

## POTENTIAL ROLE AND IMPACT OF SELECTED BENCHMARKING SYSTEMS ON INDUSTRY BENCHMARKING FUNCTION OF ECO-REGION NW TOOL

September 2004

### Introduction

The Eco-Region NW project aims to establish a new 'regional' lens through which to view resource productivity and waste management in the North West of England. The project focuses on several key tools and methodologies to enhance understanding of regional material flows including mass balance analyses, waste system analyses, ecological footprints, economy-environment modelling, scenario building, linking-up exercises, industry benchmarking and communication initiatives. Given the key role played by private industry in the consumption and disposal of materials in the Region, it is vital that the ECONW project provide a ready portal through which industry can see itself within the context of Regional material flow. The industry benchmarking is the vehicle through which ECONW will strive to connect with industry.

It should be noted that rather than using supply chains or Regional policy to frame an industry sector or firm's material consumption, ECONW stresses the Regional context as the most appropriate frame to place industrial material flow. This means that constraints and issues specifically related to production and consumption patterns in the North West are used to frame the way ECONW interfaces with the business agenda.

The practical aim of the benchmarking component is to have industry undertake self-assessments online (maybe), determine where they are on the performance and resource productivity spectrum, learn what risks and opportunities lie beyond, and finally, develop a

strategy to move forward with a focus on resource efficiency and waste minimization. This is easier said than done of course as businesses are by definition complex and ever-changing entities. Businesses operate within a complex web of supply chains and distribution networks that are constantly morphing to adapt to changing market signals. In such an environment, businesses can only remain competitive by converting "information into intelligence". Having the time and resources to make this conversion is often more difficult than it sounds. ECONW aims to help in the conversion process by first helping industry measure where they are in the present using regional data and mass balance techniques, then assessing subsequent risks and opportunities, and finally by presenting signposts which point in the right direction.

### What the Paper Sets Out to Do

This paper aims to critique three existing industry benchmarking systems in the first instance, and in the second, evaluate the appropriateness and usefulness of each system for inclusion in the Eco-Region NW (ECONW) tool. The contents and conclusions drawn in this paper will be added to the body of investigative materials developed under the Project.

The objective of this paper is to more clearly identify the opportunities and limits of the industry benchmarking component of the ECONW tool. To this end, the goal is to examine existing benchmarking systems in order to determine which functionalities can be adopted by

ECONW. Given this determination, the manner in which the selected attributes may be dovetailed with ECONW will be discussed.

## Who Should Read the Paper

Initially, this paper will be for internal reference only. In time, members of the ECONW project team and advisory group will be given an opportunity to review this paper. In addition, readers with an interest in the ultimate functionality and focus of ECONW, as well as industry benchmarking schemes make up another key audience.

## Benchmarking

### Overview and Evolution

In today's competitive business environment companies are expected to be constantly improving. This means that customers expect businesses to demonstrate that they behave in a responsible way. Further, shareholders demand that companies be well positioned to develop new products and services, and ready to serve new markets and adopt new business models. In response to these demands for increased shareholder and customer value, companies of all types and sizes are pushing to adopt and implement concepts like 'continuous improvement' and 'whole life performance'. Activities in support of these new corporate values are in addition to the traditional bottom-line issues like profitability and resource efficiency. Hence, a truly successful company must now keep its eye on several balls at once if it intends to remain in the field of play; the traditional 'profit' ball as well as the efficiency and performance balls. Addressing these core business imperatives without a point reference point from which to gauge performance represents the first new challenge for industry. The second challenge is knowing how to communicate the value-add that such initiatives yield to stakeholders. Industry benchmarking is evolving to try to meet these challenges.

### Uses & Limitations

Companies now recognise that to remain competitive requires managing for social and environmental issues, as well as for the traditional bottom line. Further, to make technological and management choices that will make their products and processes more sustainable, and their corporate images more

attractive, businesses need to know how their performance compares with best practice. Benchmarking tools that contain good data and sound indicators can facilitate this process.

Under the idealized benchmarking scheme, one industry can assess its performance and compare its key performance indicators with industry sector averages and best/worst practice. As indicators are normalized and sector-specific, their communicative value is maximized; shareholders can rate performance and improvements at a glance.

One particular benchmarking scheme known as 'PERFORM' uses existing issues and constraints to define industry indicators<sup>1</sup>. Examples of these might include sustainability reporting guidelines (e.g. Global Reporting Initiative, government reporting guidelines), existing reporting obligations (e.g. climate change levy, packaging regulation and legislation for pollution prevention and control), or measures developed by sector organisations (e.g. Water UK, Construction Products Association). This approach to selecting benchmarking indicators has strategic advantages as it adds value by using high profile issues to establish indicators, however, there are other approaches with equally compelling qualities that this paper will examine.

In practice, benchmarking schemes tend to suffer from a lack of reliable data on corporate social and environmental performance, and hence, benchmarks are often criticized for being non-representative and misleading. Caught in a classic 'chicken and egg' predicament, benchmarking aims to provide valuable information to industry, but first requires valuable information from industry in order to deliver on its performance claims. Accumulation of data is often frustrated by systems that are viewed as laborious to industry, therefore, datasets often remain patchy and 'shallow'. What is needed, is a user-friendly tool that provides confidentiality, accuracy, reliability and value to industry. By assuming this type of approach, it is believed

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<sup>1</sup> PERFORM sustainability benchmarking project is a voluntary and collaborative research project that responds to the demand for reliable quantitative information about the social and environmental performance of companies.

that an industry dataset is likely to grow quickly.

