Economic and Jobs growth for Queensland from the Waste Management and Secondary Resources Industry
Waste Minimisation and Sustainability Plan: Landfill Product Restrictions Plan

**Background**

This Plan details outcomes, policies and actions for the implementation of landfill restrictions including landfill bans. For the purposes of this Plan the following definitions apply:

- **A Landfill Restriction** – whereby any form of ‘sorting’ of the priority materials/material streams would be considered sufficient for those types of materials to be restricted from landfill; and with the waste generators, processors and transporters to be required to testify that the sorting has achieved predetermined quality specifications to the landfill operator/owner. Quality protocols for sorted secondary-resources would be required;

- **A Landfill Ban** – a complete ban of unsorted wastes or particular priority materials proposed by WRIQ in this Plan (regardless of origin), whereby those materials are totally diverted from landfill. This measure would be supported by defined ‘requirement to sort’ protocols setting out minimum requirements to apply irrespective of the destination of residual waste.

A landfill ban cannot be simply implemented at the landfill gate, it requires input from the waste generators and the waste and recycling industry; and bans must be supported by complementary interventions to change behaviours and stimulate market signals. Waste generators are critical to the success of landfill bans as the way that waste is produced, handled, stored and contained at the point of generation may significantly impact the ease of reprocessing or separation later. Whilst Queensland’s waste and recycling industry has a range of technologies to separate mixed waste loads, their effectiveness and economy is influenced by waste type, specific characteristics and volume. Source separation at the point of waste generation has productivity advantages and may be a requirement of an effective landfill ban depending on product/material stream. WRIQ supports the application of the waste hierarchy by all waste generators as it is critical to move wastes up the hierarchy and ensure that the most environmentally friendly disposal option is selected as part of normal business function.

Finally, WRIQ notes that Queensland does not have viable and truly inclusive landfill models to determine the full externalities associated with sending particular materials or products to landfill. Whilst other jurisdictions have undertaken detailed feasibility studies regarding the impacts of introducing landfill bans and landfill restrictions and their cost/benefits, this evidence-base is unavailable in Queensland.

WRIQ believes that the following objectives are critical in any decision making (including risk-assessment) process:

- Protection of human health and the environment, including the reduction of climate change impacts associated with the landfill of wastes;

WRIQ supports the application of the waste hierarchy by all waste generators as it is critical to move wastes up the hierarchy and ensure that the most environmentally friendly disposal option is selected as part of normal business function.
• Clear responsibilities and cooperation between government levels;
• Judicial and financial instruments;
• Transparency and clear communication to the public; and
• Clarity in establishing timelines for compliance”.

**Scope**

This Plan involves the participation of all organisations and individuals (including sole traders and all contractors).

WRIQ strongly believes that landfill bans and landfill restrictions are not effective on their own and may lead to unintended consequences when they are implemented in isolation. Rather, WRIQ believes that landfill bans and material restrictions should be complementary to other policy instruments such as Product Stewardship Schemes (Federal or State specific) or green energy tariffs, as well as the utilisation of current regulations, controls and effective enforcement.

Additionally, landfill bans must recognise available (built and planned) facilities. For example, a total ban on liquids and organic streams to landfill would be at the detriment of existing bioreactor landfills, but should be a consideration at facilities that are under designed and all open pit or trench facilities.

WRIQ would also like to highlight the issues associated with determining the effectiveness of landfill bans, particularly in an environment where base-line data and historic and current materials flows are largely unknown. In particular, data relating to specific products (should specific product bans be implemented) are either unknown or unreported by product manufacturers and retailers. The lack of understanding of legacy wastes (for example e-wastes) has a proven impact on policies such as Product Stewardship as well as landfill bans and might create stress points which could lead to negative unintended consequences (such as illegal dumping or over-subscription of services).

WRIQ recognises that effective enforcement is critical to the success of landfill bans and restrictions. Secondary impacts on the environment and human health through incidents such as illegal dumping should materials no longer be accepted at landfill must also be taken into consideration. Resources to collect and monitor compliance and other data must be immediately available upon commencement of any ban or restriction, to avoid incidents associated with illegal dumping or illegal exports.

Lead-in times for commencement of any bans and/or restrictions must also be appropriate to the development of markets, collection infrastructure, and reprocessing facilities.

