

**Operational Plan – Remade Scotland  
in support of Zero Waste Scotland**

**Year 2 Programme, 2009/2010**

**Proposal to:  
Scottish Government**

**April 2009**



Contract Reference: Operational Plan – Remade Scotland  
in support of Zero Waste Scotland

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By: Caledonian Environment Centre  
Glasgow Caledonian University  
5th Floor, Buchanan House  
Cowcaddens Road  
Glasgow G4 0BA  
T: 0141 273 1416  
F: 0141 273 1430

Contact: Colin Murchison  
Email [c.murchison@gcal.ac.uk](mailto:c.murchison@gcal.ac.uk)  
T: 0141 273 1364

The Caledonian Environment Centre is part of the School of the Built and Natural Environment, Glasgow Caledonian University and is supporting environmental research and policy development in Scotland.

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## 1 Background

Remade Scotland is a support programme which was initiated in 1999 by a number of key stakeholders to promote a more sustainable approach to waste management in Scotland. The Scottish Government has assumed responsibility for funding the programme, together with other delivery programmes, Waste Aware Scotland and WRAP to ensure an integrated delivery body approach.

In April 2008, the Caledonian Environment Centre, Glasgow Caledonian University was awarded a three year grant totalling £1,823,194 to continue the activities of Remade Scotland. As part of this a Zero Waste Scotland Programme was developed and agreed by the Caledonian Environment Centre, Waste Aware Scotland and WRAP. This Zero Waste Scotland programme identified where market interventions were needed to support greater recycling, and recovery of waste to meet some of the regulatory and strategic targets set by the Scottish Government.

One year on and a re-evaluation of the activities has led to a programme of activities for Remade Scotland to deliver during 2009/10. This document sets out those revised activities for agreement with the Scottish Government.

## 2 Remade Scotland's work programme for 2009/10

The work programme for 2009/10 is broadly as described in the 3 year *Remade Operational Business Plan*. However, we would propose modifying our work programme for 09/10 in order to reflect current areas of high priority for the Scottish Government. The table below details these proposed revisions with the primary change in emphasis being to commit significant resources to providing support to Councils to assist them evaluate and optimise their recycling schemes in order to achieve higher recycling recovery rates.

As the objective of the scheme optimisation is to work with Councils to assist them achieve higher recovery rates, Remade proposes developing the relationship with COSLA and working with the Local Authority members of the existing LARS Steering Group to help define and deliver a targeted programme of support to this Plan.



The programme budget for 09/10 is £607,608 and the activities are summarised in the following Table providing an indication of the staff effort required to deliver each of the activities.

Activity	09/10 Days
<b>Prevention</b>	
3.1. Waste Min in Public Bodies	51
<b>Recycling, Recovery and Composting</b>	
3.2. (a) Market Review and Analysis	125
3.2. (b) Material Flows	60
3.3 Data Modelling for ZWS	50
3.4 Kerbside Best Practice	200
3.5 Recycling Scheme Optimisations	200
3.6 LA Research & Support	100
3.7 Support for Community Groups	55
3.8. Contract Support	65
3.9 Organics Support Programme	170
3.10 Stakeholder Support	70
<b>Process, Product, Manufacture</b>	
3.11 Treatment Capacity Requirements	100
3.12. C&I Waste Flows	90
3.13. Programme Management	90
3.14 Heat Use Pilot	-
<b>Total</b>	<b>1,426</b>



## 3 Work Programme for 09/10

### 3.1 Waste Minimisation in Public Bodies

#### *Output from 2008/09*

A report on *Local Authority Internal Waste Management Opportunities and Good Practice* has been produced. This was based on information gathered from 28 of the local authorities through one to one interviews and an online questionnaire. A Case Study on the methodology and benefits of developing an integrated Print Management System in Fife Council is being produced highlighting the benefits of paper minimisation. A further study on the impacts of various Recharge Mechanisms is being finalised.

A workshop event was held on the 26<sup>th</sup> March 2009 to promote the report to an audience of 50 delegates drawn primarily from Local Authorities. Presentations were made by Remade Scotland, Aberdeenshire Council, Shetland Islands Council, Fife Council, Waste Aware Scotland and Envirowise. The discussions concluded that ongoing support is needed to assist local authorities reduce their own waste.

#### *Proposed Activity for 2009/10*

The output from the workshops and the research conducted for the report informed the development of the activities for the forthcoming year as:-

- **Promote the advantages and benefits** (especially financial) of waste minimisation to Chief Officers and Chief Executives as their support is fundamental to the success of such initiatives. This work will include the distribution of the case study materials to Local Authority Chief Officers, and to make representation to SOLACE. The work being undertaken will also be promoted to other public services including the health service.
- **Extend case study material** - The continued discussions with local authorities will seek to produce further examples of waste minimisation opportunities.
- **Facilitate 2 Network Meetings for Local Authorities** –Additional meeting will be held to promote the case study work with groups of local authorities.
- **Complete scoping study working closely with at least two Councils to develop a methodology for internal waste data capture** – A systematic approach to capturing Council waste arisings has been proposed. Remade Scotland will explore with two local authority leaders, a methodology for data capture of internal waste arisings.

### 3.2 (a) Market Review and Analysis

#### *Output from 2008/09*

Following a sharp reduction in recyclate prices in the second half of 2008 which arose from a wider global financial crisis, Remade produced an initial Report on the *Financial Exposure of Scottish Local Authorities Arising from the Reductions in Recyclate Material Prices*. The



report identified that due to the drop in recyclate values that Councils had a potential annual financial exposure of £3.9 million. However the extent of the financial exposure was limited by the fact that:

- There are domestic markets for around 50% of Scotland's recyclate i.e. News and Pams, Organics and Glass
- 50% of Councils have fixed long term contracts especially for News & Pams which alone contributes 20% of all Scotland's recyclate by weight and more than 30% by value.