## Eco-Region NW Project Benchmarking Tool

Recognizing the vast assortment of interactions that play out daily in the economy of the North West, the Eco-Region NW project aims to develop a suite of tools and resources that together can help citizens and decision-makers to gain a clearer view of the some of the keystone patterns active at the environment-economy interface. In aid of its aspirations, the Project relies on its several component parts including:

- Waste / Resource Balance
- Ecological Footprint
- Waste Systems Analysis
- Waste / Resource Scenarios
- Modelling & Information Systems
- **Waste / Resource Benchmarking**
- Applications & Dissemination

### Benchmarking Tool

The Waste / Resource Benchmarking part of ECONW will link the business community with environmental imperatives in the Region. Although it is expected to be of interest to all types of companies, the benchmarking tool will perhaps be of most benefit to those companies that have already begun to incorporate environmental issues into their operations.

The tool will provide information to help communicate sustainable consumption and production issues for businesses and the general public. The importance of this undertaking is highlighted by the pivotal role that the commercial and industrial sectors play in resource consumption and waste disposal, two key Regional environmental issues. If the Region is to adopt more sustainable consumption and production patterns, additional resources must be invested to better understand the pressure, and hence leverage points, inherent in the trades made between industry and the natural environment. Teasing apart the complexities of the production-consumption cycle in the North West requires access to the best available data and intelligence on primary and secondary

production, demand for services and consumables, and waste and emission levels.

### 'Regionality' of Tool

Distinguishing itself from other benchmarking tools, ECONW attempts to place North West industrial activity within a Regional context. This means that the emphasis is placed upon environmental indicators that best reflect the Region-specific threats and opportunities facing industry within that Region. For the North West these include:

- A decreasing landfill capacity, and associated cost implications as marginal disposal costs start to approximate the benefits of reuse;
- Availability of proximate supplies of raw materials like construction minerals;
- Likelihood that the existing Aggregates Levy will rise;
- Increasing marginal cost of water supply;
- Recycling targets;
- Relative competitiveness of a sector or firm when benchmarked against competitors in the same Region;
- Environmentally-linked development subsidies;
- The need for the Region as a whole to be resource efficient, given that under the rules of play in the new global economy city-regions are expected to ascend to the status of main player. This issue is perhaps best summed up by the Ecological Footprint measure; and,
- In time, climate change may take on greater importance as Regional CO<sub>2</sub> reduction targets are assigned by Government in an attempt to meet Kyoto commitments.

### Structure

The structure of the ECONW benchmarking component will dovetail with several ongoing initiatives. First, one of three existing online industry benchmarking schemes will be linked with ECONW to provide firms with a tool to investigate their internal policy performance and manage for increased corporate sustainability. Second, firms will benefit from the *Resource and Energy Analysis Program*

(REAP) – an integrated resource-environment modelling tool. It is through REAP that state of the art production and consumption data and databases for the Region and the UK are being collected and processed.

### Existing Benchmarking Tools

Common to the benchmarking tools being examined in this paper is a on-line user-friendly interface, a user questionnaire, a 'HELP' function, and outputs in the form of charts, tables and written reports. The questionnaires typically strive to prompt the user to input operations data and describe the corporate culture in terms of environmental, economic and social policy and performance. Indicators are used to help firms see where they are on the performance spectrum for their sector, and charts and tables highlight patterns, trends and drivers. Reports summarize the results of the exercise and provide strategic recommendations and discussion points for Boardroom review and action.

### REAP

The development of REAP is being conducted by the Stockholm Environment Institute (SEI). REAP looks at final demand for goods by households and the public sector, and uses information about inter-industry transactions to assess the implications that this demand has on environmental quality and both direct and indirect material flows in the Region. REAP links material consumption and externalities with demand, regardless of where consumed products come from and where environmental impacts occur. In tracking all environmental impacts, no matter where they are felt on the globe, REAP attempts to place the principle of "consumer responsibility" at the heart of the model. Material Flow Analysis (MFA), as the basic methodology, provides a comprehensive picture of apparent and hidden flows of materials and energy carriers through the economy, thus providing a comprehensive physical account of the Region.

The main data sources for REAP are PRODCOM, detailed trade data and expenditure statistics. Final consumption patterns follow both SIC and the COICOP classification and are organised around key policy components such as food, energy, housing, infrastructure, consumer goods,

transport and waste; featuring hundreds of different materials and products.<sup>2</sup>

REAP adopts a holistic view of products and allows users to link production and consumption with direct environmental impacts (i.e. CO<sub>2</sub> emissions, 'reliance' on 'x' hectares of bioproductive land, and direct and total material consumption). This in turn will help to identify and compare the environmental impacts of industrial sectors. Moreover, it will provide valuable information concerning the resource productivity of UK industry and improve the understanding of resource consumption by industrial sectors. This is particularly useful for industry associations as each works to identify potential threats and opportunities to their respective sectors. For instance, by knowing the benchmark waste arisings for a sector, an industry association will be better positioned to assess the costs of regulatory risks to its members, but also better able to identify potential opportunities to innovate and improve sector performance.

For a firm to feel confident that a benchmark derived by ECONW is robust, requires detailed data collected at the firm level. REAP breaks industry down into 76 economic sectors. Industry associations will be able to use the tool benchmark itself against other sectors, while firms will be able to measure their performance against the industry average.