WRIQ suggests that all landfill bans and restrictions are based on clear science-based policy and requests that the State Government make a ‘Call for Opportunity’ for each of the priority material streams proposed by WRIQ as part of this Plan. This broader consultation will assist government and industry in the identification of any unintended consequences as well as provide the opportunity to individual businesses within the waste and secondary resources recovery sector to provide confidential business plans and costs to government so that a complete impact statement can be developed.
Job Opportunities from Landfill Diversion

The employment opportunities for diverting waste from landfill are well documented. An Access Economic study (2009) which identified multipliers to determine employment in the waste management and recycling sector stated “a recent survey commissioned by the Australian Government identified that for every 10,000 tonnes of waste recycled 9.2 jobs are created. Only 2.8 jobs are created if the same 10,000 tonnes are sent to landfill”.

Other studies have reported similar opportunities for landfill diversion and the utilisation of other waste and recycling technologies ranging from:-

- Incinerating 10,000 tons (1 ton is equivalent to 1.016 tonnes) of waste creates one job; landfilling 10,000 tons of waste creates six jobs; recycling 10,000 tons of waste creates 36 jobs.

- Recycling results in up to 36 times more jobs than landfilling.

- Product re-use created 470 jobs per 10,000 tonnes processed per annum; recycling-based manufacturers create 162 jobs per 10,000 tonnes processed per annum; and conventional recycling facilities create 15 jobs per 10,000 tonnes processed per annum.

- The high value reuse and remanufacture (retained by keeping the original design) creates between 8-20 jobs per 1,000 tonnes of product processed; whilst recycling (where moderate value is retained) creates between 5-10 jobs per 1,000 tonnes of product processed.

- Additionally, it found that for every job created in the recycling industry another 1.4 jobs are created through associated economic activity.

WRIQ Action Plan 1 continued
Summary Discussion

WRAP PAS Framework

In other jurisdictions wood wastes going to landfill have substantially declined. Drivers for this include landfill taxes and subsidies for renewable energy generation. Queensland has no landfill tax and renewable energy subsidies are in decline at State and Federal level. As such, there are no mechanisms in place to currently divert this valuable resource from landfill, where it produces landfill gas which, if not captured, is a lost resource which contributes to greenhouse gas emissions.

Whilst there are limited thermal plants with capacity to accept wood wastes in Queensland (outside SEQ), opportunities do exist for reuse of high quality wastes, and the export of wood for panel board production should exceed domestic demand. Further practicalities associated with the diversion of wood from landfill include the sorting and grading of wood wastes and the establishment of grading quality protocols; lead in times; and practical enforcement of the restrictions.

To address quality and develop consistent minimum product standards, UK’s British Standards Institution (BSI) and WRAP produced PAS 111:2012. The aim of this PAS is to provide a specification for individuals and organizations recovering and processing post-industrial and post-consumer waste wood into wood products so that potential customers will be assured that they are procuring a material of consistent and verifiable quality. If the minimum specification is met or exceeded then the material is PAS 111 compliant; if the minimum requirements are not met, then the material is noncompliant, even if an end user’s specification is met.

Queensland should consider adopting and using where relevant existing product quality standards as already accepted such as the WRAP PAS framework used in an international context. This aligns the state with an international context and fast tracks adopting proven reuse of material streams.

E-Wastes and Batteries Extension

The term e-waste is used to describe both electronic and electrical wastes, that is, any items which rely on an electric current or electromagnetic fields in order to operate and contain a hard-drive or significant electronic components and/or a printed circuit board. The current Federal PS scheme only covers TVs, computers and peripherals but may be extended to include DVD players, music systems and similar devices. There are no plans to extend this scheme to electrical goods.

Introducing a state based product recovery program for all electronic wastes with a cord attachment would provide for eliminating harmful electronic wastes from being disposed in the states poorly designed landfill framework. With only 17% of the state’s landfills being fully engineered landfill bans of all electronic wastes provides for leveraging existing industry infrastructure and an improvement of the state’s waste receiving environment.

