

## Update #3

March 2005

The Eco-Region NW project aims to set a new standard for analysis of resource flows at the regional scale. It provides a 'joined up' information system which measures environmental performance for all consumption and production in the NW region.

One output is the resource 'budget' for running **North West plc** – roughly 66 million tonnes of inputs and outputs from producers and consumers. As set out in 'Securing the Future – the UK Sustainable Development Strategy' this budget is then the starting point for more sustainable consumption and production for regions, industrial sectors, firms, households and common products. The Eco-region NW project is developing tools to analyse this regional budget, including material flow analysis, ecological footprinting, waste data systems and business benchmarking.

The Eco-Region NW has now been linked to the larger national project '**Eco-Budget UK**'. This is developing new methods for material flow and eco-footprinting, which include for both direct and indirect effects. It is also building a comprehensive material flow database and scenario model - '**REAP**' - for the UK regions / administrations.

The linking of the Eco-Region NW to the Eco-Budget UK then adds value, with a much larger database, an interactive software tool, and more advanced benchmarking between the regions. As a result the Eco-Region NW programme has been paced in order to fit with the Eco-Budget UK, and is now projected to finish late 2005 / early 2006.

The Eco-Region NW has also shifted its focus from baseline data towards adding value to the Eco-Budget UK REAP model. This includes:

- Focus on the NW as a pilot region, with applications to economic, spatial & environmental strategies.
- Business applications, especially in benchmarking for sustainable production & consumption.
- More detailed development of waste management assessment systems.
- Focus on construction as a demonstration industrial sector.

## New insights

These are a selection of some of the recent insights and innovations coming from the research process.

### Local area analysis:

The REAP system enables a breakdown of consumption, material flow and eco-footprint by local authority area. This is produced by combining household expenditure data, socio-economic group profiles and the COICOP consumption tables. This enables detailed comparison of

district, unitary and county performance. Bottom up data can be inserted where this is available.

### **Direct vs indirect impacts**

What is the difference between an estate agency and a cement factory? Both are involved in the production of the built environment, but one uses about 1 million times more energy per job. In reality a regional economy is a large and complex system, where any activity or sector is inter-dependent on others. To tackle this the use of input-output matrices in the REAP system enables the tracking in detail of the activities and pressures 'upstream' and 'downstream' of the selected product or sector. This means that for the first time, realistic allocations of indirect pollution and resource use can be made for service sector industries.

### **Business benchmarking:**

Every industrial sector is experiencing environmental pressure in some way – either through cost, risk, regulation, customer image, or the chance of new products and markets. The Eco-Region NW benchmarking system is developing a template for common environmental pressures for each of the 76 main production sectors. This is then to be extended to cover several hundred typical product types. The benchmarking system aims at providing a toolkit for industrial and trade associations and other agencies in promoting environmental best practice in business.

### **Waste management data**

Waste information is notoriously patchy, beyond the basic tonnage to disposal, and the forthcoming national survey may not provide much better. The Eco-Region NW is developing methods to link the PRODCOM material production tables with physical inputs and outputs for each industrial sector. Current research is aiming to produce a waste data framework for MSW and C&I which will link material composition with source sector information.

## *Working papers*

The interim results of the Eco-Region NW are being published on the project website. Recent additions include:

- Construction sector: (Building Research Establishment interim report).
- Business benchmarking: (CURE interim report).
- Key policy targets and environmental sustainability indicators for the NW: (CURE interim report).
- Regional policy options and sustainability assessment: the new generation of analytic tools (CURE interim report).
- Regional industrial ecology and productivity innovation – new approaches to analysis and communication (draft academic paper).

### **Website**

Interim reports and working papers are available on the CURE website. Due to the merger of UMIST and Manchester University this is on a temporary address at:

<http://www.art.man.ac.uk/PLANNING/cure/ECO.htm>

A fully interactive project website is in development, to be launched in June 2005.

## *Related projects*

The Eco-Region NW is part of a unique and innovative portfolio of parallel projects at UK and EU level, from CURE and its partners. Many of these projects overlap and contribute towards building up the Eco-Region NW

databases, modelling techniques and policy applications.

This research programme is situated in the context of the Biffaward 'Mass Balance' and the newly forming 'Critical Mass' network, making a vital contribution to the UK agenda on sustainable production and consumption.

### **Eco-Budget UK**

As above, this flagship project is compiling material flow and eco-footprint data from resource flow projects in the regions of the UK. These are being assembled into an integrated software system, REAP - 'Resource Environment Analysis Programme'. The NW region will be able to use the REAP tool to analyse alternative scenarios for the NW. The role of the Eco-Region NW is then to link the number to the 'real world' applications in policy and business.