### Functionality

Given that a handful of industrial sectors account for around 70 percent of material flow and emissions in the Region, the ECONW benchmarking tool will tend to focus on these sectors which include: construction, transport, food/drink/catering, and environmental services. Several environmental key performance indicators (EKPI) will be used to help companies make a clearer connection between the cost and environmental implications of business as usual operations. These EKPIs include: material throughput, waste arisings (effluent, packaging, air and carbon emissions, etc), reuse rates, energy consumption, transport demand, water consumption, land use, and toxics. Underlying

<sup>2</sup> Stockholm Environment Institute. *Development of Physical Accounts for the UK and Evaluating Policy Scenarios: Resources and Energy Analysis Programme: Eco-Budget-UK Research Report 1*. 2004



the tool's structure is a recognition that industrial environmental performance spans a broad spectrum including companies that have little appreciation that its operations are nested in a much wider environmental context, to the enlightened firm that is in the latter stages of implementing its EMS. The idea is to help all firms to move up the performance hierarchy by employing 'push-pull' activators or motivators. The 'push' motivator include regulations, liability risks and poor public relations, while 'pulls' include opportunities to reinvent, value add, innovate, and enter new markets. Firms will be able to 'locate' themselves on a sectoral or Regional performance spectrum with respect to resource consumption, productivity and waste loadings. Recommendations for risk reduction and opportunity exploitation will be provided where relevant so that industry has some directional signposts. These signposts can enhance ongoing environmental and social reporting initiatives, assist EMSs, and help firms communicate changes in environmental performance with regulators, customers, and service providers.

Existing data will allow for reasonably robust comparisons between industry sectors, however, insufficient and incomplete firm-level datasets frustrate ECONW's attempts to make meaningful comparisons between one company's performance and another. In order to get around this shortcoming, it is proposed that ECONW provide options including:

- Allowing users to link to other tools that can provide further information and insight into comparables;
- Allowing company users to go further with proprietary analyses by following 'recipes' on how to conduct detailed performance assessments and monitoring;
- Inviting industry associations to enter additional data into the tool in order to achieve a higher level of resolution and therefore usefulness for their members;
- Providing the opportunity to environmental regulators and managers to build on ECONW's value by adding data and information available to them.

Ideally, ECONW would ultimately have access to this specialized data through a web-based library to which users could upload information, however, the associated proprietary and technical limitations are not fully understood at this point.

## Existing Benchmarking Tools

### PERFORM

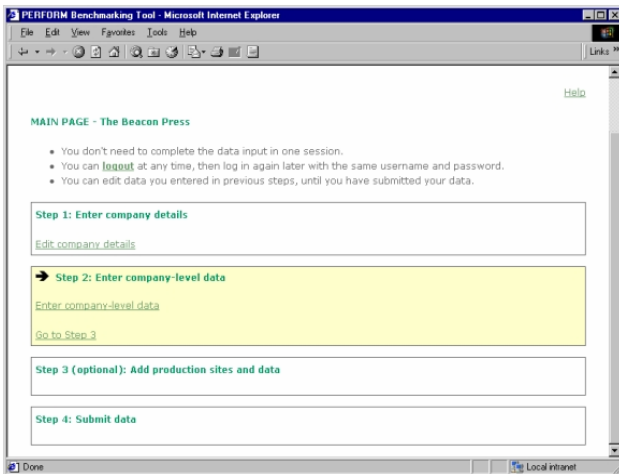
In addition to its benchmarking tool the PERFORM project relies on sustainability management tools and statistical analyses to help companies understand their performance and manage for increased corporate sustainability through improvement programmes.

#### Objective

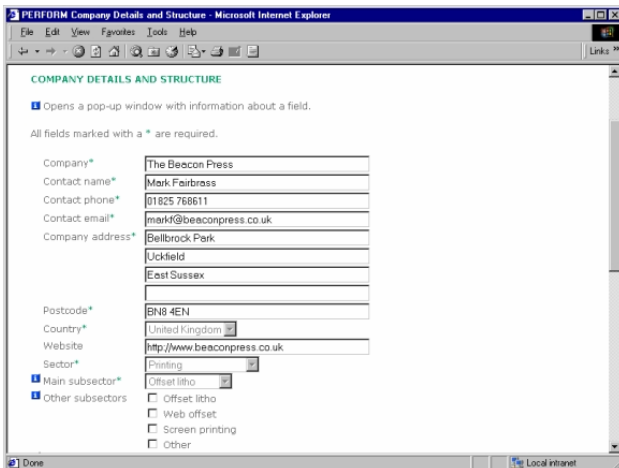
Companies in 14 industrial sectors (i.e. aggregates, aluminium, cement, ceramics, electricity, glass, motor vehicles, paper, plaster, plastics, printing, steel, timber, and water) can benchmark themselves against competitors on social, economic and environmental performance scales. Further, PERFORM facilitates the design of performance improvement programmes. In order to help companies apply benchmarking data for improved management and operations, sustainability management tools are provided. Trends, patterns and drivers of sustainability performance are revealed through statistical analyses of company data.