The report was distributed through COSLA to all LAs and presented to the Scottish Waste Management Liaison Group. The content is now being incorporated in the full Market Analysis for 2007/2008 which is due to be launched at an event in May 2009.

The report also found that Councils were seeking further support for Contracts especially for their Kerbside Recyclate (see also Section 3.8 Contracts).

#### ***Proposed Activity 2009/10***

Remade Scotland has produced annual reports on the state of the market for Scotland's recycled materials. These reports provide a commentary on market security, market pricing and principal outlets for some of the main materials recycled in Scotland.

A further annual report on the state of Scotland recyclate markets will be produced in early 2010. This report will review market conditions, material and price trends and will seek to provide market intelligence to ensure ongoing security of material outlets and to identify the potential for investments in new reprocessing and manufacturing capability.

### **3.2 (b) Material Flows**

Local Authorities are regularly under pressure to demonstrate to both internal audiences, elected members and the public that materials recovered are being recycled in an appropriate and effective manner. Our Material Flow Programme looks at where recyclate materials arise and where they are ultimately treated/ recovered. They build on a detailed analysis of SEPA quarterly return information.

#### ***Output from 2008/09***

A detailed flow map of all Local Authority recyclate was developed identifying where it arises and where possible its outlets and end markets. Following discussions with COSLA and the Scottish Government it was considered appropriate that this flow map be made available to Councils online. However it has yet to be confirmed who will host this online version and for the time being the maps will be incorporated as an Annex or supplementary Paper to the Market Analysis Report.

#### ***Proposed Activity for 2009/10***

Working closely with CoSLA and SEPA, Remade Scotland will determine how best to report the previous work undertaken on recyclate flows. This will involve:



1. Develop detailed recyclate flow maps from each local authority which show the flow of materials to reprocessors and, where possible, end markets.
2. Analyse the location and distribution of outlets for LA recyclate and assess potential impacts on the market
3. Quantify and analyse Scotland's dependency on exports, particularly in relation to quality issues
4. Identify anomalies (especially between neighbouring authorities) and potential areas for improvement in efficiency of material flows.

### **3.3 Data Modelling**

Remade Scotland has developed a significant expertise in working with Scottish Local Authorities, understanding their recycling programmes and the overall impact of council activities on recycling performances against targets. This work has involved close discussions with councils and the subsequent aggregation of information to provide a Scotland-wide perspective on recycling levels against Government targets.

#### ***Output from 2008/09***

Data modelling provided a significant element of underpinning knowledge and analysis for all elements of the Remade Programme. It also was used to support Government evaluation of Council's progress towards the 2010 and 2013 Recycling and Composting targets. The key findings being:

- The projected responses from Councils suggest that 2010 LAS targets and 40% recycling target will be met; but
- The projected responses suggest that without further plans from the Councils the 2013 LAS targets will be missed.
- The projected response data showed that the 50% recycling targets will be missed by a significant margin.

As part of the 2008/9 programme Remade Scotland provided a comparative analysis of the environmental impact of different treatment strategies for the treatment of plastic waste in commercial and industrial wastes. This work utilised carbon models developed as part of a wider data modelling tool by Caledonian Environment Centre.

#### ***Proposed Activities for 2009/10***

An update to the local authority targets report will be provided in early 2010, focussing on scenario analysis for the 2013 LAS targets and to provide support for government analysis needs as they arise.

It is anticipated that ongoing supporting activities in the use of the carbon modelling work in comparison with SEPA's WRATE tool will be needed to support Government proposal to recycle/recover more C&I waste and to consider the likely impact of landfill bans.



### 3.4 Kerbside Best Practice

Remade Scotland undertakes an annual review of the performance of local authority recycling programmes. The review started in 2007 and has shown year on year improvements in the amount of recyclates being captured in individual kerbside programmes. Indeed the following table highlights the four main operational factors which affect the performance of kerbside collection programmes:

Factor	Effect
<b>1. Recyclate Collection Frequency</b>	Weekly collections 42% higher yields than fortnightly, 94% higher than every 4 weeks
<b>2. Collection Capacity</b>	Weekly capacity >101litres 71% higher yields than <50 litres
<b>3. N<sup>o</sup> Of Materials Recycled</b>	Multi material schemes with 4 or more materials produce 86% more material than single stream collections
<b>4. Residual Waste Collection Frequency</b>	Schemes with fortnightly residual collection produce 83% more dry recyclate than those with weekly residual

#### Output from 2008/09

The annual review is undertaken at the end of each financial year, produced and presented in conjunction with the Waste Aware Recycling Advisors Intervention Programme. The report is due to be presented in early June, but early findings highlight the wide range in performance of different recycling collection programmes as shown below:

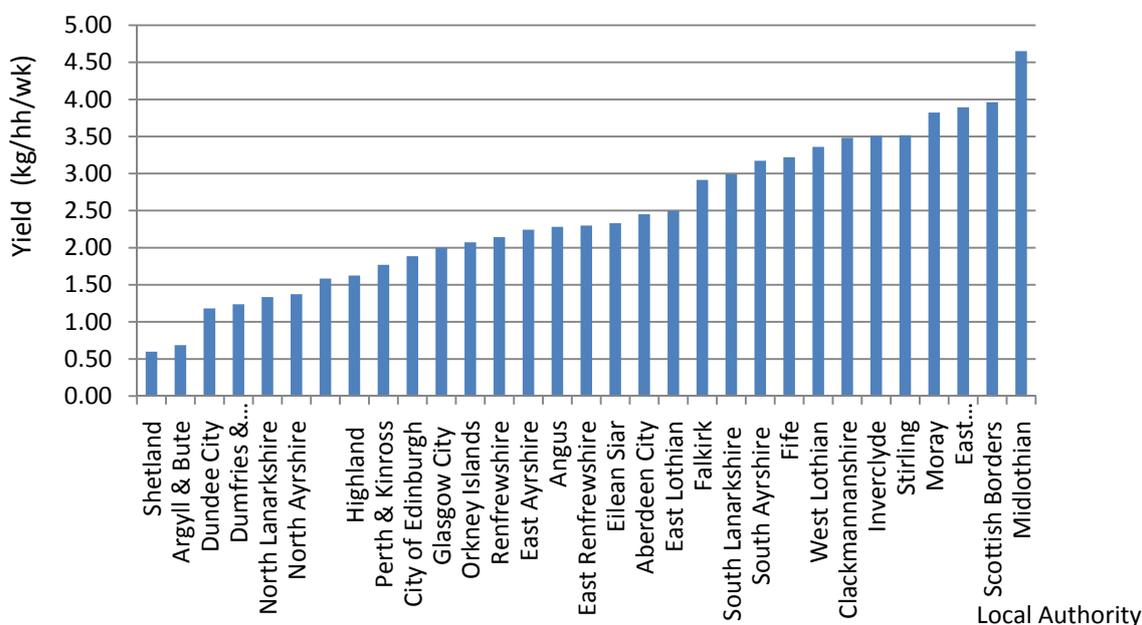


Figure 1 – Typical Performance of Council Recycling Schemes 2007/08

The detailed analysis of the schemes found that the average yield from a kerbside collection scheme is 2.02 Kg/hh/wk. However the actual schemes vary from Council to Council from a low of 0.5 to a high in excess of 4.5 kg/hh/wk (see Figure 1 above).



### ***Proposed Activity for 2009/10***

Building on last year's review, Remade will conduct a similar assessment of scheme performance and continue to present the findings at a joint event with WAS. The analysis for this year's report will also include additional analysis of residual waste collection schemes and the impact that has on recyclate recovery rates.

In previous years the annual review has sought data from councils in relation to the performance of councils' recycling centres and bring sites. However, it has proved difficult to define a simplified questionnaire approach to gathering performance data, relying on WasteDataFlow information in order to make some assessment of Recycling Centre performance. For 2009/10 it is proposed to interview local authority staff and review recycling centre performance data on behalf of the councils, and to establish the main operational criteria that promote greater levels of recycling.

### **3.5 Recycling Scheme Optimisation**

This represents an additional activity for the 2009/10 programme which has arisen because of the recent targets review. As identified in the Kerbside Best Practice Report (details above) there is significant variation in scheme performance. Also highlighted in the following section on LARS, the highest priority Councils have identified in terms of support, is the requirement for additional support for to enhance recyclate collection schemes. The contribution existing recycling activities can make to improving recycling targets is well understood and will be an important point of delivery for Remade Scotland in 2009/10.

The objective of the programme is therefore to assist Councils achieve these higher recovery rates through targeted support, working directly with each local authority. Remade Scotland proposes to continue to work with COSLA on a Local Authority Steering Group to deliver a targeted programme to assist Councils optimise their recycling schemes.

Based on established knowledge and experience of working with Councils on scheme optimisation a standard methodology will be developed. This structured approach will be made available to all 32 Councils

The programme will involve discussions with each of the Councils on their objectives and needs, and will provide a template for the data required to be obtained. The data gathered by the Councils will allow Remade to :

- **Review the current kerbside dry recyclate collection service** – Across each of the council's existing recycling schemes, a programme of support data requirements will be defined. The information required relates to:
  - *Operational Data* - describing how many households are on each daily route, the housing type, and general indicators of social demographic significance;
  - *Input performance* – data describing how well the public engages with the council's recycling scheme, including participation or set-out rate,
  - *Output performance* – analysis of tonnage captured through each daily route to determine kg/hh/wk by daily route and across the council area.



- **Identification of areas of potential enhancement** – for existing services and in relation to low performing daily routes Remade, Waste Aware and the Council will identify areas for enhancing recycling services and in defining a targeted programme of enhancement to include improved messaging and the production/distribution of targeted leaflets/information – we would engage with both the Council and WAS to define this but may include door to door messaging, the form of a survey for service improvement, but would also serve as a reminder to the householder on how to engage with the service;
- **Examination of the opportunities where additional or new and innovative services can be introduced** - The opportunities for direct performance improvements and enhancement to the existing services (e.g. adding extra materials, altering frequency, expanding the households) will be evaluated to estimate their impact on recycling rates as well as the identification and evaluation of opportunities to add new services (e.g. food waste, segregation / processing of bulky uplifts, kerbside collection of glass vs recycling point services)

Remade proposes working with WAS and WRAP to assist councils the enhancements to kerbside programmes. However the exact programme and methodology will vary from Council to Council depending on

- the existing services in place,
- each Council's particular needs and
- the availability of good quality data on day routes, set out rates, participation etc.

In discussion with Waste Aware Scotland, Remade Scotland anticipates working with WAS Recycling Advisors to support certain elements of data recovery (i.e. potentially on individual scheme participation and set out rates).

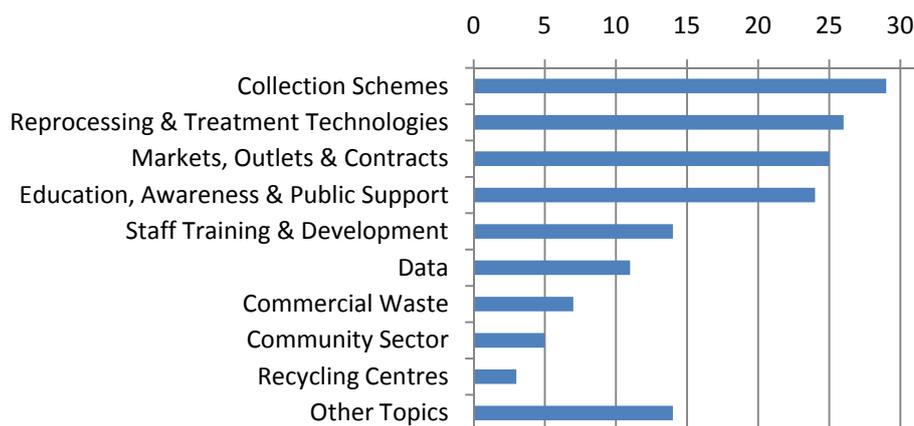
### **3.6 Local Authority Research & Support (LARS)**

An important aspect of the overarching Zero Waste Scotland Programme is the need to ensure the support provided by the Delivery Programmes is closely aligned to the needs of the Local Authorities. LARS attempts to define Local Authority requirements.

