



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

Tom Freyberg, Chief Editor
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



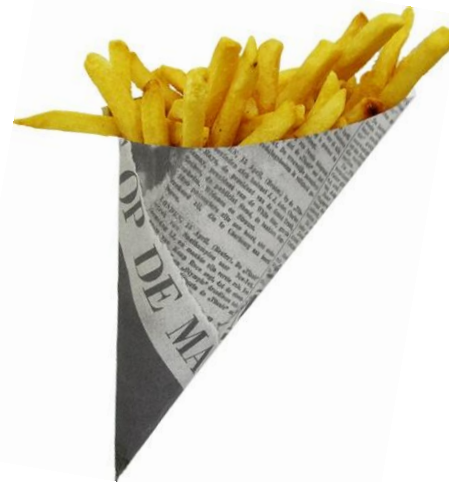
About Waste Management World

- 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



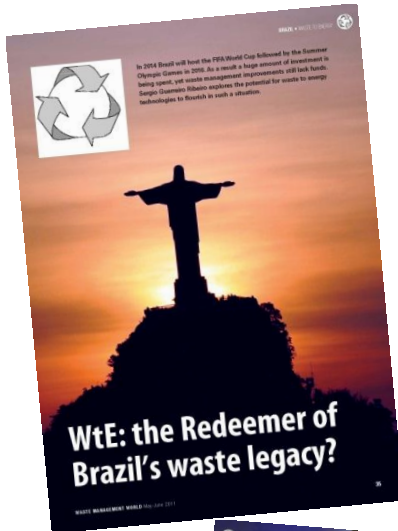
National media perception of 'waste' stories

- “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



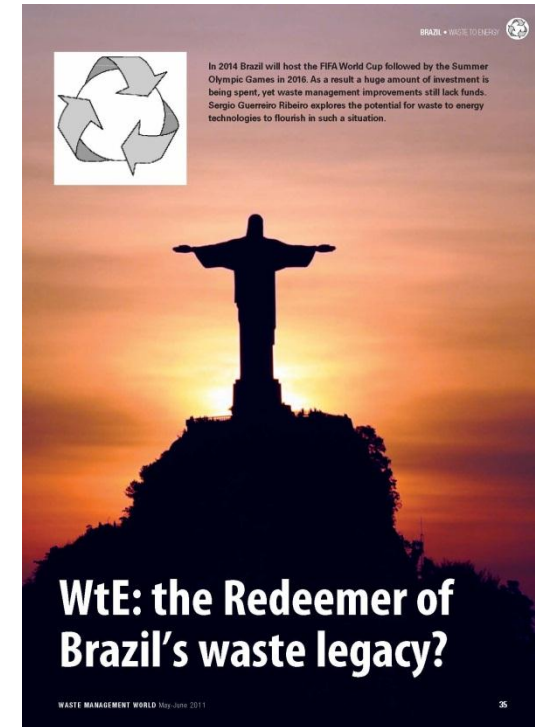
- REMO site in Belgium
+ energy recovery
- 16 million tonnes, documented
- ELFM – more than just
landfill mining!
- 45% material recovery
- Potential to power
75 – 100MW power plant

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?