#### Methodology

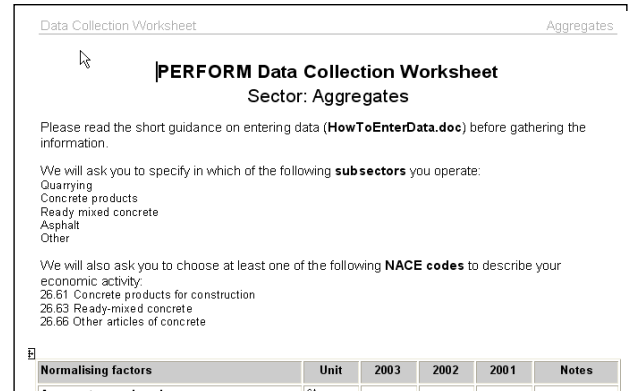
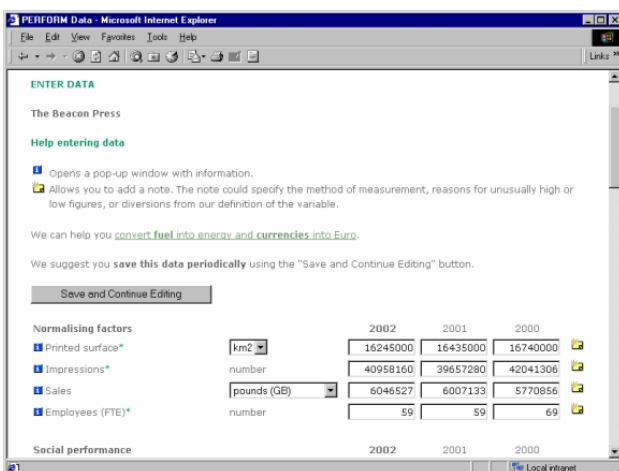
The interface allows users to follow a step-wise progression through the data entry and report generation process.



Companies begin by entering address and business type information, then launch into more detailed data entry windows that deal with operations issues like output and energy consumption.



Although not essential, users are encouraged to enter historical data to aid trend analyses.



Companies can enter key performance indicators online via data collection worksheets, and, in return receive an automatically generated benchmarking report. Normalizing factors, like number of employees or output, in order to allow for comparability. PERFORM has developed a standardised set of just over 30 sustainability performance indicators that brings together the most widely accepted metrics from a range of UK, global and sectoral initiatives. These indicators address the following areas:

Environmental performance	Social responsibility performance	Economic performance
Air emissions	Employment	Turnover
Water emissions	Health and safety	Profit
Energy and resource input	Training and education	Return on capital
Waste	Equal opportunities	Labour productivity
Environmental management	Community	

Assuming that the PERFORM indicators reflect what is or is not 'sustainable', the data collected via the PERFORM benchmarking tool can be analysed to assess the variation in sustainability performance between different firms and sites in the same industrial sector. Moreover, PERFORM prompts users to provide information on the level of environmental management, the use of different technologies, differences in the nature of the products manufactured, and the size of the firm or site. Information on these factors helps to explain the variability in sustainability performance.

**PERFORM**

Benchmarking Report > Companies and business units

**Companies and business units**

**British Energy**

Data has been provided by the company.  
**Country:** United Kingdom  
**Website:** <http://www.british-energy.com/>  
**Main activity:** Nuclear  
**Other activities:** Coal; Gas; Renewables  
**Technologies used by British Energy:**  
 - Electrostatic precipitators: Yes  
 - Low NOx technologies: Yes

**Edison S.p.A.**

Data has been sourced from the public domain.  
**Country:** Italy  
**Website:** <http://www.edison.it/>  
**Main activity:** Gas  
**Other activities:** Renewables  
**Comment / Data Source:**  
 note: there might be fluctuations in the financial data between 2001 and 2002 due to a big merger in 2002  
 - Edison S.p.A., Environmental And Safety Report 2001 - 2002

PERFORM also tries to provide insight on trends, past and present, so that firms can set targets and measure social, environmental and economic performance over time. Another important element of PERFORM is its focus on the link between the social, the environmental and the economic dimension of corporate performance. In doing so, users can better assess to what degree good social and environmental performance supports commercial success. Data analysis carried out largely on a sectoral, rather than on a firm-specific basis.

### Outputs

The main output of PERFORM is the *Sustainability Benchmarking Report*. The report includes a list of defined and normalized indicators. It shows, for each indicator, how a company compares against others in the same sector. PERFORMS' reliance on an indicator set that includes indicators that apply to all industrial sectors, as well as a small number of additional indicators specific to each sector, helps to facilitate comparison between and within sectors. Of course, making comparisons between sectors will always be a subjective exercise given the peculiarities associated with different business sectors.

The report includes benchmarking charts for all indicators for which a company provides data. The number of benchmarks in each chart varies as not every company will have provided data on each indicator. If a company provides multi-year data, trend charts are included.

**PERFORM**

Benchmarking Report > Indicators

**Indicators**

**Water use**

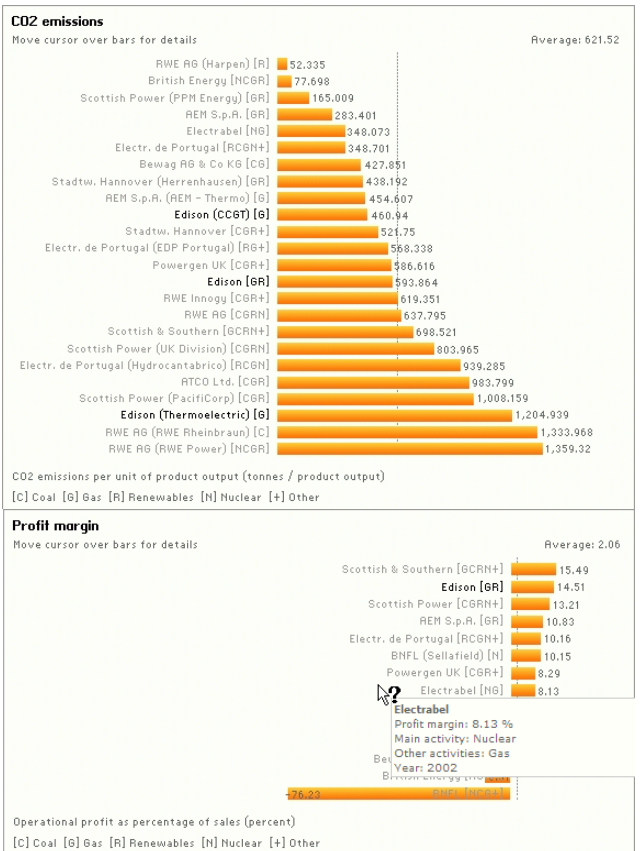
**Calculated as:** Water used / Product Output  
**Measurement unit:** cubic metres / product output  
**Definition of Water used:** Not input of water from both direct extraction and public supply. Does not include treated water.  
**Indicator source:** GRI (EN5), DEFRA, BITC