#### ***Output for 2008/09***

Research for the LARS programme involved the establishment of a steering group comprising seven Local Authority representatives along with WAS and WRAP. Detailed face to face interviews were held with all 32 Councils and a report produced. This identified that Councils sought support in the following areas:





The results were presented to the COSLA Waste Managers Network meeting on the 27<sup>th</sup> February 2009 and following consultation with the Steering Group a priority list of needs was developed.

### ***Proposed Activities for 20 09/10***

Further discussions are to take place with the LARS Steering Group and to rank and prioritise the Support needs. The final agreed ranking exercise is to be presented as a conclusion to the report. Following on from this an Action Plan will be developed based on the priorities. Remade Scotland, WAS and WRAP will select one of the agreed research needs and develop a 'Virtual Library' of documents and links for the topic. An important aspect of the 'library' is that the documents and links selected have been verified and validated. The library could potentially be hosted on the WAS partners' site and have a front page which summarises the content of the topic.

The Action Plan will identify a programme of activities to address the information and support needs, identifying where the Zero Waste Scotland partners will contribute and where additional government support is required.

### **3.7 Support for Community Groups**

The community sector plays an important part of the Government's Zero waste policies. In addition to providing recycling services in geographic areas or for particular materials, the community sector provides a substantial resource for engaging with the public on waste avoidance and recycling issues. Remade Scotland works with the Community Recycling Network Scotland to deliver material or information support to this sector.

### ***Output 2008/09***

In June 2008, Remade produced a report on the *Market Development Opportunities for 'Difficult' Materials and Non Core Recyclates in the Community Sector*. The report focussed on materials which were identified as having the highest potential for the development of reprocessing business as well as opportunities for collection. The materials identified were:



- Carpets;
- Expanded polystyrene;
- Plasterboard;
- Textiles; and
- Tyres.

The work led to the provision of direct support to SPRUCE Carpets to assist them identify new business opportunities for utilising previously unusable carpets. The research assessed the insulation properties of shredded woollen carpet waste. Using samples of shredded carpet waste a series of tests were conducted at Glasgow Caledonian Universities' Environmental Chamber operated by the Centre for Research on Indoor Climate & Health (RICH). Remade Scotland accessed on behalf of SPRUCE, funds from a Social Research Fund provided by Glasgow Caledonian University to fund the chamber tests which were required to establish the thermal conductivity of shredded carpet. The results ultimately identified that shredded carpet wastes had poorer insulation properties than competing products and that there were a number of health hazards associated with its use in this application. As a consequence Remade are now assisting SPRUCE assess other potentially more viable markets such as soil stabilisation and weed suppression.

CRNS also identified a need to develop an evidence base on the carbon impact of community sector recycling, to support the community sector activities.

### ***Proposed Activities for 2009/10***

A number of meetings with CRNS have been held to identify appropriate support that should be provided under this element of the programme. It has been agreed that all work will be in partnership with CRNS as opposed to any individual direct support to community organisations. Two streams of support have been identified to assist with development of a materials strategy and to conduct further carbon modelling to assess the impact of reuse services. Data gathering for the carbon modelling started in February. For 2009/10 the Remade Scotland Programme will:

- assist CRNS develop a community based materials strategy;
- conduct carbon modelling including assessing the carbon impact of a variety of services delivered by CRNS members: furniture reuse, bicycle reuse and kerbside recycling services; and
- bench-mark various community services against equivalent Local Authority services.

### **3.8 Contract Support**

Effective contract management and procurement of recyclate market outlets and Material Recycling Facility services remain important aspects of the recycling supply chain as evidenced by the LARS research and especially highlighted in the report on the financial *Exposure of Scottish local Authorities Arising from the Reductions in Recyclate Material Prices*.

### ***Output 2008/09***

As part of last year's Programme, Remade Scotland

- Developed an initial Contract Risk Assessment Matrix based on a review of contract conditions which Councils are using for their recycle outlets.
- Held a workshop with a West Lothian Council and assisted in the re-drafting of their contract clauses and provided a tender evaluation system for the Council to use. The material developed was produced as a Case Study.

### ***Proposed Activities for 20 09/10***

The work for this year seeks to:

- Further develop the Contract Risk Assessment Matrix through follow-up series of interviews with Councils to better understand their existing Contract process, and to document the outcome of this review in a report.
- to hold a workshop/seminar with Councils to discuss and refine the report.
- to develop and agree standard contract clauses which focus on recycle quality, security of market at acceptable prices ;and
- to promote the Contract Risk Assessment Matrix and provide an overarching methodology for application.

### **3.9 Organics Support Programme**

Food waste represents approximately 18% of MSW, and its recovery is critical to Scotland's ability to achieve its Landfill Diversion Targets. Its collection and subsequent treatment represents additional costs to local authority collection budgets. Therefore any significant rollout of food waste collection either on its own or as part of a garden waste collection requires an understanding of the likely tonnages being recovered and at what cost.