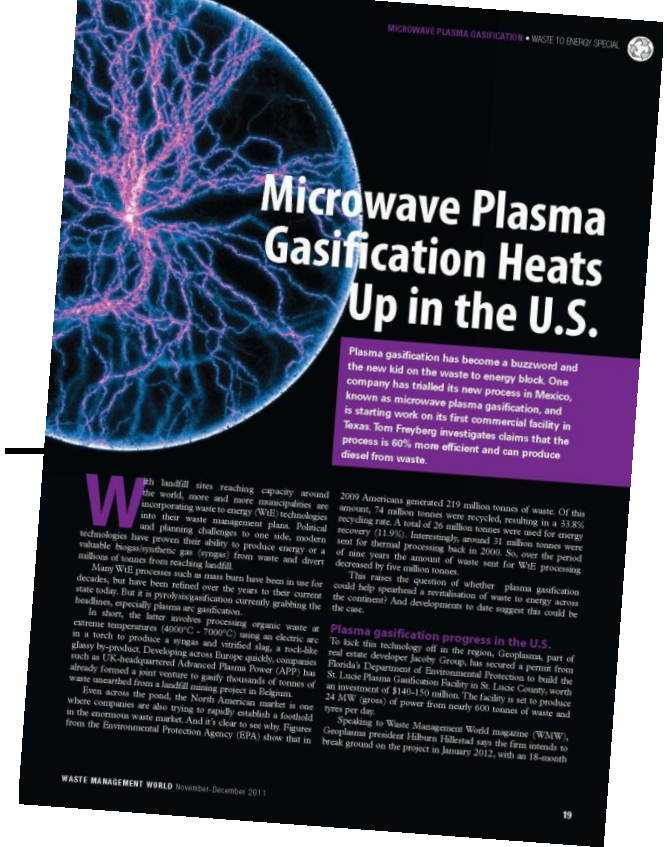
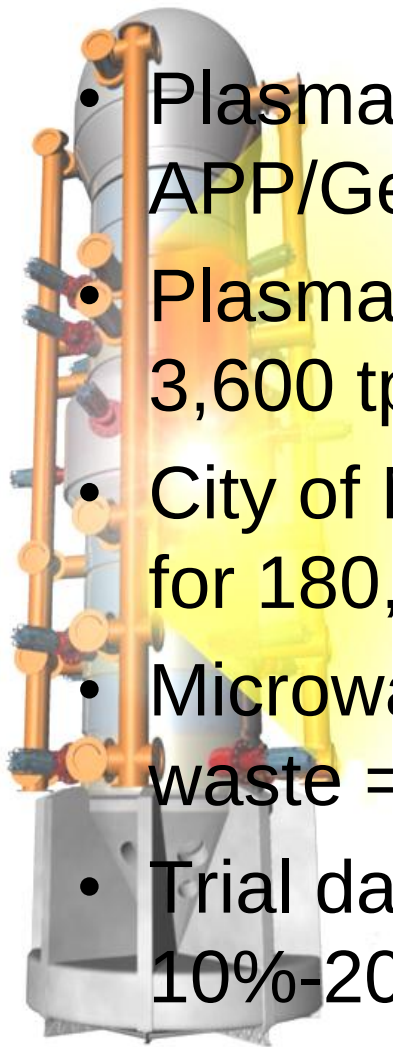


WMW's Verdict

- First tender = domino effect
- Could follow Singapore model

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

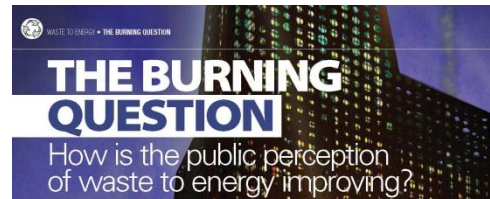


WMW's Verdict

- Different to plasma arc
- Slag markets needed
- Diesel by-product
- Operation data from Texas crucial

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



New waste to energy facilities may be welcomed in certain countries in Western Europe, but elsewhere it's still a controversial issue. WMW asked several of the leading international industry experts to see how the image of thermal treatment is improving among the public.

ENGAGING UK STAKEHOLDERS UK WASTE MANAGEMENT COMPANY



MIKE SNELL
GENERAL MANAGER,
EXTERNAL AFFAIRS,
WASTE RECYCLING GROUP UK

There is no doubt that the role of waste to energy incineration in meeting the world's residual waste treatment needs is gaining on a new global report states that there are 2,150 waste incineration plants in operation in the world and global capacity is set to increase by 60 million tonnes annually by 2015. (Incidentally, China is at the head of this expansion.)

Europe too continues to expand with the UK market as one of the most dynamic, driven principally by the need to meet pressing EU landfill diversion targets. The waste in the UK though is still, while there is growing acknowledgement by all authorities and businesses of the role of WtE in balanced, waste and energy strategies, the public remains stubbornly sceptical of the arguments in favour of treating residual waste in this way.

Government, local authorities and industry must continue to work together to ensure the public's out of date view of "incineration" as dirty and polluting,

and to demonstrate how WtE is an important option in helping to reach targets for landfill diversion and renewable energy generation.

An open, transparent and proactive approach by developers with their stakeholders remains the best way of overcoming the generalized concerns of a sceptical public.

These are examples of some excellent communications practice out there, and this shows in the successes achieved in winning permissions for facilities.

The Scottish Government's Localities Bill is a timely vote for many developers, as these companies that are prepared to get under the skin of localities and fully understand how it will impact future planning processes, will be the ones that reap the rewards of successful waste infrastructure delivery. And that's vital if the UK is to realise a truly sustainable, low carbon economy.

SKIING TO SUCCESS IN DENMARK DANISH WASTE MANAGEMENT FIRM

Denmark has a long tradition of waste incineration, and in general the public is sympathetic on the matter. This may be because waste is a part of the district heating system and that is their way of getting heating. In Denmark, we have never experienced more resistance to waste incineration than towards power plants in general.