**Total waste**

**Calculated as:** (Non-hazardous waste disposed + Hazardous waste disposed) / Product Output  
**Measurement unit:** kilograms / product output  
**Definition of Non-hazardous waste disposed:** Amount of solid waste that is processed together with or in Does not include recycled waste and by-products that are sold.  
**Definition of Hazardous waste disposed:** Waste which needs to be specially controlled because of its danger by specific legislation. Includes solid and liquid waste, but not recycled waste.  
**Indicator source:** GRI (EN11, 31), DEFRA, BREF, DEPAEC, BITC

Data is presented as normalised values (e.g. no. employees or production output). The benchmarking charts use 2002 data where possible or, data for the most recent year for which data is available. The charts are ordered so that better performers are at the top. Users can drill down into charts by clicking on each bar in the benchmarking charts to find out details about each data point.

The report does not rank benchmarks as this



would require weighing up the relative

importance of individual indicators. The subjective judgment involved in this weighting needs to be made by stakeholders themselves on the basis of sector- or firm-specific values, priorities and objectives.

## ENWORKS

### Objective

Arguably the most active environmental business support programme in the North West, ENWORKS provides help to firms (mostly SMEs) who wish to improve efficiency, competitiveness and environmental performance. In addition to local partnerships, ENWORKS engages with regional and national organisations such as:

- Envirolink – the Regional Cluster Organisation for Environmental Technologies funded by NWDA
- Envirowise – the ENWORKS Regional Manager is also the Envirowise Regional Agent
- The Carbon Trust – the Regional Carbon Trust Manager is hosted by Envirolink
- NWDA and Government Office NW – liaison from an ENWORKS and Envirowise viewpoint.

The current programme has identified the following targets and outcomes:

- £10,000,000 cost savings to industry: or £20,000 per business
- 5% reduction in waste production from businesses involved
- 15% increase in recycling from businesses involved
- 10% reduction in CO2 produced from businesses involved
- Professional skills and qualifications in resource efficiency
- On-line information management system

These targets are based on a broad assessment of previous experience from around the UK; there does not exist a detailed body of evidence on sectors, waste types, technologies and so on.

### Methodology

At the core of the ENWORKS programme are on-site visits by advisors that are employed by one of six Business Environment Associations

(BEA). Advisors raise general environmental awareness and help firms identify practical and viable interventions that can increase productivity, reduce running costs and bring benefits to the environment. ENWORKS likes to focus on real ‘opportunities’ which are discussed in site visits, and finally assessed based on business case principles. A telephone support helpline is also available for participating businesses, as are opportunities to undergo training and share lessons learned.

An on-line data capture tool serves to gather company information together. The NWDA’s 17 industry business clusters are used to classify industry. Often, but not always, company personnel are assisted by advisors as they enter information into the database.

### Outputs

As mentioned earlier, ENWORKS focuses on real opportunities for business to seize. Users of the database tool are given a username and password that allows limited access to the entire database. This means that a company can see its own data and sectoral data, but not business information on competitors.

ENWORKS										Opportunity Stat		
MAKING ENVIRONMENTAL PRACTICE PROFITABLE												
Organisation: Demotex										Print Report		Export to Excel
Date Created	Opportunity Title	Status	Person Responsible	Current Action	Annual Cost Savings (£)	Capital Cost (£)	Payback (Years)	Priority	Improved Service	Improved Quality	Improved Capacity	
08/07/04	Basement lights	Initial Scope	champion	By installing motion sensors and timers in these a	445.54	177.00	0.4	Low	No	No	No	
08/07/04	Clean inlet louvers on boiler house	Initial Scope	champion	implement	38.00	0.00	0	Low	No	No	No	
08/07/04	Clean inlet louvers on boiler house	Initial Scope	champion	implement	406.60	0.00	0	Low	No	No	No	
08/07/04	Clean roof lights on warehouse and install light sensor switches	Initial Scope	champion	implement	34.71	60.00	1.7	Low	No	No	No	
08/07/04	Drying fans on printing machines	Achieved	champion	Implemented	4,860.00	0.00	0	High	No	No	No	
08/07/04	Excess packaging materials	Feasible	packer manager	train packers on reducing use & set up monitoring	13,102.00	0.00	0	Medium	Yes	No	No	
08/06/04	Improve Waste Paper recycling rates	Initial Scope	John Smith	Recycling bins for paper being sourced and quotes	1,500.00	150.00	0.1	Medium	No	No	No	
08/07/04	Investment in logistics software to assist with fleet management	Implementation	champion	Software to be installed	77,097.60	15,590.00	0.2	High	No	No	No	

Opportunities are listed in order of the magnitude of savings that each offers. In addition, users can see at a glance what the status of a particular opportunity is (i.e. initial scoping stage, underway, complete, etc). It is also possible to view information on the viability of an intervention and other business-specific data. One drawback of the system is that it only analyses energy, solid waste & water production in terms of cost savings and improved efficiency.

