Waste Management in the 21st Century – the trade media’s perspective

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Waste Management World magazine
About PennWell Corporation

• Not just waste!
• Founded in 1910 with Oil & Gas Journal magazine. Still family owned
• Today highly diversified B2B company with 130 print and online magazines/newsletters
• 60 Conferences and exhibitions spreading six continents
About Waste Management World

• International, bi-monthly journal magazine
• 18,000 qualified subscribers
• + 1200 ISWA (International Solid Waste Association) members
• Special sections: WtE, Collection & Transport, Biowaste, Recycling
About Waste Management World

- Digitise or Die!
- Global media is changing
- Website, e-newsletters
- Social networking
- SEO, not CEO!
- Global video coverage
Journalism: love & hated?

• “Today’s headlines are tomorrow’s fish and chip papers”
• The Leveson Inquiry
• Journalism reputation
• Trade media: a different perspective
National media perception of ‘waste’ stories

• “Homeless man is crushed to death after falling asleep in wheelie bin” (Daily Mail)
• “Fly tippers face prison” (Express.co.uk)
• Huge fire at waste disposal firm (BBC News)
• Waste management in Noida ‘unsatisfactory’ (Times of India)
• Used syringes thrown in hospital rubbish (Echo)
• The electricity in your garbage bin (FT)
WMW’s highlighted global case studies

• Landfill mining: Closing the Circle
• WtE: Brazil’s Waste Legacy Redeemer?
• Microwave Plasma Gasification
• The burning question: public perception
• Qatar’s Integrated Waste Facility
• Rise of the machines: Robot Recycling
• Deinking: the digital divide
• Rare earth element recycling
WMW’s highlighted global case studies
Closing the Circle: Enhanced Landfill Mining

- REMO site in Belgium + energy recovery
- 16 million tonnes, documented
- ELFM – more than just landfill mining!
- 45% material recovery
- Potential to power 75 – 100MW power plant

WMW’s Verdict
- Cost analysis important
- Historic lack of data
- Gasification confidence needed + growing
Waste to Energy potential in Brazil

- Aluminium can recycling leader – waste pickers
- WtE – long discussions but lack of results. Why?
- Low gate fees. Regs deeming landfill “enviro adequate”
- High moisture, low LHV waste composition
- Opportunities?

WMW’s Verdict
- First tender = domino effect
- Could follow Singapore model

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Microwave Plasma Gasification

- Plasma arc gasification buzz: APP/Geoplasma/Nippon Steel
- Plasma2Energy trial in Mexico – 3,600 tpa.
- City of McAllen, Texas plans for 180,000 tpa facility
- Microwave power = ionised waste = syngas + inert slag
- Trial data – microwaves need 10%-20% power from syngas
The burning question: public perception

- Global viewpoints
- Changing design to appease planning (ski slope facility)
- Education, Education, Education!
- Proximity Principle
- What’s in it for me?
- Japan public engagement

WMW’s Verdict
- Perception improving
- Mechanisms needed
- Scandinavian Success
- NIMBY to YIMBY!
Qatar Integrated Domestic Solid Waste Management Centre (DSWMC)

- Qatar Ministry appointed Keppel Seghers 20 year DBO contract
- 4 x Waste Transfer + 1 x DSWMC
- 2,300 tonne per day capacity (including 1,500 tpd WtE facility
- 30 MW exported to grid
- Engineered landfill to accept incinerator bottom ash (IBA)

WMW’s Verdict
- First of its kind in ME
- Unique multi-facility
- Mesaieed industrial park = no space or nimby issues!
- Qatar to lead other ME nations in waste
Rise of the Machines: Robot Recycling

- Industrial Revolution – Automotive precision
- C&D waste – Europe: 870 mt/yr
- ZenRobotics trial with Sita Finland
- Scan and sort inert materials, wood and metals
- Replaces 15 staff – reliability
- Ability for 24/7 operations?
- Partner with NIR optical sorting

WMW’s Verdict
- Limited applications
- 2D material challenges
- Potential for larger, hazardous fractions
Rare Earth Element Recycling

- 1.5MW wind turbine requires 350kg of Rare Earth Elements
- REEs: 17 elements in periodic table
- China control: 97% of world supply
- Mining shortfall – turn to recycling?
- Japan plans to recycle REEs in 45 gadgets + $1.2 bn in research
- Perception: 0.1% of phone weight
- Hitachi recovering hard disk drives
- Ok-Institut: Euro recycling network needed

WMW’s Verdict
- Separation challenges
- Price is the driver
- Others to follow

Japan
• Change to digital printing from analogue
• Undeinkable prints affect on recyclers
• Trial in France: HP + Arjowiggins Graphic
• Produced deinked pulp suitable for production
• Current deinking facilities only able to cope with 2%-10%

WMW’s Verdict
- Lab trials encouraging
- Proven with Indigo prints
- Volumes?
Nappy recycling

- Knowaste entry into UK – 1 mt feedstock!
- Collection trials in UK
- Going Dutch: Netherlands
- Autoclave, sterilisation and sep
- Fibre/plastic end products
- Licensing technology to develop globally
- Australia/Germany next?

WMW’s Verdict
- Cost competitiveness
- Offtake steam from industrial clients
- End markets key
Final thoughts

“In the real world, nothing happens at the right place at the right time. It is the job of journalists and historians to correct that”

(Mark Twain, US, humorist, writer)
THANK YOU FOR LISTENING!

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