#### ***Output 2008/09***

Remade on behalf of the Scottish Government and in partnership with WRAP and WAS, has project managed the 7 Councils' Food Waste Trials and provided a monthly update, an interim report as well as presenting the main findings at various events including two of WRAP's training events on Food Waste Strategy and Operations held on the 5th and the 19th March 2009. Across the Councils the trials have identified recovery rates of between 1.3 and 2.6kg/hh/wk (although it is worth noting that if only participating households are considered this can rise to at least 3.4kg/hh/wk). Recovery of 2kg/hh/wk across Scotland would divert 180,000 tonnes and contribute 5% to Scotland's overall recycling performance. A final report has been drafted and will be presented to Government once the detailed costs of the schemes from Councils have been obtained.

Remade Scotland also produced an *Assesment of the Potential Landbank for PAS 100 Compost Landbank* Report which showed that agricultural applications on their own have the ability to utilise over 27million tonnes per year of compost. However due to the restrictions of the Quality Meat Standards agricultural outlets are significantly restricted and currently only offer around 25,000T/yr capacity. As a consequence the two main outlets identified are:



- **Councils' own applications (infrastructure, roads, parks & gardens)** – which could be stimulated by the specifying of PAS 100 compost into Council Sustainable Procurement Practice.
- **Brownfield and Derelict & Vacant Land** - Planning Departments could play a major role in the development of these by imposing conditions on the developers involved in such projects

### *Proposed Activities for 2009/10*

The activities for the Organics programme for this year were developed following detailed consultation with a number of relevant bodies (WRAP, Scottish Enterprise, SEPA, NISP, CRNS, Association for Organics Recycling and Waste Aware Scotland) and a subsequent meeting initiated by Remade Scotland. The aim of the meeting was to establish what each organisation was currently doing and planning on delivering and to map out these activities, thus also establishing areas where further intervention is required. (See Annex1). Therefore to support Scotland's needs Remade Scotland will:

- Continue to work with Councils in support of Government and Non-Government funded trials;
- Undertake a regional assessment of treatment capacity required in Scotland and a shortfall in processing to inform future capital grants work compilation.
- Work with Planners and Councils to assist in the specification of PAS 100 compost for Derelict and Vacant Land (DUVL) applications. Also conduct a review of barriers to greater use by Councils.
- To support the decision making and risk assessment process Remade will undertake a study of existing EU and Scandinavian co-digesters and ascertain the nutrient and other contents of the resulting digestate.

## **3.10 Stakeholder Support**

### *Output 2008/09*

To support the Waste Management Industry and to disseminate the knowledge and intelligence obtained about markets, processes and technology requirements, Remade Scotland offers direct stakeholder support to all organisations who request assistance (cognisant of passing data which is commercial in confidence). A log is maintained of the support provided to these organisations. While time spent in support was predicted spending 35 days in 2008/09, a total of 55 days was spent.

### *Proposed Activities for 2009/10*

With further increases in landfill tax now set, it is anticipated that there will be continued interest from the private sector in the development of waste recycling and treatment facilities. Given the level of activity experienced in the latter part of 2008/9, it is anticipated that 70 days of documented stakeholder support should be provided.



### 3.11 Treatment Capacity Requirements

#### *Output 2008/09*

Remade Scotland consulted with Local Authorities on their plans for commingled collections to establish the potential requirement for additional MRF facilities. Part of this work involved the development of an MRF modelling tool to establish the detailed facility requirements and the likely costs. There are currently 8 fully commingled recycle schemes in Scotland, while 11 Councils identified that they will or may move to full co-mingled schemes in the future which will require between 93,000 tonnes and 163,000 tonnes of MRF processing capacity in Scotland and require a capital investment of circa £10.4 million and the potential creation of 103 new jobs. The analysis was based on data taken from the Remade Recyclate Recovery report in kilograms of recyclate recovered per household per week (kg/hh/wk) for current co-mingled collection schemes. The report *Short to Medium Term Material Recycling Facilities Requirements in Scotland* was published in March 2009.

#### *Proposed Activities for 2009/10*

Following discussions with the Scottish Government and WRAP, Remade will further develop the MRF analysis to:

- Establish scenarios to identify the maximum tonnage of recoverable materials from kerbside collections
- Model these scenarios as comingled collections and evaluate the impact on recycling rates in the context of the 70% targets
- Look at worldwide examples where sorting of “unconventional recyclate” (i.e. films, foils etc.) is taking place and the physical plant required to do so
- Establish the quantity and quality of facilities required in the five economic development regions required to sort this material for sale into commodity markets
- Evaluate the probable costs of delivering such facilities
- Assess the probable revenue potential of the recovered recyclate commodities
- Provide an outline cost per tonne for infrastructure delivery

Remade Scotland will be seeking to develop further capability in accurately estimating the impact that anaerobic digestion of food waste and other digestible materials will have on the Scottish waste markets.

Remade are also developing an anaerobic digestion model which will be used to develop regional scenarios of:

- Co digestion of municipal and commercial feedstocks



- Production and use of biogas
- Production and use of heat and power
- Production of useful digestate fertiliser

Linked to the Remade work on commercial and industrial waste, we will seek to estimate the quantity and quality of municipal and commercial feedstocks available in Scottish regions that may be available for anaerobic digestion. Further research on the properties of those materials will allow accurate modelling of biogas yields and digestate quantity and quality. It is our intention to provide estimates of the total biogas yield and fuel value for each scenario, with options for biogas utilisation of combined heat and power (CHP) and the possible use of gas pipeline distribution (a concept gaining momentum in countries such as Sweden).

Production and use of digestate continues to be an aspect of anaerobic digestion that requires further research. In this work Remade will assess the key fertiliser properties of digestate (NPK) and how changes in the feedstocks can affect the quality of output material. Our modelling works will assess the quantity of digestate output in each region – the likely value of that material and what the markets may be for use including information on additional possible uses, such as elemental nutrient recovery, creation of fuel pellets, fish farming applications etc.

