Ireland Now – Current Status of Composting and Prospects for the Future

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Presentation Format

• Development to date of Composting in Ireland
• Focus today on municipal waste (organic wastes from households, businesses and green waste) and on centralised schemes
• Opportunities and Challenges ahead
Pioneering Schemes – Phase 1

• A number of Schemes pre-dated regional waste plans, e.g.
  • Limerick City
  • Tralee/ Killarney Schemes
  • St. Annes Park, Dublin (green waste)
  • Cork City (green waste)

• Knowledge brought forward:
  • Value of pro-active public communication
  • Good quality compost produced
  • Management challenges – collection systems, financing, facility operation, local communications
• Benefit of Regional Waste Planning and Political Buy-In

• Local Authority Schemes
  • Galway City (Sandy Road/ Carrowbrowne)
  • Galway County (Ballinalsoe)
  • Waterford City and County Schemes
  • Green Waste composting (Limerick, South Dublin etc.)

• Application of new technologies and environmental controls

• Emergence of local authority/ private sector ‘partnerships’

• Growing confidence of public and waste management industry in the ability to deliver a good product
Current Stage of Commercial Growth – Phase 3

- Private Sector driven development
  - Mc Gill (sludges initially)
  - CTO Cork
  - Organic Gold (Meath), etc

Large Scale Facilities in construction or in planning, e.g.:
  - Barna Waste (Galway City)
  - Greenstar (Ballycoolin, Dublin)
  - AES Tullamore
  - Thornton Waste
  - Mr Binman (Limerick)

- Key Points – commercially viable scale, flexible regarding waste streams, employing a range of technologies & approaches to end-market development
Location of Composting Facilities in Ireland (2003)

• 16 Facilities in Republic
• 4 Facilities in N. Ireland
• Several New Facilities Planned
• Biowaste, Green Waste, Sludge and Commercial Organics accounted for 61,950 tonnes of waste composted in 2003
• At least 4 more facilities in last year
• Need for several fold increase in biological treatment facilities
Types of Composting Facilities in mid-2003

- Regulation – Mainly operating under Local Authority Waste Permit, until 2002/2003
- Gradually newer facilities operating under EPA Waste Licence (some in conjunction with landfill Licence)

![Graph of composting facilities and feedstock capacity and quantity](image-url)
Experience Gained in Initial Phases

• Siting of facilities a critical factor

• Management Challenges for facility operators (odours, feedstock acceptance criteria and recording, biofilters, bioaerosols, site security etc.)

• Monitoring/Waste Permits: need for ‘even playing pitch’ across local authorities and regular monitoring of all composting plants even green waste facilities

• Flexibility in choice of plant: robust, mobile, compatible with improved technologies and environmental controls

• Better technology and facility management helps avoid nuisance problems.
Composting Plants

Galway City – Carrowbrowne (VAR system)

Cork City – (CTO/ Green waste composting)

Waterford City – (Celtic Composting System)
Ballinasloe Composting Scheme
Current Organic Waste Collection Systems


• Household Organic Waste – Source Separated Collections in Place in Galway, Ballinasloe, Waterford City, Killarney, Limerick, etc. – currently 52,000 households with brown bin

• Commercial Organic Waste (hotels, canteens, food processors)
  • Emerging source separation schemes
  • Waterford County Scheme/ Killarney

• Mechanical Separation of organic waste from mixed municipal waste (trommels/ shredders etc.)
Irish Compost Quality

• Comprehensive research project in 2003 by Lorraine Herity / QUB supported by Cré & RPS-MCOS

• Indications of good quality compost – especially from source separated household and green waste

• Room for improvement from operators:
  • Presentation in the afternoon session – more details

• Operators need to appreciate the value of monitoring/ sampling
Initial Schemes

• Local markets, not for profit
• Back to public for free, or local authority landscaping works

Recent trends (divergence of markets)