Queensland should also lead by example and implement a trail of a the federal battery stewardship program as a matter of priority.
Offered Landfill Ban Priority Materials

The following priority materials have been identified by WRIQ members as suitable for landfill restrictions and/or bans. WRIQ has classified the materials into two categories – Category 1, where opportunity exists to move the materials up the waste hierarchy and Category 2, where current poor practice may negatively impact human health and the environment.
<table>
<thead>
<tr>
<th>Material Ban</th>
<th>Action - Sources</th>
<th>Current Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood (untreated and low grade/treated)</td>
<td>Construction and demolition wastes; pallets for packaging; joinery and furniture manufacture; landscape industry; forestry industry; saw mills</td>
<td>Domestic - Panel board manufacture; animal bedding; equine surfaces; mulches; compost production; fuel for power generation Export – Panel board; fuel;</td>
</tr>
<tr>
<td>Whole Loads of Plasterboard</td>
<td>Construction and demolition wastes, building refurbishment and fit outs</td>
<td>Domestic – Soil supplement products</td>
</tr>
<tr>
<td>Whole Loads of Concrete, Asphalt and Masonry Materials</td>
<td>Construction and demolition wastes, building refurbishments and fit outs</td>
<td>Domestic – Recovered secondary-resources including recycled aggregate. Substitute for domestically and internationally sourced virgin resources. Selected product standards already exist - HB 155: 2002</td>
</tr>
<tr>
<td>Selected Concrete</td>
<td>Landfill ban of concrete greater than &gt;200mm in size Responsibility for all generators to comply</td>
<td>Domestic – Recovered secondary-resources including recycled aggregate. Substitute for domestically and internationally sourced virgin resources. Selected product standards already exist - HB 155: 2002</td>
</tr>
<tr>
<td>Metals from landfill at all state wide landfills</td>
<td>Car bodies, domestic appliances and other metal types All landfills in Queensland to implement metal recovery diversion plans, and Council tenders to be accepted from ERA holder entities only</td>
<td>Domestic capacity exists for gas recovery for fridges prior to them entering the scrap metal or landfill diversion system Export - metals</td>
</tr>
<tr>
<td>Mattresses</td>
<td>Volumes significantly increase under disaster management situations and mining camp relocation and temporary facility termination at the end of construction projects Initiate trials in SEQ for Mattress processing July 2015 Regional Diversion to follow 2016</td>
<td>Currently sent to landfill in Queensland although metals, foams and textiles are suitable for recovery and both domestic and export markets exist. Mattress recycling growing in VIC and SA through the third sector Saleable reuse of mattresses is unfeasible.</td>
</tr>
<tr>
<td>E-Wastes these also fall into Category 2 as their mismanagement may have negative risks to human and environmental health</td>
<td>Household, commercial and industrial, electronic and electrical wastes. Growing &gt;5% per annum in Australia. To include all electronic and small electrical goods (all sources), and domestic appliances. Recovery facilities to be established at all WTS and product reprocessed at licenced Queensland facilities</td>
<td>Domestic – Substantial existing infrastructure for the active disassembly of e-wastes across Queensland (including some regional areas). Domestic reuse of plastics and glass. Domestic capacity exists for gas recovery for fridges. Export – Rare Earths, Plastics, Glass</td>
</tr>
<tr>
<td>Polystyrene</td>
<td>Retail establishments, public building fit outs and major construction projects generate significant volumes of these streams. When landfilled it provides significant operational as well environmental impacts Trials of Styrene diversion be implemented at all Transfer Stations SEQ 2015 Regional Trials to follow in 2016 at major regional centres Total State Ban Styrene products 2017</td>
<td>Queensland recyclers have the capability to handle these streams and conversion locally is possible if the supply chain is secure. This would result in industry investment, economic returns to the state and new employment</td>
</tr>
<tr>
<td>Oils and Greases (hydrocarbon)</td>
<td>Mainly from industrial and commercial sources. Use growing proportionally to industry growth, particularly in the mining and resource sectors.</td>
<td>Domestic (priority area) – direct reuse (through high-grade, closed-loop recycling) Export (secondary consideration)</td>
</tr>
<tr>
<td>Batteries (also Category 2)</td>
<td>All Batteries – handheld through to motor-vehicle Recycling facilities to be established at all Waste Transfer Station SEQ 2015 Regional 2015 State-wide 2017</td>
<td>Federal Government Stewardship scheme implementation</td>
</tr>
<tr>
<td>Category 2</td>
<td>Issue</td>
<td>Opportunity</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Pharmaceutical Wastes</strong></td>
<td>Preventative measures (regulation and policy) governing disposal practices at point source are necessary and are supported by WRIQ. A State-based Product Stewardship or Take-back scheme for discarded (non-ingested) pharmaceuticals would also need to be implemented in conjunctions with a landfill ban.</td>
</tr>
<tr>
<td></td>
<td>The World Health Organisation report (2011) notes that “inappropriate disposal practices such as flushing unwanted or excess drugs down toilets or sinks and discharging them into household waste are common and may be the main contributor to pharmaceuticals in the environmental media such as surface water and landfill leachate”.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Organics and other liquids from trench landfills, open pits and unlined landfills</strong></td>
<td>Treated correctly Organics and Liquid streams can be processed either at Compost operations and used in remanufacturing soils and other valued added resources and where this is not feasible or possible these wastes should be processed in state of the art treatment operations, including lined landfills, according to strong regulatory protocols already set in place by the State Government.</td>
</tr>
<tr>
<td></td>
<td>Risk to human health, leachate, contaminated run-off into surface waters, contamination of ground water and local waterways contamination of soil, uncontrolled gas formation and migration of gas off-site.</td>
<td>WRIQ advocates the closure of 65% of the state’s public sector operating landfills with a priority focus for closure on all unlined / open trench or open pit facilities which fail to meet current minimum EHP 2014 landfill standards and design guidelines by 2019.</td>
</tr>
<tr>
<td></td>
<td>Risk to human health, tracking of infectious materials by vectors, Leachate, contaminated run-off into surface waters, contamination of ground water, contamination of soil</td>