Eco-Budget UK is also producing a 'green budget' – a fully costed business plan for the re-engineering of the UK economy of production and consumption for greater environmental sustainability. This will be launched with national and regional applications on Budget Day, March 2006.

### **REWARD**

The Environment Agency and a consortium of RDAs have developed the REWARD ('Regional & Welsh Appraisal for Resources & Development') programme. This includes a detailed environment-economy model suitable for analysing regional strategies and SEA at the regional scale. One of the trial applications involved a collaboration with Eco-Region NW on a detailed study of 'resource efficiency / waste minimization for the NWDA. In practical terms the REWARD software works as a counterpart to the REAP software.

### **Footprint NW**

This contains some early results for the EcoRegion NW project, geared towards the review of the AFS (Action For Sustainability) framework of the North West Regional Association.

### **Assess**

This is a forerunner of the Eco-Region NW business performance benchmarking system for environment & waste minimization. A prototype is now being tested with companies in the South East region and Merseyside.

### **Inter-modal waste transport:**

This national project is researching the potential for lower impact transport of waste & materials management by integrating road, rail and water transport. This is a leading national project involving Highways Agency, DEFRA, Strategic Rail Authority and others.

### **Manchester Eco-Schools project**

The eco-footprint analysis of a large high school showed the various components of the overall eco-footprint, including construction, energy in use, staff travel and school lunches. As a contribution to the national Building Schools for the Future programme, this shows the most significant decisions at each stage in the procurement process.

### **Sustainable Communities**

As the national Sustainable Communities plan says little about environmental sustainability, this West Midlands project is looking at a selection of building and neighbourhood types. This will provide the evidence base to inform decisions on rehabilitation or renewal, on an integrated assessment basis. The implications will then be tested with householders and communities, with results in early 2006.

### **SE Plan footprint analysis**

While the South East is under great pressure for housing and infrastructure, the draft SE Plan set out its policy for 'footprint neutral' development:

*"...a stabilisation of consumption of resources, and a reduction in absolute levels of consumption in the long term, with an aim to stabilize the SE ecological footprint by 2010".*

The REAP / REWARD tools and construction spreadsheets are being used to provide the evidence base and policy implications of this challenging target.

## INSURE

This EU-funded research project is building a regional development modelling toolkit based on the 'system dynamics' method. This is well suited to complex situations, where the most important factors cannot be directly measured or modelled – political, cultural, psychological and so on. The INSURE model is being designed to use standard datasets available in any region in the EU25, and is due for completion in December 2006.

## Project issues

The project research partnership includes:

- SEI (Stockholm Environment Institute at York University): database construction and eco-footprint applications
- BRE (Building Research Establishment) construction and waste management sectors:
- Envision Sustainability Tools: spatial development model.
- Creative Concern: website & media developers

### Steering group

The first two steering groups met prior to the approval of the project. Following the setting up of the Eco-Budget UK collaboration, meetings are now at approx 6 month intervals, with intervening meetings of the project team.

The meetings are now planned in conjunction with a series of workshop / forums on the three main themes of the Eco-Region NW: construction, waste management and business benchmarking.

The proposed workshops / Steering Group meetings include:

- 4) Tuesday June 14<sup>th</sup> 2005: 2.00-5.30 Construction Sector workshop

- 5) October 2005: (tbc) Waste Management workshop
- 6) January 2006: (tbc) Business Benchmarking workshop & launch.

The full Steering Group includes each of the project partners and sponsors, plus other regional bodies, other statutory agencies, and other information providers.

### Construction Sector workshop

This workshop now planned for June 14<sup>th</sup> pm is aimed at urban development clients, analysts and policy-makers.

The results of the Eco-Region NW construction analysis will be presented and discussed. External speakers will review progress on the sustainability of design and construction. Topical questions include:

- Sustainability benchmarking in the construction sector – what are the indicators and how to use them?
- Is a zero-energy urban development possible or feasible?
- What is the total impact of the Regional Spatial Strategy?
- How can construction help or hinder the regional sustainability targets?

### With thanks to...

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### Further information:

Alastair Moore / Joe Ravetz  
Centre for Urban & Regional Ecology,  
School of Environment & Development,  
Manchester University, Oxford Rd, M13 9PL, UK  
t.+44 (0)161 275 6904 / 6879: f. 275 6893  
[alastair.moore@man.ac.uk](mailto:alastair.moore@man.ac.uk) /  
[joe.ravetz@man.ac.uk](mailto:joe.ravetz@man.ac.uk)  
<http://www.art.man.ac.uk/PLANNING/cure/ECO.htm>