As part of this research Remade will assess how the utilisation of wastes for anaerobic digestion and the resulting use of biogas, heat and power, fits with the other key strategies in the Scottish Governments “Greener” objectives. Specifically this may include:

- Possible contribution to Renewable Targets
- Possible impact on the Renewable Heat Plan
- Impact on GHG emissions and the Climate Change Bill

### **3.12 Integration of Commercial and Industrial Waste Flows**

The waste provisions in the Climate Change Bill recognise the need to focus on commercial and industrial wastes. Yet it is well recognised that despite Site Licence Return data the overall understanding of C&I waste is poorer than MSW. THE Remade Scotland programme seeks to provide additional supporting knowledge in relation to C&I waste data.

#### ***Output 2008/09***

To establish the type and level of data that commercial companies are likely to be able to provide to SEPA or government, Remade Scotland has been working closely with Scottish Enterprise, Envirowise and the Scottish Food and Drink Federation. A commercial data collection tool has been developed which six large food and drink companies working with all the partners have agreed to populate. This system will provide data on waste arisings, energy and water use. The SFDF companies have been slow to begin this work but data is now being retrieved and an interim report will be produced in April/May 09.



### ***Proposed Activities for 2009/10***

Remade Scotland will work with Scottish Enterprise, Envirowise and NISP and will be trialling the data tool with other sectors – especially the Hospitality Sector.

Recent discussions with NISP have identified a significant opportunity to provide further data analysis and aggregated reporting on C&I data which NISP obtains from the businesses they support. NISP do not have the resources to analyse and evaluate this data but as CEC are part of a university, NISP are prepared to enter into an agreement with Glasgow Caledonian University to make the data available. This will provide a significant opportunity to obtain valuable data on C&I waste and arisings and feedstocks. We propose to analyse the data, which along with existing sources will allow a more comprehensive understating of arisings and potential data gaps and support the underpinning knowledge to support decisions on infrastructure and treatment needs.

There is also a need to review wider availability and capture of all C & I waste data including a review of how the collection and capture might be improved as well as mapping the current data 'flow' and identifying gaps. This activity will complement and add to the integrated activities proposed above.

### **3.13 Programme Management**

An important requirement for the Remade Scotland programme is to ensure effective partnership working with both WRAP/WAS and the Scottish Government in support of the Zero Waste Strategy. Remade will continue to meet regularly with WRAP & WAS and will report combined activities under Zero Waste Scotland as well as on the specifics of this Plan.

The budget for Programme Management in 08/09 was 55 days. However delivery actually took 90 days which were spent managing the programme and liaising with the various additional external partners including Envirowise, NISP and SEPA and developing a new website. Remade Scotland will continue to report to government through

- An electronic monthly summary of progress which highlights developments, and raise any issues requiring discussion.
- Regular meetings and presentations.
- A quarterly financial report.
- Reforecast as work and activities develop/change if appropriate.

At the start of next financial year, a revised update of the Remade Scotland plan will be provided in line with the projections for 2010/11.

### **3.14 Heat Use Pilot**

The Scottish Government invited the Zero Waste Think Tank members to submit proposals for projects which would support and advance the Scottish Government's Zero Waste agenda. It was agreed by the ZWTT to provide funding to a number of the proposals one of which is a pilot project regarding heat use from Energy from Waste (EfW) plants.



In February 2009 the Scottish Government asked CEC through the Remade Scotland Programme to manage the project on their behalf and have granted additional funding for the pilot of up to £25,000. In addition CEC, as Remade programme manager, will be funded separately to manage the project.

The award of the pilot was recently made to Gray's Composting Ltd and, subject to final agreement, on the project programme, payment schedule and project outputs, the funds (£25,000) will be drawn down as agreed with Scottish Government.



## 4 Programme Schedule

The following table provides an outline programme schedule for year 2 – 09/10.

Activity	Q1			Q2			Q3			Q4		
	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
<b>Waste Min Public Bodies</b>												
<i>Case Study Material</i>					x					x		
<i>Present Case Study Material SOLACE</i>							Event					
<i>Work with LAs to dev data tool</i>												
<i>Facilitate 2 Network Events</i>						Event					Event	
<b>Market Review &amp; Analysis</b>												
<i>Market Review Report</i>												
<i>Economic Analysis</i>												
<b>Material Flows</b>												
<i>Develop material flow &amp; analysis</i>												
<b>Data Modelling</b>												
<i>Predictive analysis arisings/recycling</i>												
<i>Support for LA Planning Treatment</i>												
<b>Recyclate Scheme Optimisation</b>												
<i>Dev Standard Methodology</i>												
<i>Agree Programme with Govt &amp; COSLA</i>												
<i>Deliver Support to Councils</i>												
<b>Recyclate Recovery Best Practice</b>												
<i>Produce Annual Kerbside Report</i>												Report
<i>Event</i>			Event									
<b>LA Research and Support</b>												
<i>Evaluate LA Resource Need</i>		Report										
<i>Deliver agreed research</i>												
<b>Support Community Groups</b>												
<i>Carbon modelling</i>					Report					Report		

Activity	Q1	Q2	Q3	Q4
<i>Material Strategy</i>	Ongoing			
<b>Contract Support</b>				
<i>Council Interviews</i>				
<i>Workshop</i>		Event		
<i>Standard Contract Specs</i>			Report	
<i>Promote methodology</i>				
<b>Organics Programme</b>				
<i>Review Council Collection Plans</i>				
<i>Review Barriers – work with Planners</i>				
<i>Review EU use of AD digestate</i>				Report
<b>Stakeholder Support</b>				
<i>Ongoing</i>				
<b>Treatment Capacity Requirements</b>				
<i>MRF Analysis Max Potential</i>		Report		
<i>Develop Anaerobic Digestion model</i>				
<i>Seminars</i>				
<b>Commercial &amp; Industrial flows</b>				
<i>Report of SFDF</i>		Report		
<i>Implement tool with Hospitality Bsns</i>				
<i>Work with NISP on data analysis</i>				

