

**Toward a Nationally Integrated Approach to Environmental
Data Capture in the UK
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1. Synopsis/Summary

- 1.1 Over the past decade a stream of Government reports relating to waste in the economy have consistently confirmed **the difficulty of developing sound policy due to the lack or unreliability of non-financial data relating to resource flows in the economy**. This despite the availability of far better systems in mainland Europe – developed in some cases over many decades.
- 1.2 In the UK, however, there is **much activity developing**. **This paper is designed to map out the nature of these disparate initiatives** and coupled to this, a series of recommendations aimed at integrating those diverse initiatives in a more cohesive fashion. The Landfill Tax Credit Scheme has stimulated many of the latter and it is estimated that at least £12m has been committed in financial resources from LTCS, Government and trade sector sources in the last 6 years.
- 1.3 As is often the case in the waste area, however, the most obvious single driver lies in EU framework directives, regulations and other policy instruments. The most significant of these is reflected in the current consultation from the EU on a strategy for sustainable consumption and production – mirrored in the spring DTI/DEFRA consultation released on 11th March. In 2004 the introduction of EU regulations on waste statistics is also a powerful driver, coupled to the passage of the Waste Emissions Trading (WET) Bill through the UK House of Commons. **Emissions trading is predicated on the existence of clear targets matched by a transparent and accurate data recovery system** capable of permitting obligated parties to claim financial instruments that offset their statutory liabilities. As such an underpinning data collection network will become essential within the next 5 years.
- 1.4 **The extension of Producer Responsibility** initiatives to specified sectors will in turn create a widening market for such financial instruments **predicated on audit standards** equivalent to those in force for conventional Financial Accounting Systems – in short, environmental Tradeable Permits and financial instruments will form an increasing part of corporate asset/liability valuations in conventional balance sheets.
- 1.5 **Gaining national competitive advantage** via transparent, holistically designed data capture systems is an important element in closing the UK international productivity gap. Those advantages become manifest in the form of:
- The development of more effectively targeted policy instruments.
 - Speedier implementation programmes and faster achievement of objectives.
 - Greater finesse in policy making.
 - Greater understanding of regional differentials.
 - Faster consensus on gaps/duplication in policy areas.

- The emergence of common agreements on software protocols and standards.
- Improved national time management through single entry systems.
- Greater transparency in and public support for policy initiatives.
- Improved cost effectiveness.
- The closer integration of “data clusters” across separate arms of Government, industry and society. Those broad data cluster areas comprise:
 - European and UK regulatory and statutory drivers (the European Resource Efficiency Programme, the Waste Emissions Trading Bill, EU regulations on waste statistics (2004)).
 - Intra-waste industry flow aggregation (on landfill inputs, hazardous waste flows and material exit routes to non landfill reprocessing).
 - Public sector/household municipal waste flows linked to best value indicators, WET, biomass requirements, the Landfill Directive and recycling targets.
 - Compliance and tracking systems to meet the Packaging Directive Tradeable Permits framework.
 - Emergent Producer Responsibility data management requirements emerging post 2004 (tyres, WEEE, ELVs, etc).

1.6 Cross departmental government data flows – statistical information on waste is likely to be of growing significance to other government departments – particularly education and transport. Respectively this is due to:

- The replacement of around 200 landfills employing around 1000 staff which process waste over 30 year cycle periods being replaced by around 2000 hi-tech centres employing around 20,000 staff processing waste on a continuous basis in less than 30 days. The looming skills gap and educational requirements for staffing those facilities (from children currently at GCSE stage in the secondary education system) is critical.
- Long distance haulage of private sector materials on the road network could double from the 60 million tonnes of material in the inbound side of the economy to 120 million tonnes as it is supplemented by 60 million tonnes of material diverted from local landfills to distant reprocessing centres.
- The impact of requiring up to 5,000 hectares of space for waste processing facilities adjacent to populated centres as largely rural landfill sites close down and the effect this will have on planning policy in the context of regional government.

