REPORT TO: **ENVIRONMENTAL AND CONSUMER PROTECTION COMMITTEE 15TH OCTOBER 2001**
PLANNING AND TRANSPORTATION COMMITTEE 29TH OCTOBER 2001

REPORT ON: - **NATIONAL WASTE STRATEGY**

REPORT BY: - **DIRECTOR OF ENVIRONMENTAL AND CONSUMER PROTECTION AND DIRECTOR OF PLANNING AND TRANSPORTATION**

REPORT NO: - **683-2001**

1.0 PURPOSE OF REPORT

1.1 To inform members of the 3 options identified to date in the Area Waste Plan Process.

2.0 RECOMMENDATIONS

2.1 That members note the 3 options contained in Appendices 1 – 3 for inclusion in an Options Paper to be prepared by the Tayside Area Waste Group.

3.0 FINANCIAL IMPLICATIONS

3.1 There are no direct implications associated with approval of this report.

4.0 DUNDEE 21 IMPLICATIONS

4.1 Resources are used efficiently and waste is minimised. Health is protected by creating safe clean pleasant environments. Pollution is limited to levels at which natural systems can cope.

5.0 EQUAL OPPORTUNITIES IMPLICATIONS

5.1 None.

6.0 BACKGROUND

6.1 In late 1999 the Scottish Environment Protection Agency (SEPA) published the National Waste Strategy for Scotland.

6.2 The Strategy is a framework document setting out an integrated approach to the management of waste in Scotland and incorporating key targets required to meet the European Union Framework Directive on Waste, as implemented in the UK by the Environment Act 1995.

6.3 Following on from this national strategy, eleven waste areas in Scotland were identified and Area Waste Groups established to prepare a plan for each area. Area Waste Plans will establish the Best Practicable Environmental Option (BPEO) for the management of waste within each area. They will reflect not only the need to achieve national targets on aspects such as recycling and reduction of waste to landfill, but also take account of the local circumstances pertaining to waste management.

6.4 The main role of Area Waste Groups is to ensure that the objectives of the National Strategy are met across Scotland. The progress so far of the Tayside Area Waste Group and the next steps in the process are outlined below: -

6.4.1 The Tayside Area Waste Group (Angus, Dundee and Perth and Kinross local authority areas) was formed in April 2000. The Groups is comprised of representatives of the local authorities (Waste Managers and Land Use Planners), SEPA (Group Chairperson and Area Waste Development Officer) and, more recently, a representative from the voluntary sector (Tayside Recyclers).

6.4.2 On 19th February 2001, the Environmental and Consumer Protection Committee approved participation in a Member/Officer Group and remitted the Convenors of Environmental and Consumer Protection and Planning and Transportation to attend the Group.

6.4.3 The primary role of this group is to oversee the development of the Area Waste Plan and to influence decisions which impact on the disposal of municipal waste.

6.4.4 A major element of the work undertaken to date by the Area Waste Group has been the production of the Strategic Waste Management Baseline Assessment. This assembles a range of technical data illustrating how current waste arisings are managed and setting out the existing waste management infrastructure and services in Tayside.

6.4.5 From this, the Group proceeded to develop a series of options for the management of waste in the Tayside area. The options included collection arrangements ranging from extensive use of mini recycling centres and kerbside collections through to those involving mixed waste collections. These were combined with a mix of technologies involving recycling, composting and energy recovery to process the collected waste. However, waste minimisation will be a fundamental component of the strategy, whichever option is selected. Following testing against a life cycle assessment tool and nationally agreed objectives, the extended list of options was narrowed down to three options as follows: -

6.4.6 Option A : Recycling (Appendix 1)
Option B : Thermal Treatment (Appendix 2)
Option C : Anaerobic Digestion (Appendix 3)

6.4.7 The three shortlisted options will be incorporated into an Options Paper to be produced in early October this year, which will provide the basis for consultations with the public, community groups, the waste industry, local authorities and national and local agencies. A total of 350 households in Dundee will be specifically targeted as part of this exercise.