• Emergence of stable end use markets for Class 1 compost, even into UK market (peat ‘extender’) green waste but also source-separated biowaste
• Some companies happy to produce ‘lower grade’ compost / stabilised biowaste, not earning revenue
Regional Waste Management Plans

• Developed over 1997 – 2001
• Follow EU/ international best practice models
• All place emphasis on biological treatment of organic waste using both home composting and centralised facilities
• Objective to collect organic waste separately through brown bin systems and Waste Recycling Centres (CA Sites)
• Foundation Stone for our developing integrated waste management system
• To be reviewed soon by local authorities – requirement for biological treatment likely to increase.
## Regional Waste Management Plans

<table>
<thead>
<tr>
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<th>System proposed</th>
<th>National coverage</th>
<th>Compostable Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collection (Households)</strong></td>
<td>Kerbside collection of biowaste</td>
<td>Majority of urban households</td>
<td>Food waste/ vegetable/ green waste</td>
</tr>
<tr>
<td></td>
<td>Recycling Centres (Civic Amenity Centres)</td>
<td>81+ proposed</td>
<td>Green waste, paper, timber</td>
</tr>
<tr>
<td><strong>Collection (Commerce/Industry)</strong></td>
<td>Separation at source of recyclables incl. organic waste</td>
<td>Major businesses</td>
<td>Including food waste</td>
</tr>
<tr>
<td><strong>Biological treatment</strong></td>
<td>Home composting</td>
<td>Subsidised home composting units available to all (especially rural)</td>
<td>Food waste/ green waste</td>
</tr>
<tr>
<td></td>
<td>Local composting facilities (mainly windrow)</td>
<td>26 proposed (green waste)</td>
<td>Food waste/ green waste</td>
</tr>
<tr>
<td></td>
<td>Biowaste- biological treatment plant</td>
<td>10 central facilities proposed – mainly source separated biowaste</td>
<td>Food waste/ green waste</td>
</tr>
<tr>
<td></td>
<td>6* local facilities proposed</td>
<td>6* local facilities proposed</td>
<td></td>
</tr>
</tbody>
</table>

**Targets of All Plans combined, for organic waste**
• EU level – Biowaste Directive (forthcoming), Landfill Directive (in place), EU Soil Strategy (emerging)


• National Strategy on Biodegradable Waste (Currently in consultation on Draft)

• Waste Management Plans – due to be revised in 2004/2005

• Direction of Policies:
  • Increased biological treatment required (Composting/AD)
  • Emphasis on source separation/ separate collection systems
  • Use of instruments to support these objectives: Awareness, improved regulation, economic instruments, market development, pay-by-use etc.
Overall Targets – Biodegradable Waste Strategy

• Biological Treatment of Organic Municipal Waste:
  • 425,000 tonnes/ annum by 2009
  • > 350,000 tonnes/ annum in central facilities (green waste, central composting, AD facilities)
• Separate collections for households and relevant businesses

Galway City – 3-bin waste collection system
Green Waste Composting Opportunities

• Growing Urban Population – more houses, more parks, etc..
• Network of Recycling Centres growing: drop-off points for green waste
• Relatively low investment in equipment – alternatively co-composting of green waste with biowaste
• Opportunity for agricultural sector?
• Lower gate fees but good long-term facility, and excellent market potential for compost
Composting – Further Opportunities

• Co-composting with other waste streams – agri-food industry, fish industry, sludge etc..

• Vermicomposting Schemes

• Community Composting Projects

• Development of Home Composting – training, management of programmes

• On-site composting schemes (business, industry, institutions)

• All of these will contribute to development of public awareness and meeting national targets
On-Farm Composting Plants?