2. Recommendation/Conclusion

- 2.1 The development of a national strategy for developing a holistic framework of environmental data management in UK regions, industry sectors and specific material flows is a matter which **cannot be left to the vagaries of free market systems** or isolated, non communicating, narrowly based interest groups – in the private or public sector. This is a classic role for national government administrations, underpinned by a clear commitment to protecting public interest, transparency and cost effectiveness.
- 2.2 Government also has an interest in developing such an integrated system if – in the long run – it commits (as it has said in the past) to the use of fiscal and budgetary instruments to mitigate environmental “bads” as well as use stimuli to promote environmental “goods”. **An online national database information system is an essential pre-requisite for such a strategy.**

3. Why Bother? What are the Consequences of Doing Nothing?

- 3.1 One has only to look back over the last 10 years to comprehend the implications of not having adequate data available to policymakers, industry and others involved in the environmental debate. Numerous official Government reports and publications are littered with references to these shortcomings arising from the absence of data (list). Specifically these shortcomings have resulted in:

- (a) **Failure to quantify the scale of end processing requirements when undertaking Regulatory Impact Assessments (RIAs)**

Example – in the early stages of the fridge crisis, instructions to impound new fridges being imported when unaccompanied by documentary evidence of coolant compliance threatened the closure of Felixstowe Docks. Subsequently, lack of understanding on the sheer tonnage of scrap fridges produced each week led to massive miscalculations on the processing capacity requirement. It took 2 years after regulations came into force for the UK to put sufficient processing capacity in place.

Example – as at June 2003 (12 months ahead of compliance date) no accurate assessments matching processing capacity (including landfill) to arisings of hazardous waste (under the new EU classification system) exist.

- (b) **Dysfunctional Forward Investment Scheduling on the Part of the Private Sector**

Lack of data on the volume, geography and composition of waste flows creates an atmosphere of mistrust between the waste industry, NGOs and Government, fuelling accusations of scare mongering, complacency and much else in between. In consequence, investment is not forthcoming until the very last moment when Government acknowledges a problem is emerging and introduces the necessary regulatory or fiscal framework. Unfortunately the lead times in making that capacity available then extend beyond compliance dates scheduled in the appropriate EU or UK regulations. This in turn drives feast/famine crises in the supply of processing equipment.

Example – a switch of Landfill Tax Credit money to bid schemes to initiate kerbside recycling programmes led to the swamping of available capacity in the UK based plastic container market with rationing by price and reduction in value for money as subsidies for kerbside programmes moved from zero to tens of millions of pounds.

Example – the introduction of the fridge regulations without a single processing plant being available in the UK, leading to the unregulated export of unquantified numbers of UK fridges. Two years after the compliance date, there is still no analysis of what has happened to 0.5 million tonnes of fridges by exit route, region and tonnage.

Example – there is no common data system identifying the relationship between the capacity reduction occurring in landfills compared to the rate at which capacity expansion is occurring in the opening of replacement higher technology facilities. Not only is this information not collated nationally – there is no publicly available set of indicators identifying it on a region by region basis to inform the development of waste plans or the debate triggered by those Waste Disposal Authorities seeking to justify decisions on technology mix.

(c) **Lack of data triggers suspicion and sudden shocks in the public participation debate**

This is attributable to the local lack of understanding on the composition or mass of local flows – industrial and commercial as well as municipal – and the tendency on the part of the planning system to confine itself to implications for municipal waste only (or in some cases not even that). As a result – as decisions are deferred and deferred – the stark urgency to agree solutions often comes as a surprise to the general public and results in a feeling that the issues are being “steamrollered” through. The scale of this harsh reality is reflected in comments from the Environment & Rural Affairs Select Committee Report, May 2003, “that 1 x 40,000 tonne capacity reprocessing facility needs to be consented in the UK every week for the next 14 years (check) to supply sufficient capacity”.

All these issues are particularly acute in waste/solid resource management. They will be emphasized by the following factors:

- (i) By 2015 an estimated 60+ million tonnes of material (excluding any organic growth) will need to be diverted from landfill. That material needs to be processed between 2,000-3,000 biological, thermal, mechanical, chemical handling technologies with a typical process capacity of 20,000-50,000 tonnes per annum (around 20 lorry movements daily). These locations will process waste in hours or days – not decades as is currently the case.