<td>Aligned with the closure of these outdated facilities, a state wide audit and future infrastructure plan should be completed on the required needs to manage the state’s expected waste and recycling outputs for the next 30 years. This work should align with the agreed objectives detailed in the Queensland Plan adopted by the Government in December 2013. That document fails to identify the essential needs for the community in this area. A model plan to reference is the Victorian 2014 mapping for its sector.</td>
</tr>
<tr>
<td></td>
<td>WRIQ advocates the closure of 65% of the state’s public sector operating landfills with a priority focus for closure on all unlined / open trench or open pit facilities which fail to meet current minimum EHP 2014 landfill standards and design guidelines by 2019.</td>
<td>Closed facilities where necessary should be replaced with upgraded waste and recycling transfer operations for the affected communities. Upgraded community assets should include sorting / storing infrastructure to manage viable recycling streams where this is practical. All facilities as a minimum should have used oil recovery, used tyre recovery and metals recovery capability, and where product bans are initiated these streams should also be managed appropriately.</td>
</tr>
<tr>
<td></td>
<td>All medical wastes should only be disposed of at fully approved medical specialist treatment facilities. Where it is practical metals and other recyclable items can be recovered post treatment and recycled</td>
<td>Planning for future infrastructure will ensure the effective use of public funds expended in this area, provide industry with confidence that assets invested will be required and ensures the community have a full understanding and expectation of the assets required.</td>
</tr>
<tr>
<td></td>
<td>Risk to human health, tracking of infectious materials by vectors, Leachate, contaminated run-off into surface waters, contamination of ground water, contamination of soil</td>
<td>It will enable for State and Local Government plans to identify and allow for efficient buffer and the allocation of land in the areas the infrastructure is needed, as well for greater utilisation of existing industry infrastructure where new assets are deemed not required.</td>
</tr>
<tr>
<td></td>
<td>UNTREATED MEDICAL AND CLINICAL WASTES FROM UNLINED LANDFILLS</td>
<td>The action would result in removal of environmental harm and public health concerns from air borne and other vectors as well contamination to the environment water tables, would result in an improved state wide resource recovery performance, greater accountability to the use of public assets and ratepayer funds and create new opportunities to leverage existing waste management public assets and design / planning for new investments and technologies that will support the state’s population growth.</td>
</tr>
<tr>
<td></td>
<td>Risk to human health, tracking of infectious materials by vectors, Leachate, contaminated run-off into surface waters, contamination of ground water, contamination of soil</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All medical wastes should only be disposed of at fully approved medical specialist treatment facilities. Where it is practical metals and other recyclable items can be recovered post treatment and recycled</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Risk to human health, leachate, contaminated run-off into surface waters, contamination of ground water, contamination of soil</td>
<td>Agricultural tape and drums disposed into landfill consumes valuable airspace and has an economic value and recycling benefit.</td>
</tr>
<tr>
<td></td>
<td>Regional trails for diversion of all Agricultural tape and plastic drums, and plastic banana bags as a minimum July 2015 State wide ban implemented July 2017</td>
<td></td>
</tr>
<tr>
<td></td>
<td>State wide ban of burning of any agricultural plastics July 2015</td>
<td></td>
</tr>
<tr>
<td>Issue</td>
<td>Opportunity</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Resources sector operations including Mining Sites</td>
<td>Secondary Resources generated by the Primary Resources and Mining industry have significant economic value to the Queensland Secondary Resources Sector.</td>
<td></td>
</tr>
<tr>
<td>Ban of all on-site burial (incl. ERA 60) of whole tyres, oils and greases, hydrocarbon liquid streams</td>
<td>Australian industry has made significant investments in world class recycling and reprocessing operations that employ Queenslanders and Australians. This investments should be utilised by the Queensland resources sector over exporting of these complex hydrocarbon streams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specific streams identified by the industry can be reprocessed at Queensland based operations providing sound environmental recycling processes, local employment and economic value to the Economy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid waste being heterogeneous in nature contains many potential and known contaminants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber crumb can be reused into asphalt and to displace other virgin product applications in Queensland</td>
<td></td>
</tr>
<tr>
<td>Contamination of ground water, contamination of soil, loss of resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muds and liquids to be transported by approved transporters and processed at approved composting/disposal operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Used Oils and Greases to be recycled at approved ERA recycling and approved facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining activities conducting landfill operations are required to design and operate all on site landfills in accordance with EHP 2013 approved Landfill guidelines design criteria. Any facility failing to operate or build a landfill outside of these guidelines be restricted to disposing a maximum of 50 tonnes of general waste in any calendar year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All liquids containing hydrocarbons banned from onsite landfill disposal and to be treated off site at fully ERA approved treatment and recycling operations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole tyres banned from being buried on site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Up to 25 inch rim size July 1 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 26 inch and greater 1 July 2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ban of all regulated and hazardous waste (liquid and solid) at mine sites with approved landfills that are not duly designed to accept such complex wastes or have the appropriate liner protection.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C&D Wastes – landfill restrictions

