from contractors as a term of their Final Permit.*
- *Continuing and building on existing programs for LEED and Built Green, salvage, and hybrid deconstruction, coordinating with waste prevention activities*
- *The materials bans will be phased in. All bans will begin with a period of education.*

Historic landfills

SPU will continue to monitor and maintain Kent Highlands and Midway in accordance with regulatory requirements and to the satisfaction of adjacent communities

- *Reduce monitoring requirements as appropriate, with regulatory concurrence*
- *Continue to monitor and control landfill gas at Interbay and Genessee sites*
- *Respond to problems at historic in-city landfills on a case-by-case basis*
- *Pursue possible site de-listing and future beneficial use of the Kent Highlands and Midway landfill sites*

Clean City Programs

Clean City programs abate graffiti, illegal dumping, and litter:

Anti-graffiti program

Anti-graffiti recommendations include plans to:

- *Implement the 2009 to 2010 private property task force's recommendations*
- *Encourage reporting, translation of outreach materials, and development of strategic partnerships to leverage resources*
- *Amend the Seattle Municipal Code (SMC 12.A-08-020) to include stickers in the list of prohibited materials*
- *Redeploy abatement resources across city departments to better address graffiti abatement on parking pay stations*
- *Enhance community involvement and public education. Develop a customer satisfaction measurement tool*
- *In the long-term, increase program emphasis on prevention, apprehension and prosecution, and interdepartmental and inter-agency collaboration*

Illegal Dumping Program

Illegal dumping recommendations include plans to:

- *Improve enforcement protocol*
- *Provide additional staff training*
- *Expand use of existing database*

	<p>Litter Program</p> <ul style="list-style-type: none"> ■ <i>Litter program recommendations include a key item to address Metro bus zones. Many bus shelters are shifting to canopies attached to privately-owned buildings. Clear roles, responsibilities and design standards will ensure these shelters receive proper litter services.</i> <p>Moderate risk management</p> <ul style="list-style-type: none"> ■ <i>Providing the maximum possible number of service hours at Seattle's Moderate Risk Wastes (HHW) collection facilities</i> ■ <i>Collecting CESQGs on and on-going basis</i> ■ <i>Expanding outreach for hazardous materials collection services, and providing outreach to the elderly, homebound, non-English speaking population, and historically underserved communities</i> ■ <i>Working to secure state product stewardship legislation for unwanted medicines, mercury-containing lighting, and paint</i> <p>Special wastes</p> <ul style="list-style-type: none"> ■ <i>Continue to maintain up-to-date referral information for special wastes</i> ■ <i>Continue programs to create better end-of-life solutions for problem materials, such as state-level product stewardship laws for fluorescent lighting and consumer electronics</i>
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■ **Nova Scotia**

Waste Strategy Reviewed:	Our Path Forward: Building on the success of Nova Scotia's solid waste resource management strategy (2009)
Context and Date	<p>In 1995, Nova Scotia began a new approach to waste management, as set out in its Solid Waste Resource Management Strategy. Waste was no longer a nuisance, but a potential resource that required new management approaches. This 2009 strategy builds and develops the original goals established in 1995.</p> <p>This policy provides clear direction on how NS can increase our success and maintain our leadership position in solid waste management 'our path Forward' contains six goals and key actors to facilitate the outcomes.</p>
Scope of Strategy	All waste – However, a focus on C & D waste and household waste.
Waste Strategy Themes	<p><u>Waste Avoidance/Zero Waste</u></p> <p>Goal 1: Increase participation in waste prevention and diversion Nova Scotia has one of the highest waste diversion rates in Canada currently (about 68%) Policy looks at what incentives are necessary for Nova Scotians to benefit from increased waste prevention and diversion There is an identified need to continue to find new ways to turn waste into valuable products and materials</p> <p>Goal 5: Increase producer responsibility for end-of-life management of products and materials - NS will ensure the regulatory environment supports product stewardship, including Extended Producer Responsibility (EPR). NS will develop an EPR Action Plan.</p> <ul style="list-style-type: none"> ■ Encourage producers to design products to minimize the impacts to the environment and human health ■ Transfer end-of-life responsibility for waste products or materials from taxpayers to producers and importers ■ Give government the responsibility for setting performance targets, creating a level playing field for producers and importers, and ensuring public has free and open access ■ Give producers and importers the responsibility for program design, operation, and funding <p><u>Recycling/recovery</u></p> <p>Goal 3: Increase waste diversion - By recycling and composting materials in Nova Scotia, resources are re-circulated through the economy, resulting in jobs and income for Nova Scotians.</p> <p><u>Diversion from landfill</u></p> <p>Nova Scotia has made substantial progress in solid waste resource management since the release of the <i>SWRM Strategy</i> in 1995. However, the percentage of materials diverted has reached a plateau with significant quantities of valuable resources such as food and yard waste still ending up in landfills. This represents lost opportunities for resource recovery and has broader environmental and economic impacts.</p> <p>Goal 4: Increase cost-effectiveness of diversion programs: NS will require renewal of Regional Plans. NS will evaluate partnerships. Successful participation and application of waste diversion requires effective education and compliance programmes working together.</p> <p>Goal 6: Increase diversion of construction and demolition waste - NS will collaborate with C&D waste generators and receivers to develop guidelines around best management practices.</p> <p><u>Energy from Waste</u> - No specific information</p> <p><u>Litter Recycling</u> - No specific information</p>

	<p><u>Carbon</u> - No specific information</p> <p><u>Other</u> Also ensuring NS is integrating the long-term objective of the <i>Environmental Goals and Sustainable Prosperity Act (EGSPA)</i> to fully integrate environmental sustainability and economic prosperity.</p>
Targets	<p>All the Themes above feed into the singular target:</p> <ul style="list-style-type: none"> ■ waste disposal target of no more than 300 kilograms per person per year by 2015 <p>There are no separate targets for:</p> <ul style="list-style-type: none"> ■ Waste Avoidance/Zero Waste ■ Recycling or recovery ■ Diversion from Landfill ■ Energy from Waste. ■ Other targets
Development of the Waste Strategy?	See above themes
How are the targets monitored and reported?	Not mentioned
How are the schemes implemented?	<ul style="list-style-type: none"> ■ Develop policy framework for product stewardship, including EPR ■ Approach stakeholders to form a working group to develop guidelines for best management practices for maximum diversions at minimum costs ■ Increase diversion of construction & demolition (C&D) waste - Scope out need for C&D regulations ■ Review existing stewardship/EPR programs ■ Review policy options for packaging and disposable products reduction