- (ii) EU Directives will begin to bite in 2007 as a range of Producer Responsibility initiatives become “live”. The lead-time for those handling facilities to be in place are a minimum of 2 years – 1 year for planning and 1 year in build. Additionally – witness fridges – DEFRA/EA require at least 12 months to agree operating and emissions standards (these have to be set ahead of decisions on what to specify and what to apply for on planning).
- (iii) The majority of that 60+ million tonnes currently passing to landfill involves no vehicle transshipment and is generally to locations within a 20 mile radius of point of origin. Once new technologies are in place, that material will be transhipped at least once in its return cycle and much of it will be moved long distance to highly regionalised recycling or remanufacturing operations (but not manufactured soils, aggregates or those converted to energy). The implications of this for regional traffic patterns has not been modelled (although it is the subject of a current LTCS study). Data is central to this.
- (iv) In landfill, 4 people can process 400,000 tonnes. In the newer biological, thermal, mechanical, chemical process operations working continuous shifts, that throughput productivity will drop from 100,000 tonnes per capita to around 3,000 tonnes per capita (based on 16 staff manning a 50,000 tonne capacity plant). The potential skills gap implications have not been modelled because the data does not exist.

4. Can the Need for Environmental Source-Points Be Grouped/Sub-classified?

4.1 It is a strategic role of Government to undertake such tasks – failure to do so leads to bad policy and substantive impacts on national productivity underpinned by wasted financial resources. In the case of waste/environment, the following groups/key drivers suggest themselves:

- (i) **Those underpinned by extant/imminent statutory requirements or existing Government driven initiatives.**
 - The Landfill Directive.
 - The European Resource Productivity Programme.
 - The Waste Emissions Trading Bill/Act (January 2004?).
 - Wisard.
 - DTI/DEFRA resource productivity studies.
 - The EA Regional Analysis Programme (REWARD).
 - Regional Development Agency and waste planning obligations.
 - Proof of performance for the WRAP and REMADE Programmes.
 - The Audit Commission Best Value Indicators Programme.
 - Environment Agency industrial/commercial waste surveys.
 - EU waste data collection requirements.
 - The Hazardous Waste Directive.

(ii) **Corporate/trade sector initiatives based around supply chains into the economy.**

- CIPFA Municipal Waste Statistics.
- LGA statistics.
- e-Government initiatives based on health (epidemiology), residential (households), transport, etc.
- Private sector corporate social responsibility reporting standards (relating to emissions, waste, etc).
- Waste sector data protocols to meet statutory and other environmental impact reporting requirements.
- Producer Responsibility triggered current and future electronic validation/audit systems (paper, card, glass, plastics, timber, electrical goods, tyres, ELVs, batteries, farm agrochemicals, household hazardous wastes, etc).
- Supply chain accreditation systems (BS8555 for SMEs involving entry of resource use and disposal data) (also linked to CSR reporting).
- Existing or emergent sectoral knowledge exchange systems relating to resource use and disposal developed via trade bodies (Figure Four (First for Farming)), capitalwastefacts.

(iii) **Regional initiatives**

- Capitalwastefacts.
- Welsh Assembly commitment to trial municipal waste database.
- CIPFA environmental database.
- Incipient Northern Ireland environmental database.

(iv) **Landfill tax/NGO linked initiatives.**

- The Biffaward Mass Balance Programme (appendix I for geographic/material/ sectoral breakdown).
- FORWARD (WWF).
- REGIONET.
- EcoSys (www.ecosys.org.uk).
- DataFlow.
- Wasteflow.
- WasteNet.
- Proprietary consultant/private sector CSR initiatives and databases (eg ERM's Diligen database capture system).
- The waste sector benchmarking/experience sharing/communications/industry research network – www.wastenet.net.

5. Structure of Databases

5.1 All the above listed databases generally focus on content but it is equally important to gain agreement on minimum standards for:

- Operating standards.
- Data classification systems.
- Single entry systems.
- Cross database knowledge exchange protocols.

5.2 **The functionality of the database systems should be defined against a general strategy for upgradability and expansion** – issues not necessarily embedded at the beginning but allowed for from day one to obviate waste of financial resources. The integration of such knowledge exchange networks improves the public sector's ability to undertake comparative benchmarking. Opportunities are also created for the regulated commercialised sale of such information to external third parties. Totally unscientific surveys suggest that local authorities must be the subject of around 1,500-2,000 surveys each month relating to environmental data and waste.

6. Conclusion

Only Government can drive this process in a strategic framework but it must work in conjunction with its DEFRA and other Ministerial teams, the regulator, local government, green NGOs, the waste industry and product supply chains to create such a national asset.

This is needed to drive UK competitive advantage in the emergent new Environmental Economy where interaction between financial and resource databases is an essential prerequisite to finesse policy, define realistic targets and achieve transparency of monitoring on progress.