Please refer to C&D Plan for supporting initiatives (such as the production of Mandatory ‘Resource Recovery Plans’, otherwise known as a Waste Reduction and Recycling Plan under the Waste Reduction and Recycling Act 2011).

For construction and demolition projects $>500,000 regardless of source for the following landfill bans:

- Whole loads of concrete, masonry and asphalt
- Whole loads of Plasterboard
- Concrete >200mm
- Only residual wastes may be landfilled after sorting

All waste loads, the following bans apply:

- Whole loads of concrete, masonry and asphalt
- Whole loads of Plasterboard
- Concrete >200mm
- Only residual wastes may be landfilled after sorting

Any non-ERA facility accepting C&D and / or C&I waste cannot discharge sorted or unsorted waste (mixed and single-stream materials) directly to landfill – All wastes must be processed at a licenced RR facility prior to landfill.

Driving Cultural Change & Avoidance and Minimisation - Encourages designers, architects, builders, contractors etc. to plan to avoid, minimise and recover wastes on C&D projects.

Reuse, Recovery and Recycling - A RRP has the opportunity to enforce the waste hierarchy. A RRP is a plan to help clients, developers and contractors in the C&D sector think before the start of a project about the waste that will be produced, how to reduce the waste and plan to sustainably manage waste that does arise. RRP’s as a legal requirement will assist Queensland to:

- tackle the large volume of waste sent to landfill (particularly in SEQ) that is generated by the C&D sector
- help improve recycling and re-use in the C&D sector
- address the number of illegal waste sites in Queensland by requiring all contractors to identify in advance, transport and recycling and/or disposal facilities and keep copies of all licences and insurances on file
- help tackle the number of illegal dumping incidents (Disposal and Management)
- improve how regulated/hazardous waste, particularly asbestos, is managed in Queensland
- innovate the industry by developing new ways of working involving waste
- improve material efficiency and reduce the C&D sector’s carbon footprint

The submission of a waste diversion report also demonstrates compliance with the disposal bans.