- Agriculture in a state of flux
- Difficulties with nutrient management
- Alternative enterprises emerging
- Compatibility with composting/AD initiatives – existing buildings, machinery, etc..
- Green waste,
- Possibly Biowaste
Dublin’s Composting Plants

- Two Biowaste Composting Plants at Ballyogan & Kilshane
- Each 30,000 - 45,000 tpa capacity – food waste – Brown Bin collection
- Both form part of Integrated Recycling Parks
- Procurement underway via PPP arrangement
Challenges Ahead

• Evolving Legislation
  • Technical Standards for composting (Animal By Products Regulation/ Biowaste Directive etc..). Cost Implications.

• Growing Pains
  • Scale of increase in capacity required means some ‘bad news stories’ are a risk. All waste facilities are potentially contentious.

• Economic Changes
  • Likelihood of Disposal Prices falling – smaller margins for composting plants/ consolidation of facilities – advantage of a saleable compost product
  • Improved Facility Management – Environmental Management Systems, traceability (feedstock, compost), sampling/ monitoring…
Market Development Challenges

Up to 200,000 tonnes/ annum of compost will be produced by 2009 - The following steps are required, involving all stakeholders:

**Waste Management Industry / Local Authorities**
- Commitment to producing a quality product
- Commitment to separate collection systems, public involvement

**Government/ DOEHLG**
- Identification of Relevant Standards/ Uses of compost grades
- Co-ordination of *Market Development Programme* (involving agriculture, horticulture, forestry etc.)

**Composting Industry – Development of Market Driven ‘Quality Assurance’ Scheme**
Role of Mechanical Biological Treatment?

• Range of pre-treatment systems available for mixed (residual) waste prior to landfilling or thermal treatment, producing ‘stabilised biowaste’ and residual fraction.

• Attractive for commercial waste and to landfill operators

• Short-term response to Landfill Directive – limited progress in terms of climbing waste hierarchy

• Need to guard against damaging the long-term market for compost – stabilised biowaste will be limited in its applications

• Should not be seen as a replacement for source-separation of organic waste
• Scale of growth required in Biological Treatment to meet targets – source separated systems
Possible Biological Treatment capacity—Regional exercise

- Scenario for distribution of Biological Treatment required to meet targets (includes ‘spare capacity’)
- This is just one possible interpretation: each region will determine its own strategy

<table>
<thead>
<tr>
<th>Region</th>
<th>Biological Plants</th>
<th>Capacity</th>
<th>No. plants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationally</td>
<td></td>
<td>21 - 28</td>
<td></td>
<td>361,250</td>
</tr>
<tr>
<td>Dublin</td>
<td></td>
<td>30,000</td>
<td>3 - 4</td>
<td>105,000</td>
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<tr>
<td>Cork</td>
<td></td>
<td>20,000</td>
<td>2 - 3</td>
<td>50,000</td>
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<tr>
<td>Connaught</td>
<td></td>
<td>15,000</td>
<td>3</td>
<td>45,000</td>
</tr>
<tr>
<td>South East</td>
<td></td>
<td>15,000</td>
<td>2 - 3</td>
<td>37,500</td>
</tr>
<tr>
<td>Mid West</td>
<td></td>
<td>15,000</td>
<td>2 - 3</td>
<td>37,500</td>
</tr>
<tr>
<td>North East</td>
<td></td>
<td>12,500</td>
<td>2 - 3</td>
<td>31,250</td>
</tr>
<tr>
<td>Midlands</td>
<td></td>
<td>10,000</td>
<td>2 - 3</td>
<td>25,000</td>
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<tr>
<td>Donegal</td>
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<td>5,000</td>
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<td>Kildare</td>
<td></td>
<td>5,000</td>
<td>2</td>
<td>10,000</td>
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<tr>
<td>Wicklow</td>
<td></td>
<td>5,000</td>
<td>2</td>
<td>10,000</td>
</tr>
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</table>
CONCLUSION

• National targets for biological treatment are very ambitious
• Policies are in place in support of developing biological treatment
• Economic conditions make composting commercially viable
• Industry poised for huge growth in the next five years
• Make the commitment to doing it right:
  • Clean compost
  • Facilities – well sited, designed and managed
  • Long term viability