<b>Outline REMADE Programme</b>				
<b>Action</b>	<b>Output 08/09</b>	<b>Proposed Activity for 09/10</b>	<b>Partner</b>	
<b>Prevention</b>	<b>3.1.Waste Minimisation / Prevention– in Public Bodies</b>	<b>Report</b> on Progress of LAs with Internal Waste Management Waste Min Actions + Paper Minimisation Case Study <b>Event</b> with representation from WAS and Envirowise 26 March	1. Develop Case Study Material 2. Present Case Study Material highlighting financial savings to SOLACE. 3. Facilitate 2 Network events for LAs 4. Scoping study working closely with 2 Councils to develop methodology for internal waste data capture	Envirowise WAS
<b>Recycling Recovery &amp; Composting</b>	<b>3.2a Market Review &amp; Analysis Reports</b> o Market Development Reports o Analysis of Economic & Business Opportunities	<b>Report</b> on Financial Impact of Price Falls – Nov 08. <b>Report</b> on markets – Due April 08.	Provide market intelligence to ensure security of material outlets Stimulation of £25M of new reprocessing and manufacturing capability Produce Annual MD report and Economic report.	WRAP
	<b>3.2b Material Flows</b> o Develop detailed LA flow map of recycle materials identifying where possible end markets and outlets.	Map to be incorporated in Market Report. COSLA to consider dissemination & online hosting.	Produce an Annual Flow Map Report	COSLA SEPA WAS
	<b>3.3 .Data Modelling</b> o Progress 20 2010 & 2013 targets	<b>Report</b> on progress towards targets. Feb 09 <b>Modelling</b> C&I carbon options – comparing with WRATE	Provide ongoing modelling and evaluation of targets	SEPA
	o Underpinning baseline data for analysing material flows, treatment capacity, commercial and industrial arisings	Underpinning modelling work ongoing	Provide detailed analysis of data to inform various elements of the programme. Recycling Optimisation Programme – aim to provide direct support to Councils. Working with WAS	WAS
	<b>3.4 .Recyclate Recovery</b> o Kerbside Best Practice - Annual Benchmarking exercise of recycling scheme performance (linked to SWAG recycling advisors output)	<b>Kerbside Best Practice and Benchmarking Report</b> Due April 09. A joint <b>Event</b> with WAS	Identify critical factors and assist LAs move towards kerbside recovery rates of 3-4kg/hh/wk and achieve 75-80% recycling rates at CA sites. Kerbside Report Joint event with WAS	WAS WRAP
	<b>3.5 Recyclate Scheme Optimisation</b>	Not yet commenced	Dev standard methodology for Scheme Optimisation Work with LA's to assist them gather data and implement improvments	WAS WRAP
	<b>3.6 . LARS</b>	Provide <b>Report</b> on LA identified research needs	Deliver specific identified elements in the report in collaboration with the COSLA working group and in agreement with SG	COSLA
	<b>Stimulate &amp; support for recovery of more 'difficult' materials including</b>	<b>Best Practice Reports.</b> Due April 09	This specific work stream to be incorporated into the <b>Support for Community Groups.</b> Specifically to help CRNS to support their Materials	WAS WRAP

<b>Outline REMADE Programme</b>			
<b>Action</b>	<b>Output 08/09</b>	<b>Proposed Activity for 09/10</b>	<b>Partner</b>
1. Mixed plastics 2. Textiles 3. MDF wood chip etc 4. Hazardous Household chemicals		Strategy and Business Development	
<b>3.7 Support community groups,</b> 1.markets for difficult materials 2.identify process/manufacturing opportunities 3.improve collection of bulky items.	<b>Report</b> on Business Opportunities for Difficult Materials produced. Research for SPRUCE carpets completed. Work on carbon modelling ongoing.	Support CRNS with their Material Strategy and Business Development and provide modelling of carbon benefits of reuse activities.	WRAP
<b>Voluntary Producer Responsibility, Work with TetraPak and others to stimulate recovery more materials</b>	Stimulate support from producers for improved recycle recovery	Remove	WRAP WAS
<b>3.8. Contract Support</b> o Individual Councils & or Consortia o Conditions & specifications o Review of material quality & specification issues	Case study produced which linked objectives of waste management team to procurement and evaluation stage.	<ul style="list-style-type: none"> <li>hold a further series of interviews with Councils to better understand their existing Contract process,</li> <li>hold a workshop/seminar with Councils</li> <li>develop standard contract clauses and</li> <li>promote the Contract risk assessment matrix and provide an overarching methodology</li> </ul>	WRAP
<b>3.9a.Food Waste Trials</b> o Identify and develop markets for food waste compost	<b>Interim Reports</b> produced. <b>Final reports</b> on effectiveness & costs of schemes – Due April 09	Review Council collection plans –segregated or mixed. undertake a regional assessment of treatment capacity required in Scotland and a shortfall in processing to inform future capital grants	WAS WRAP SEPA
<b>3.9b. Landbank Report</b>	<b>Report produced.</b>	Remade to work with Planners and Councils to assist in the specification of PAS 100 compost for DUVL applications. Also review of barriers to use	
<b>3.9c Technical Research</b>		To support the decision making and risk assessment process Remade to undertake a study of existing EU and Scandinavian co-digesters and ascertain the nutrient and other contents of the resulting digestate.	WRAP
<b>3.10. Stakeholder Support</b>	Provide market intelligence	Provide support to 50 organisations/yr	
<b>Quality Protocols for Business</b>	Attend meetings & workshops	Remove	WRAP SEPA