Various reports can be generated at either the firm or sectoral level.



**ENWORKS**  
MAKING ENVIRONMENTAL PRACTICE PROFITABLE

Your active organisation is: Demotex

You are now viewing opportunities for: Demotex.  
Select [Edit](#) to view / update an opportunity

[Add New Opportunity](#)

Title	Status	Savings (£)	Priority	Edit
Improve Waste Paper recycling rates	Initial Scope	1500.00	Medium	<a href="#">Edit</a>
Reusable pallets	Initial Scope	1300.00	Low	<a href="#">Edit</a>
packaging waste reduction	Initial Scope	1050.00	Medium	<a href="#">Edit</a>
Raw Material in IBC rather than sacks	Initial Scope	1036.80	Medium	<a href="#">Edit</a>
savings on raw material packaging waste	Initial	975.00	Medium	<a href="#">Edit</a>

Further, users can view Resource Efficiency reports for either a firm or sector as shown below.

**ENWORKS**  
MAKING ENVIRONMENTAL PRACTICE PROFITABLE

Area or report: Demotex  
Status: Achieved  
Cluster: All Clusters

[Print Report](#) [Export to Excel](#)

Resource Type	Number of Opportunities	Unit Savings To Date	Annual Unit Savings	Unit	Carbon Savings To Date (t)	Annual Carbon Savings (t)
Electricity	1	36,000.00	180,000.00	kWh	15.48	77.40

**ENWORKS**  
MAKING ENVIRONMENTAL PRACTICE PROFITABLE

Area or report: All Regions  
Status: Initial Scope  
Cluster: All Clusters

[Print Report](#)

Total Cost Savings to Date	Potential Annual Cost Savings	Total Capital Cost	Number of Opportunities	Number of Companies
N/A	£ 35719.61	£ 3550	73	21

**ENWORKS**  
MAKING ENVIRONMENTAL PRACTICE PROFITABLE

Area or report: Demotex  
Status: Initial Scope  
Cluster: All Clusters

[Print Report](#)

Total Cost Savings to Date	Potential Annual Cost Savings	Total Capital Cost	Number of Opportunities	Number of Companies
N/A	£ 6718.45	£ 2547	13	1

## ASSESS

ASSESS is a management tool that focuses on environmental policy, and to a lesser extent resource consumption and environmental emissions, to enable organisations to measure and improve environmental and waste management performance. In addition to business clients, other users include environmental and waste management service

providers that provide support to organisations, and large organisations who want to use ASSESS to evaluate environmental and waste management performance of their supply chain.

## Objective

The main objective of the tool is to improve business environmental performance. It does this by organizing company policy and operations data in a manner that allows firms to identify performance gaps and presenting options for further action.

## Methodology

An on-line self-assessment form prompts users to provide information about the firm's environmental and waste management activities. Answers are then benchmarked against best practice and a report identifying strengths and suggestions for improvement is generated. ASSESS also contains a selection of 'mass balance' questions that strive to elicit quantitative environmental performance data from users, and then derive a mass balance picture of the firm's operations. The ASSESS tool is nearing completion.

## Outputs

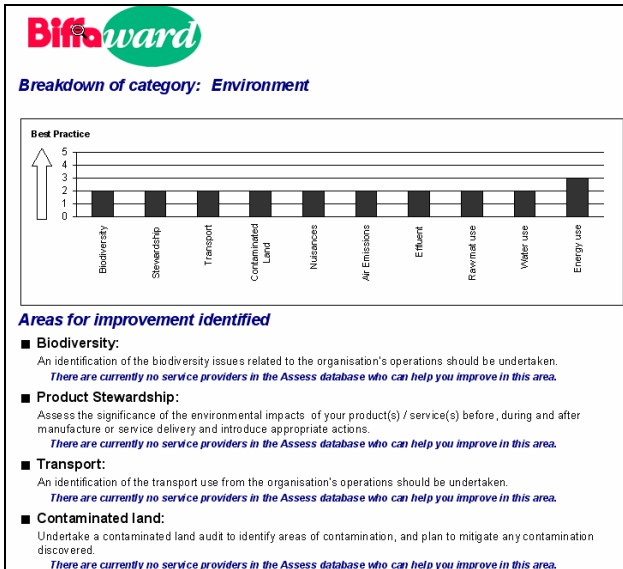
The main output of ASSESS is a printed report that Drawback – the final report doesn't tell business anything they didn't know already. Hence not very much incentive to do it. The breakdown of industrial sectors & material types is very basic and summarizing

**Biffaward**

**Summary of questions measuring your impact on the environment**

The following section outlines data recorded during the process designed to measure your organisations impact on the environment.

- **Transport of main material:**  
How far does your main material input travel? (distance and mode of transport)  
1,000 lorry - km per Week
- **Employee's business travel:**  
How far do your employees travel on business? (distance and mode of transport)  
100 air - km per Week
- **Power consumption total:**  
How much electricity is used in total on your site?  
1,000 BTU per Week
- **Gas consumption total:**  
How much gas is used in total on your site?  
100 cubic metre per Month
- **Oil/Coal consumption:**  
How much oil / coal is used in total on your site?  
100 tonnes per Year
- **Other energy consumption:**  
How much energy from other sources is used in total on your site?  
50 kWh per Month



The outputs of ASSESS can be exported to EXCEL as shown below. There are no mass balance calculations or comparative analyses for the user to refer to. Rather, the ASSESS output simply summarizes the information and data entered by the user through the online survey.