Implementation Dates for Landfill Restrictions

SEQ Only 1 January 2015
Major areas 1 January 2016
Regional Queensland 1 July 2018

Regulatory Framework (Existing or Amended)

Current regulatory framework in place. Minor additions suggested.

WRIQ has broadly consulted landfill operators regarding the requirements of S.100 and penalty provisions under S.101 Waste Reduction and Recycling Act 2011. The provision of disposal bans puts a regulatory enforcement duty on landfill owners and operators. The industry acknowledged and accepts this duty. However, disposal bans will only be effective in conjunction with other tools.

The proposed priority C&D waste materials for PS and/or landfill bans meet current requirements and decision-making structure outlined under S.77 Waste Reduction and Recycling Act 2011

Amendment to Schedule 3 Notifiable Activities requested, Environmental Protection Act 1994. Item 20 – should include construction and demolition wastes. They are currently excluded.

Meeting Objectives outlined in Sections 3.1 and 5 of EHPs Model Operating Condition for ERA60 – Waste Disposal

These proposed bans meet the commitments of EHP in the Guidelines: Landfill Siting, Design, Operation and Rehabilitation, 2013. see page 2

"The department is also committed to introducing elements of best practice environmental management to existing landfilling operations (where they can reasonably be introduced) with the objective of raising the standard and reducing the risk of pollution. Best practice environmental management is defined in Section 21 of the Environmental Protection Act 1994 (EP Act), as “…the management of the activity to achieve an ongoing minimisation of the activity’s environmental harm through cost-effective measures assessed against the measures currently used nationally and internationally”. The department will work with landfill operators wherever possible, or use the enforcement tools available under the EP Act if necessary, to introduce best practice environmental management and ultimately increase the level of environmental protection”.

Existing EHP Policy – Management of Fire Fighting Foam

Amendment to the Environmental Protection Regulation, ERA60, definitions – currently reads “facility includes a naturally occurring or constructed hollow or pit, including, for example, a gully, mining shaft or quarry, but does not include a hollow or pit on a farm used for receiving and disposing of general waste produced on the farm.”
Single materials/product landfill bans
- E-Wastes
- Batteries
- Oils and Greases
- Mattresses
- Polystyrene
- Agricultural Plastics

Implementation Dates for Landfill Bans – mattresses, e-wastes and polystyrene etc
SEQ Only 1 July 2015
Major areas 1 July 2016
Regional Queensland 1 July 2018

Implementation Dates for Landfill Bans – batteries, oils and greases etc
SEQ Only 1 July 2015
Major areas 1 July 2017
Regional Queensland 1 July 2018

Health and Environment landfill bans
- Pharmaceutical wastes
- Untreated medical and clinical wastes
- Organics and liquid wastes to trench, open pits and unlined landfills

Implementation Dates for Landfill Bans
SEQ Only 1 July 2015
Major areas 1 July 2017
Regional Queensland 1 July 2018

Landfill ban of soils contaminated with Fluorinated Organic Compounds from July 2017

Agriculture – Ban of on-site burial of chemicals, oils and plastics From July 2015

Resources – Ban of on-site burial of tyres, oils and greases (ERA and non-ERA facilities) From July 2015

Management Treatment and Disposal – this seeks to mitigate poor practices including mitigation of adverse effects from wrongful disposal and management.

Driving Cultural Change and Driving Waste Avoidance and Minimisation (including partnership working and recognising green procurement opportunities)

Reuse, Recovery and Recycling – Queensland will optimise economic benefits from reuse, recovery and recycling, this seeks to secure market certainty for industry investment, support Product Stewardship Schemes with additional policy drivers where implemented.

Management, treatment and disposal – this seeks to mitigate poor practices including mitigation of adverse effects from wrongful disposal and management.

Management treatment and disposal – this seeks to mitigate poor practices including mitigation of adverse effects from wrongful disposal and management

Reuse, Recovery and Recycling – Queensland will optimise economic benefits from reuse, recovery and recycling.