6.4.8 The options have already been approved by both Angus and Perth and Kinross Councils, whose meeting cycles take place before those of Dundee City Council.

7.0 CONSULTATIONS

7.1 Chief Executive
Director of Support Services
Director of Finance

8.0 BACKGROUND PAPERS

8.1 None.

9.0 SIGNATURE

Director of Environmental and Consumer Protection Date: 4th October 2001

Director of Planning and Transportation Date: 4th October 2001

APPENDIX 1

OPTION A – RECYCLING

Description

In this option as much waste as possible, which can be recycled. Is source segregated and sent to be recycled. The waste is segregated by collection separately from kerbside collections and mini recycling centres. This segregated waste is sorted into separate materials at a materials recycling facility and transported to a factory where the material is re-used. Biodegradable garden and kitchen wastes are also collected from the kerbside and civic amenity sites for composting. The rest of the waste will go to DERL energy from waste plant or landfill.

Technology Survey

To recycle large amounts of materials requires as much separate collection of these materials as possible. The materials (paper, glass, metals, plastics and textiles) are collected from the kerbside in a separate container or bag from the rest of the waste or collected from mini recycling centres. This material is taken to a materials recycling facility where it is separated into different material types and packaged before being transported to a factory where it is made into a new product.

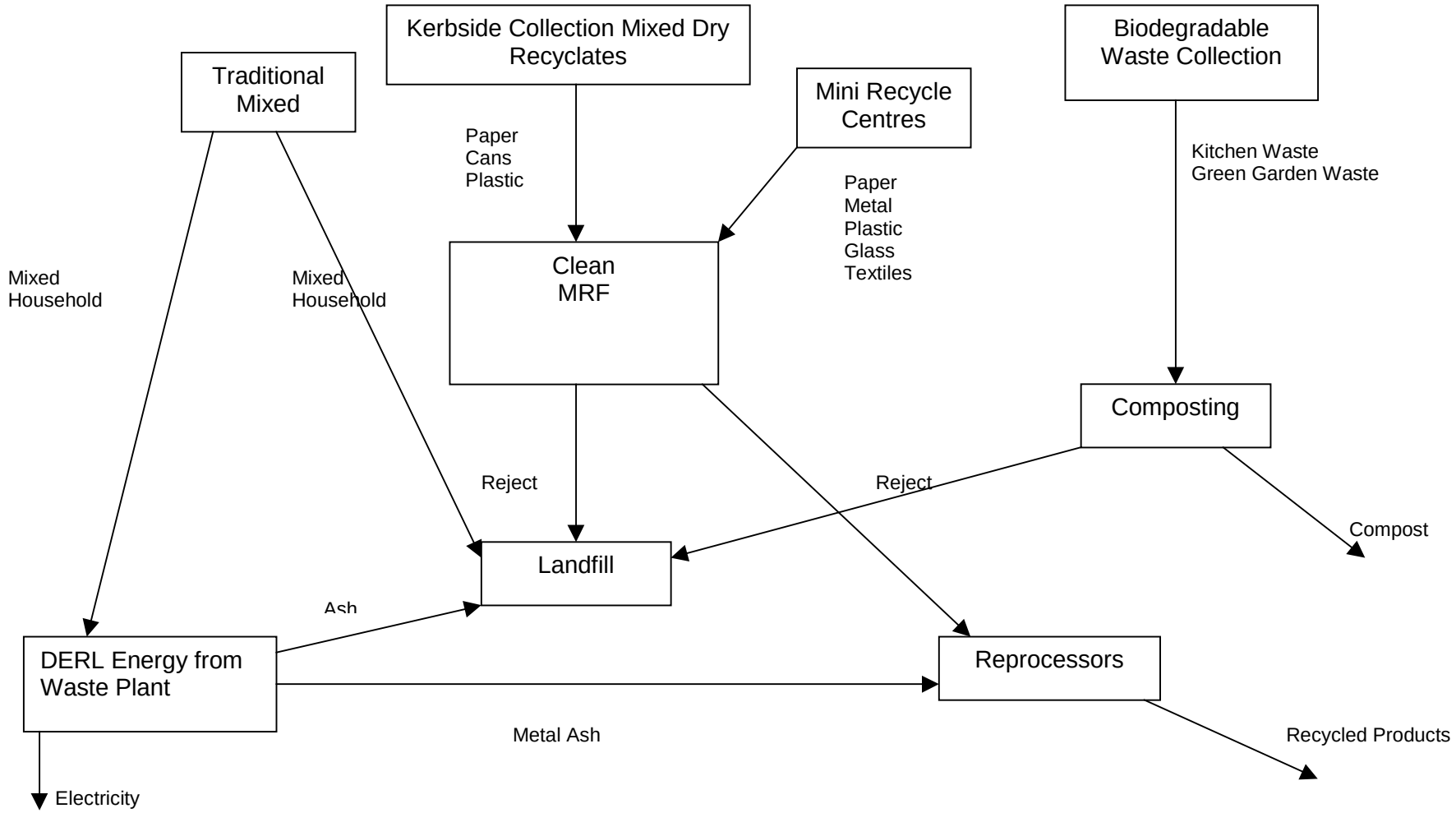
Option Summary

Comparison of Performance in 2020

Composting:	12%
Recycling:	38%
Energy recovery:	31%
Landfill:	19%

APPENDIX 1

Option (A) Recycling



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OPTION B – THERMAL TREATMENT

Description

In this option extra thermal treatment technology is used to recover energy from the waste. It is likely that this will not be incineration but different technologies such as gasification or pyrolysis. This is in addition to the DERL energy from waste plant in Dundee. Some waste is collected separately for recycling and biodegradable waste for composting.

Technology Summary

Pyrolysis waste is heated in the absence of oxygen at relatively low temperatures (400-800°C) to give off a mixture of gas, liquid and solid fuels. Gasification is a related technology, where waste is heated in the presence of oxygen at relatively high temperatures (800-1400°C) to give off fuel gas. These fuels in turn can be used to generate electricity, or refined into higher value products. The conversion efficiency of pyrolysis and gasification is greater than that of incineration. The main residues at char (~20% by weight of input) and fly ash (~4% by weight of input). These are relatively new technologies with only a few plants in the world taking municipal wastes (Germany, Japan and Australia).