Company Name	SIC code	Region	Date Completed	Number Employees	Question Text	Question Answer	Question Units	Question Period	Question Materials	Question Comments
DAK	N/A	50	09/04/2004	10	How far does your...	240	tons.km	Year	N/A	
					How far do you...	3,000	passenger car-km	Year	N/A	
					How much elect...	20,000	kWh	Year	N/A	
					How much gas...	500	cubic metre	Year	N/A	
					How much oil...	250	tonnes	Year	N/A	
					How much energy reason entered	N/A	N/A	N/A	N/A	no other fuel used
					How much 'main'	2,400	tonnes	Year	Wood & articles of wood	
					How much 'main'	1,200	tonnes	Year	Iron, steel, other metals & products	
					How much solid	800	kg (kg (1.25 t))	Year	beet suxare	
					How much of gas	0	tonnes	Year	N/A	
					How much pack	1	tonnes	Year	N/A	
					How much emis	50	emission kg	Year	PM10	

## Evaluation

Experience shows that the mass balance questions are difficult to translate for different business sectors, and difficult for business to find data for. Also, reviews of the tool highlight a few shortcomings. These include a need for: easier navigation within the tool;

- a glossary of terms for words like 'environmental policy', 'energy audit', 'main materials 1 and 2', 'bins', etc;
- clarification of the difference between 'waste minimization' and 'waste recycling';
- classification of wastes into 'main waste materials 1 and 2';
- making some of the questions more accessible to the uninitiated or average business man on the street;

- more easily accommodating companies that make many products rather than one 'main' product;
- clarification of the added value that mass balance questions represent for a company (apart from making them get the information together);
- accommodating situations where 'main materials' come from more than one source and by way of more than one mode of transport;
- recognizing that the level of environmental awareness among all company employees is often not equal;
- clear instructions strongly recommending users read the HELP pages before answering the questions.

Users will be required to look up data on energy consumption, waste shipments, material inputs and sources etc. Often, this type of data is not readily available especially for those companies that do not have EMSs already. There is a need, and therefore an opportunity, to translate raw mass balance data into something of use to industry. The tool would benefit from a facility that provides comparisons between firms as well as benchmarking of firms against sector averages.

## Corporate Responsibility Index (CRI)

The index was established in 1998 in response to a call for a system in which companies could measure and report on responsible business practice. Business in the Community (BITC) is the umbrella organization that organizes and publishes the index. BITC has 700 member companies, including 85 of the FTSE 100.<sup>3</sup> Participating companies (of which there were 139 in 2004) voluntarily complete an on-line questionnaire and the results are validated, summarized and published by BITC in the Sunday Times. Regional offices of BITC, including the North West, are expected to develop Regional indices comprised of companies located only within the North West. The results will then be published in the North West Insider business magazine.<sup>4</sup>

<sup>3</sup> Sunday Times, March 2004. *Companies that Count: Measuring, Managing and Reporting Responsible Business Practice.*

<sup>4</sup> Personal communication: Louise Myatt. BITC North West Office. October 8, 2004.

Company	Stock-market sector	FTSE	Impact areas selected	Turnover	Staff
1 Regional One Transport*	airlines	100	product safety; occupational health and safety; contaminated land; unplanned environmental incidents	£3,400m	27,200
2 BP*	oil and gas	100	product safety; occupational health and safety; workplace diversity; biodiversity	\$10,180m	115,530
3 Unilever*	food producers and processors	100	product safety; occupational health and safety; water consumption; water pollution	€46,760m	247,000
4 Vauxhall Water UK	utilities	100	product safety; community investment; biodiversity; resource use	£780m	1,217
5 Asda*	retailer	100	workplace diversity; community investment; resource use; indirect impact	£29,000m	38,000
6 Waste Recovery Group*	support services	250	product safety; occupational health and safety; biodiversity; water pollution	£300m	845
7 Co-operative Bank*	banks	100	workplace diversity; community investment; biodiversity; water consumption	£405m	4,163
8 J Sainsbury*	food and drug retailers	100	product safety; workplace diversity; biodiversity; resource use	£74,495m	172,900
9 Balfour Beatty*	banks	100	workplace diversity; community investment; water consumption; resource use	£11,375m	17,250
10 Radio-Planet*	telecommunications	100	product safety; occupational health and safety; water consumption; emissions to air	£2,760m	27,200
11 BT Group*	telecommunication services	100	workplace diversity; community investment; social inclusion; governance	£20,100m	104,700
12 Scottish Power*	electricity	100	occupational health and safety; community investment; biodiversity; contaminated land	£5,200m	13,800
13 Lloyds TSB	banks	100	occupational health and safety; diversity in the workplace; community investment; indirect impact	£9,770m	73,557
14 Shell UK Environmental	support services	100	occupational health and safety; community investment; resource use; unplanned environmental incidents	£20m	161
15 Sainsbury	food and drug retailers	100	product safety; occupational health and safety; resource use; social inclusion	£9,500m	81,000

The conceptual model behind the Index is shown below. The *Corporate Strategy* section looks at how well the company's values are reflected in what the company does, and the *Integration* section examines how companies organize, manage and integrate corporate



responsibility throughout their operations. The degree to which *Integration* is evaluated is assessed by way of *Management* section which is broken down into: *Community*, *Environment*, *Marketplace*, and *Workplace*. The *Environment* section looks at how the world's ecosystems and natural resources are affected by a company's operations and products. In the *Performance and Impact* section a company's social and environmental performance are assessed according to six impact areas. Two of these are environmental impact areas: global warming (i.e. energy and transport together); and waste management. A further two areas are selected from either: product safety; occupational health and safety; human rights in the supply chain; diversity in the workplace; and community investment. The last two impact areas are to be of material interest to its business.