Management treatment and disposal – this seeks to mitigate poor practices including mitigation of adverse effects from wrongful disposal and management

Reuse, Recovery and Recycling – Queensland will optimise economic benefits from reuse, recovery and recycling.

Meeting Objectives outlined in Sections 3.1 and 5 of EHPs Model Operating Condition for ERA60 – Waste Disposal

These proposed bans meet the commitments of EHP in the Guidelines: Landfill Siting, Design, Operation and Rehabilitation, 2013. see page 2

"The department is also committed to introducing elements of best practice environmental management to existing landfilling operations (where they can reasonably be introduced) with the objective of raising the standard and reducing the risk of pollution.

Best practice environmental management is defined in Section 21 of the Environmental Protection Act 1994 (EP Act), as ‘...the management of the activity to achieve an ongoing minimisation of the activity’s environmental harm through cost-effective measures assessed against the measures currently used nationally and internationally’. The department will work with landfill operators wherever possible, or use the enforcement tools available under the EP Act if necessary, to introduce best practice environmental management and ultimately increase the level of environmental protection".

Regulatory Framework (Existing or Amended)
### Examples of International Landfill Bans

<table>
<thead>
<tr>
<th>Country</th>
<th>Bans/ Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Restrictions on organic waste (TOC&lt;5%) to Landfill (1996)</td>
</tr>
<tr>
<td>Germany</td>
<td>Ban on separately collected waste materials, unsorted municipal waste – the part of municipal wastes that can be recovered and untreated waste with TOC&lt;3% (1993 with a 12 year lead in period)</td>
</tr>
<tr>
<td>Sweden</td>
<td>Bans on the landfills of sorted combustible waste (2002) and organic waste (TOC&lt;10%) (2005)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Ban on the landfilling of combustible and biologically decomposable wastes, as well as separated construction and demolition wastes (1995)</td>
</tr>
<tr>
<td>Flanders, Belgium</td>
<td>Landfill ban on both unsorted waste and on separately collected waste materials (1998)</td>
</tr>
<tr>
<td></td>
<td>Landfill ban on combustible residual wastes (2000)</td>
</tr>
</tbody>
</table>
| Massachusetts, U.S.   | Bans on the landfills and combustion of a range of materials including:  
Asphalt pavement, brick and concrete; Glass and metal containers; leaves and yard wastes; metal; recyclable paper; single polymer plastics; white goods; tyres (banned from landfill only); and wood (banned from landfill only). |
| South Australia       | Landfill bans include oil and whole tyres from landfills (1 September 2010); computer monitors and TVs from (metro-only) landfills (1 September 2012); and all electronic and electrical goods state-wide from landfills (1 September 2013). |
| ACT                   | Landfill ban of e-wastes                                                                                                                         |
According to a recent WRAP report, the UK could save around GBP2.1 billion by banning unsorted wastes from landfill. The purpose of the study was to determine whether the costs and benefits of specific landfill bans and restrictions justified their use. Further goals were to understand how landfill bans and restrictions could assist the UK to meet their EU Landfill Directive targets for the diversion of biodegradable municipal wastes and opportunities for increasing business prospects and growth.

For paper and card, the study reported that the potential savings from restrictions from landfills could result in a net benefit to society of GBP130 million while a total ban could increase that to GBP720 million. For metals, the figures ranged from GBP75 million for a restriction up to GBP800 million for a ban; and for textiles, GBP 110 million for restrictions and GBP250 million for a ban.

Interestingly, for wood the report noted a restriction from landfill could result in net benefits to society of GBP 48 million but a total landfill ban would only offer savings of GBP 21 million. The report also noted a net cost for restrictions and bans of green wastes, plastics and e-wastes to landfill.

In summary, the report concluded that the climate change benefits and resource efficiency gains were greatest where a ban on landflling unsorted waste is implemented. As such, the report recommended the consideration of those materials in association with accompanying measures so that the requirements are not “side stepped”.

Whilst care must be taken in the application of these potential costs and benefits to a Queensland environment given the significant differences in the intensity of waste generation, existing infrastructure, market development and economics amongst other factors associated with the United Kingdom, the study provides an interesting insight into both a methodological approach and practical considerations.