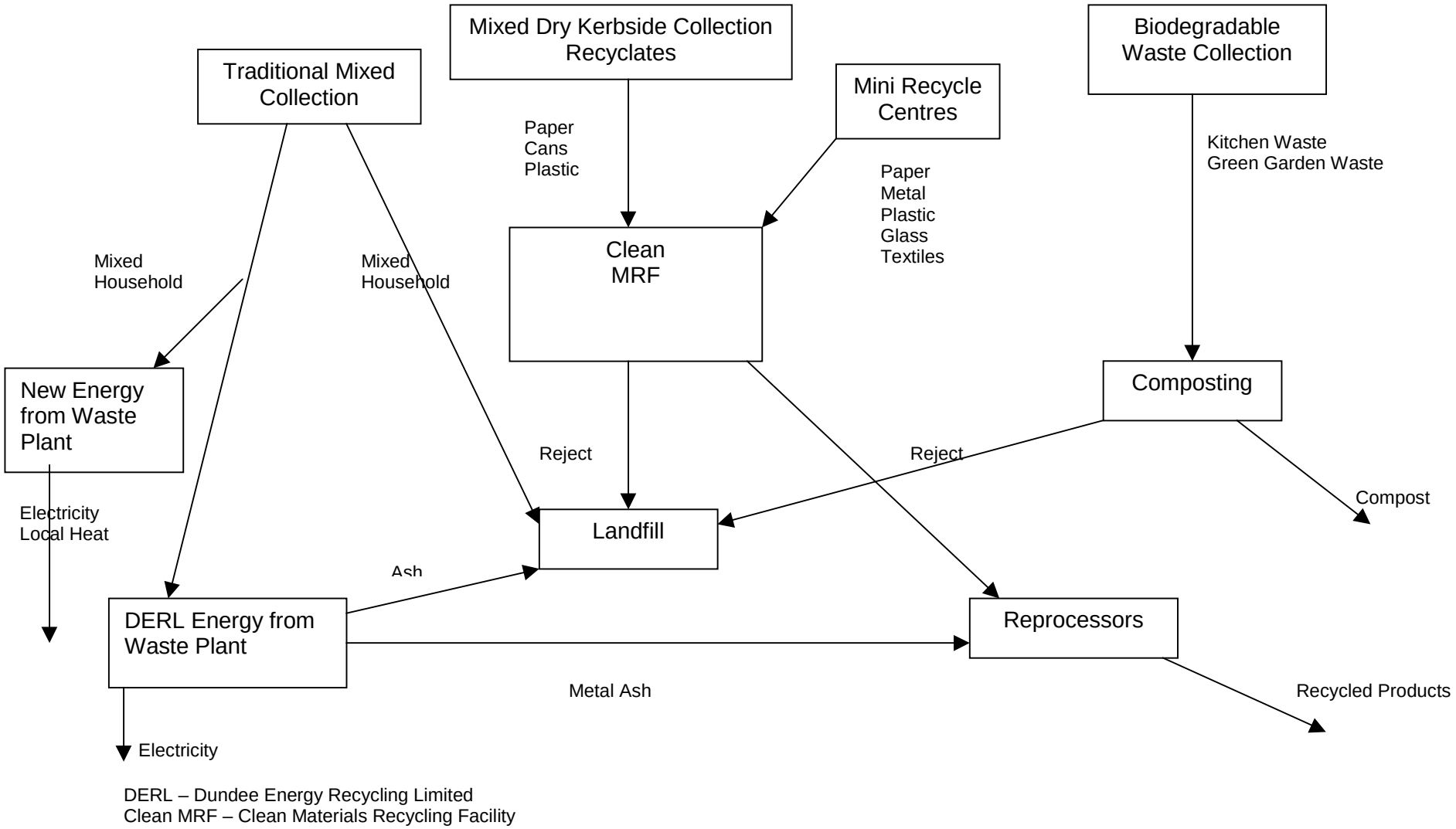
Option Summary

Performance in 2020

Composting:	12%
Recycling:	37%
Energy recovery:	37%
Landfill:	14%

APPENDIX 2

Option (B) Energy from Waste



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APPENDIX 3

OPTION C – ANAEROBIC DIGESTION

Description

This option relies on a large centralised anaerobic digestion (AD) plant. Source segregated biodegradable waste will be transformed by this plant into a soil conditioner and feriliser and a fuel gas. The gas can be used to produce heat or electricity. There will be some recycling of separately collected wastes. The rest of the waste will go to DERL energy from waste plant and landfill.