Environmental impact areas were selected by many of the 100 companies listed in the Sunday Times "Hall of Fame" list. "Unplanned Environmental Incidents" was selected by 10 of the 100 companies as a 'material impact area', while 30 companies selected "Water Consumption", and 24 selected "Resource Use". Companies selected "biodiversity", "water pollution", and "emissions to air", 17, 13 and 11

times, respectively. These data suggest that companies take seriously the impact that operations have on water and resource consumption. There is potential to link ECONW with BITC and the CRI to elaborate on the impacts of resource consumption. Companies could 'ground truth' REAP's inter-industry trading assumptions, identify the resource intensity of those sectors included in existing supply chains, and compare the company's ecological footprint with that of the industry sector average.

### Evaluation Criteria for Benchmarking Tools

The main task of this paper is to determine which of the three benchmarking tools is best suited to dovetail and enhance the functionality and utility of the ECONW project. In order to achieve this evaluation criteria (shown in Table ??? below) are used. The selected criteria reflect the objectives of the ECONW project, especially its focus on mass balance, resource productivity, and the Regional context.

Criteria	Benchmarking Tool		
	PERFORM	ENWORKS	ASSESS
Audience	14 Selected Industry Sectors	All Industry	Industry Env'l & Waste Service Providers
Delivery Method	On-line	Facilitated On-line	On-line & Stand Alone
Minimum Time Investment (days)		0.5 – 1.0	0.5 – 5.0
Self or Assisted Evaluation	Self	Assisted	Self
EMS Required	No	No	No
Establishes Baseline	Yes if historical data available	No	No
Provides Targets for Firms	No	No	No
Provides Sectoral Targets	No	No	No
Link to Regulations	No	No	No
Data Requirements	Historical Social, Env'l, Econ Data	Cost Operations & Data	Env'l Policy, Material Throughput Data
Provides Firm Averages	Yes	No	No
Provides Sector Averages	Yes		No
Environmental Policy Focus	Yes	No	Yes

Criteria	Benchmarking Tool		
	PERFORM	ENWORKS	ASSESS
Emissions Focus	Yes	No	No
Material Flow Analysis	No	No	Yes
Resource Consumption Focus	No	No	Yes
Embodied Energy of Production Focus	No	No	No
Cost Saving Focus	No	Yes	No
Sectoral Breakdown	14 Industry Sectors	16 NWDA Sectors	16 3-Digit SIC Codes
Addresses Climate Change	No	No	No
Addresses Ecological Footprint	No	No	No
Main Outputs for Firm's Use	Benchmarking Charts for Which Firm Provides	Opportunities (return on Investment (ROI)) Report	Recommendations for Action Resources
Tangible Recommendations	No	Yes	Yes / No
Links to REAP Structure	Company emissions (e.g. CO <sub>2</sub> , mg/m <sup>3</sup> ) Company waste arisings	Company raw material savings Company energy savings (kWh) Company water savings Company carbon savings	Company input material quantity Company E input

## Results and Conclusions

The are practical benefits to be derived from dovetailing ECONW with an existing industry benchmarking scheme. This paper examines three such applications, PERFORM, ENWORKS, and ASSESS, and evaluates them against criteria that are specific to the hopes and aspirations of ECONW. The are a number of interesting results:

- With respect to all 3 tools:
  - A handful of desirable attributes for the ECONW benchmarking tool are not addressed by any of the three existing benchmarking programs;
  - All three tools harness the power of the internet to increase access for industry
  - In general, none of the tools succeed in defining a resource consumption / waste framework for participating companies
  - None of the 3 tools make a linkage between industry performance and climate change
  - None of the 3 tools use a generalized global environmental impact measure

like the ecological footprint to put industrial performance in a larger (regional or global) context

- PERFORM
  - Focuses on 14 industrial sectors and tries to make the tool sector-specific
  - Does a good job of using indicators (generic and sector-specific) to place companies on a performance spectrum, and then showing minimums, maximums and averages
  - Generates compelling charts and helps to identify targets but stops there unless historical data is provided by company
- ASSESS
  - Breaks down industry by 3-digit SIC code, but then doesn't appear to build on this disaggregation
  - Operates at perhaps the highest level of abstraction with respect to general environmental policy performance, but at the same time is the only tool to attempt a mass balance for a company
  - Relies on a simplified performance scale and generic recommendations to 'move' companies toward sustainability
- ENWORKS
  - Uses a broad classification system that matches the NWDA 16 sectors, but again does not attempt to benchmark the sectors or compare inter-sectoral performance
  - Places a strong emphasis on operational cost savings for companies, but tracks little else
  - Benefits from a wide network of local partners and on-the-ground advisors / support personnel; a feature that would ECONW would benefit from
  - Have no mass balance functionality or sectoral monitoring and are open to discussing feasibility of 'bolting' on something of this nature to the existing tool

The utility of the ECONW benchmarking tool would be optimized if integrating with the ENWORKS tool was possible. ENWORKS currently collects some raw material and waste data, but doesn't do anything with it. Coupled with ECONW, companies would be able to put



these parameters in to context, especially if ECONW succeeds in providing sectoral figures for indirect material consumption and emissions. The complexity of material flow analysis, a central theme of ECONW, underlines the benefits of accessing the on-site expertise of ENWORKS' advisors. ENWORKS focuses on cost savings, and in doing so, establishes the tool as being in tune with a high priority business objective, rather than coming across as a tool that is purely good for the environment.

### **Further information:**

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