<b>Outline REMADE Programme</b>				
<b>Action</b>	<b>Output 08/09</b>	<b>Proposed Activity for 09/10</b>	<b>Partner</b>	
<b>Process, Product, Manufacture</b>	<b>3.11. Treatment Capacity requirements</b> <ul style="list-style-type: none"> <li>• MRF</li> <li>• AD Plants</li> </ul>	<b>MRF Report</b> – create 104 new jobs. Max £10.4 capital investment	Develop the MRF tools & develop new modelling tools for evaluating plant capacity, performance and throughput for AD & IVC plants Dev AD modelling tool Assess biogas opportunities from AD output	WRAP
	<b>3.12. Integration of Ind &amp; Commercial WasteFlows</b> Evaluation of commercial and industrial arisings	<b>Developed an Online Reporting Tool.</b>	Working with Envirowise & SSFD. Identify extent to which firms can report on waste and carbon Support for Infrastructure projects Extend tool to other sectors	SEPA
	<b>Biodiesel</b> (see under Difficult Materials)	<b>Report</b> due April 09	Remove	CRNS ScoEnt
<b>Procurement</b>	Although one of the four key themes in the Zero Waste Business Plan, there is no activity planned for Remade in this area			

**Annex 1. Mapping Study of Existing and Required Organics Activity from mtg held 17th March 09**

	<b>Arisings</b>	<b>Collection</b>	<b>Processing</b>	<b>Regulation</b>	<b>Specification</b>	<b>Markets</b>	<b>Barriers/Future Work</b>
<b>MSW Greenwaste</b>	Data well established, <b>SEPA</b> Waste Data Flow	<b>Remade</b> and <b>WAS</b> currently undertaking kerbside best practice work	Capacity largely in place. <b>CRNS</b> also delivering Master Composter Programme.	PAS 100 review on stability; testing frequencies; growth tests; nutrients & heavy metals. Clarification to test labs.	<b>WRAP</b> working on end use specification to satisfy QMS	<b>Remade</b> planning to review barriers to Planners and Councils greater utilisation of PAS100 compost in DUVL. <b>WRAP</b> are running a number of Trailblazer Projects. <b>WRAP</b> also undertaking trials with selected agricultural outlets (salad potatoes, winter & spring barley). <b>WRAP</b> have developed a cost model for bagging compost	What is the future capacity of Greenwaste composting required to satisfy LA requirements going forward. If there is an extended downturn - will we end up with stockpiles of greenwaste? <b>Remade</b> potentially working with <b>WRAP</b> to ascertain cost benefits of various routes to market to help identify where bagging likely to be of benefit to producers
<b>MSW Foodwaste</b>	<b>Remade</b> managing food Waste Trials. <b>WRAP</b> undertaking food waste composition analysis	<b>Remade</b> managing foodwaste trials of LAs collection of food & mixed food & garden in partnership with <b>WRAP</b> and <b>WAS</b> . <b>CRNS</b> supporting High Rise Collection trials	<b>WRAP</b> , aim to support thru capital grants an additional 120Kt of capacity (for both MSW and C&I)	2010 targets approaching. PAS 110 development for digestate standard. Assisted by ROCs for AD	<b>WRAP</b> & <b>AFOR</b> developing COP & SOP templates. PAS 110 development	Work package required to ascertain end use/market for foodwaste derived material in Scotland.	What capacity would be required if all LAs decide to progress foodwaste collection services - data required - <b>Remade report?</b> <b>Remade</b> planning to review Council plans for mixed and segregated collection. Concept of perceived risk by the farming industry e.g. QMS etc. Farmers willingness to accept material & at what cost to overall process? Costs of spreading costs/labour/transport of material to agricultural land required? Would farmers need to be paid to accept the material - who pays?
<b>C&amp;I Foodwaste Hospitality Sector-Hotels &amp; Restaurants</b>	<b>SE</b> , <b>NISP</b> , <b>CRNS</b> all have data on waste arisings. Can this data be accessible to all? Staffing issues & commercially sensitive.	There is a lack of commercial collection. Assuming existing waste companies perform some collection of this material - do they have data or analysis? What costs currently paid / frequency of uplift/.	<b>NISP</b> promoting existing AD capacity to local businesses. Existing maceration in- house may cause large loss of potential feedstock to processing capacity. <b>SE</b> promoting AD technology to the sector. <b>CRNS</b> extending Master Composter prog to SMEs. <b>CRNS</b> also exploring project to use small scale digesters (e.g. Rocket)	Apart from ABPR no current regulatory drivers to push forward increased recycling for C & I.	PAS 110, digestate standard for materials in progress. Pas 100 being reviewed. <b>WRAP</b> working on end use specification to satisfy QMS et al. <b>SE</b> interested in SRF/RDF standards	<b>WRAP</b> working on supply chain /market information	Lack of data on arisings . <b>NISP</b> have extensive database of >1500 companies. Although commercially sensitive - can this information be aggregated by sector / geography for better organics information? Data required to develop collections information ( <b>Remade Project?</b> ).
<b>Manufacturers Producers Wholesalers Distribution</b>	<b>WRAP</b> undertaking Supply chain arising of Fruit & Veg.	What volume is required to be treated? Lack of data available. Same info as above required	Need data on waste arisings as AD plants look to mop up supply - what capacity is actually required to treat foodwastes. <b>Remade</b> planning to undertake a review of EU & Scandinavian digesters and ascertain the digestate nutrient content.	No regulatory drivers to push forward increased recycling for C & I.	PAS 110, digestate standard for materials in progress. Pas 100 being reviewed. <b>WRAP</b> working on end use specification to satisfy QMS et al	Need to assess the cost benefits of AD / IVC vs existing waste management practice - green credentials & landfill avoidance	How many major producers are there in the central belt (assumed greatest production) / Scotland as a whole? What costs can they stand for treatment costs? What are the potential end routes of the treated material (either AD or IVC)?