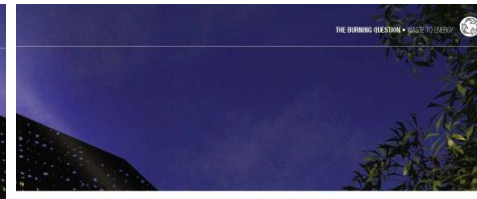
At the same time we are a politically driven country. It provides safety for the citizens to know that waste incineration for us isn't just about the financial bottom line but also includes emphasis on the environment. Our location just 40 kilometres from the centre of Copenhagen makes Amager Øst being an integral part of the capital. However, this also means we're not step outside the lines and to continuously strive to maintain a good relationship with our neighbours.



LILLA ROTTGER,
MANAGING DIRECTOR,
AMAGER ØST,
DENMARK

Furthermore, Denmark has a tradition of visiting public schoolchildren to visit the waste incineration plants. This is something we promote very much as it has an educational element to it, especially when children subsequently go home to their parents and discuss why before we are not to be thrown in the trash. And then finally we have our new plant. We got a lot of effort into engaging the city when Amager Øst was awarded - both in relation to the media but also the actual event of the day. Afterward Amager Øst has commenced itself.

With the architect Bjarke Ingels, we have a fantastic ambassador. The reason around the world is that many people and the vast Amager Øst as an example of "sustainable" sustainability is in relation to the architecture but also in relation to our way of seeing waste - namely as a resource.



IMPROVING KNOWLEDGE ACROSS EUROPE EUROPEAN ASSOCIATION



DR. ELLA STENIG,
MANAGING DIRECTOR,
CONFEDERATION OF
EUROPEAN WASTE TO
ENERGY PLANTS (CEWEP),
BRUSSELS

Contrary to old impressions, of any incineration, modern WtE plants are all equipped with sophisticated filter devices in order to attract very low emissions. The energy efficiency equipment (E1) normally set in the European Waste Framework Directive (which public awareness in the fact that WtE does not only destroy the pollutants in the waste, but, at the same time produces energy.

We observe better public acceptance of WtE plants that are energy efficient. By using energy prices people also notice incineration, coupled with messages about energy security, means that the public is increasingly aware of their role in ensuring that waste incineration is a renewable energy source has certainly encouraged more positive perceptions about energy from waste in general.

To help improve perceptions about WtE, we must focus on addressing one fundamental question: "What's in it for me?" People understand the benefits - whether it's heating for their local school, heat for their electricity - they will be more ready to accept WtE.

PROXIMITY PRINCIPLE COMMUNICATIONS CONSULTANCY



PAUL DAVISON,
MANAGING DIRECTOR,
PROXIMITY PUBLIC RELATIONS,
UK

Having conducted community and stakeholder consultation about many waste to energy projects, I'd say that the physical appearance of the facility is pretty low down on most people's list of priorities. They more significantly ask, "what will it look like?" but this is a more difficult question to answer. It is a question to discover just how close the WtE facility is going to be to their homes - and can they see it from their backdoor window? In other words, proximity in the single biggest influence on people's perceptions. The closer the facility is to a community, the less they are going to like it. This trend is particularly prevalent in Britain and Ireland, but it exists to please the Denmark and Germany too.

Despite this, the principle of using waste to generate energy is becoming increasingly accepted. The promotion of recycling and waste minimisation, coupled with messages about energy security, means that the public is increasingly aware of their role in ensuring that waste incineration is a renewable energy source has certainly encouraged more positive perceptions about energy from waste in general.

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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



Deinking: the Digital Divide

- 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

- Knowwaste 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?



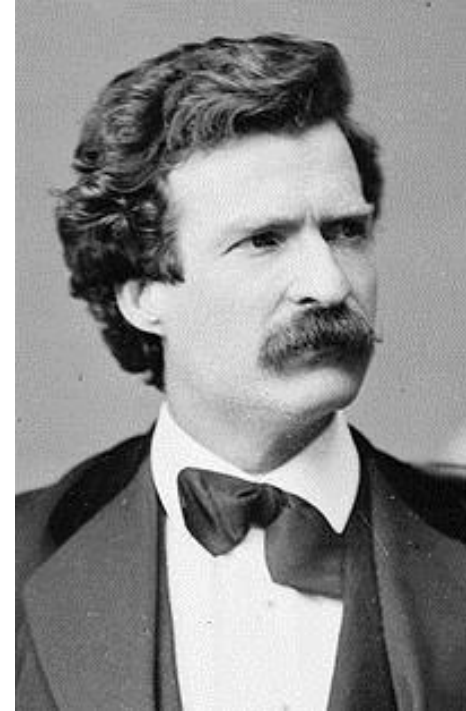
WMW's Verdict

- 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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