Technology Summary

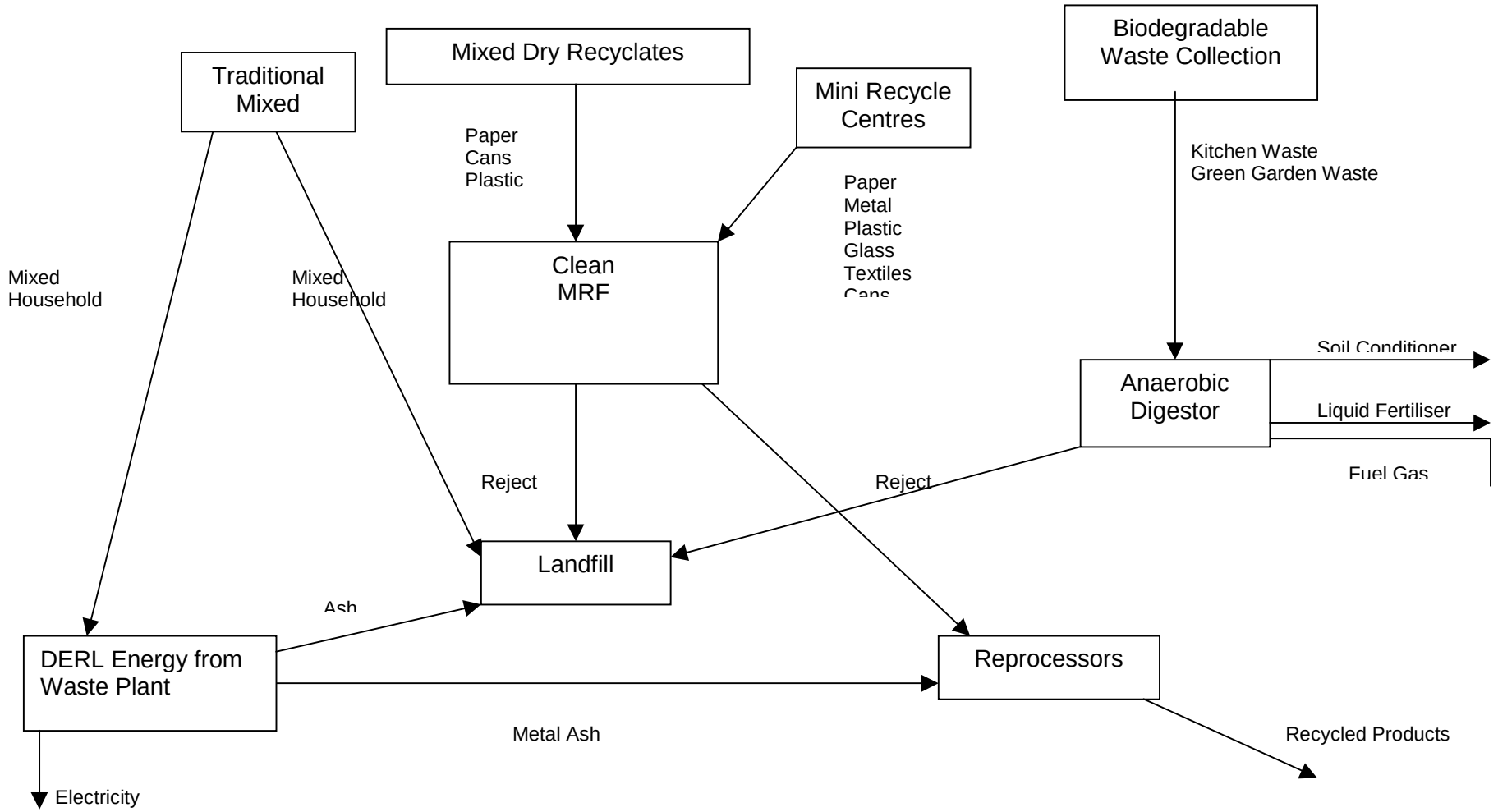
Anaerobic digestion is a biological process in which micro-organisms convert degradable organic matter into carbon dioxide, methane and water, in the absence of oxygen, leaving a reside known as digestate which can be used as a soil conditioner. This process happens inside a sealed vessel at a temperature of between 20 - 40°C. Methane is collected and used as a fuel directly or to generate electricity. Anaerobic digestion has been used extensively in the sewage treatment industry and agriculture, through municipal waste is a relatively new application of the technology.

Option Summary

Composting:	0%
Recycling:	36%
Energy recovery:	31%
Landfill:	9%
Anaerobic Digestion:	24%

APPENDIX 3

Option (C) Anaerobic Digestion



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