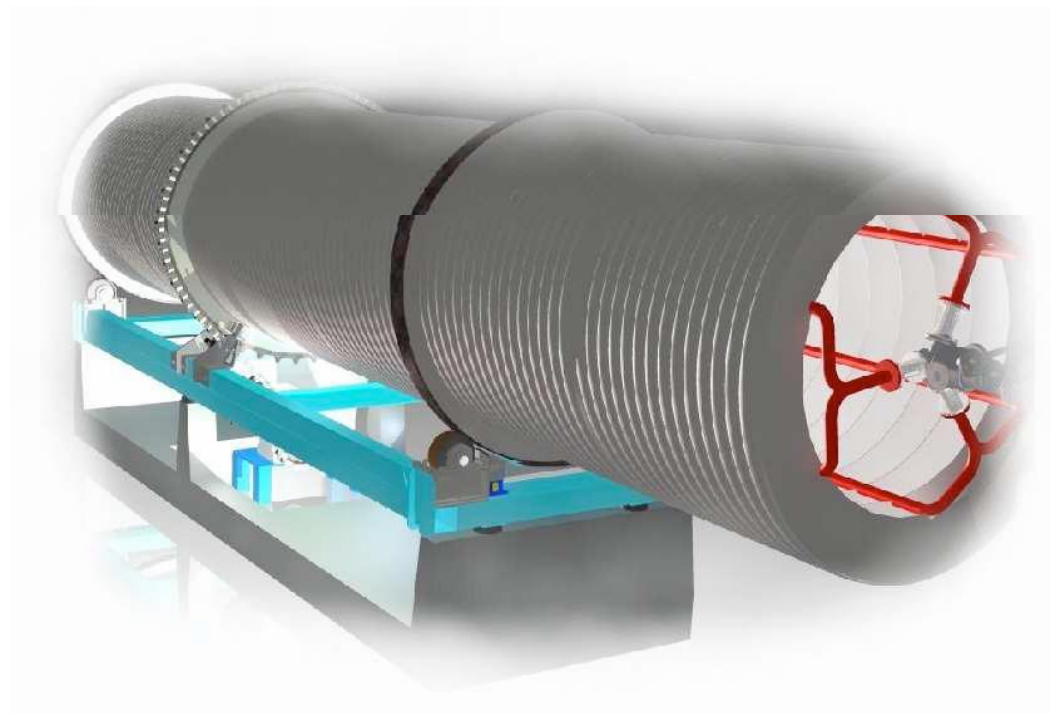


THE SELF FINANCING ZERO WASTE SOLUTION



The Vantage Waste Processor

September 2009

INTRODUCTION THE PROBLEM OF HOUSEHOLD AND COMMERCIAL WASTE

We have a unique solution to that problem – a true waste to energy process and bio product manufacturing, including :-

What makes up a typical bag of household waste?

The current methods of dealing with household waste.

The Baltic Development Bio Products (BDB) alternative.

Introducing the Vantage Waste Processing Facility.

What are the benefits?

Vantage Waste Processor.

How the Vantage Waste Processor works.

Odour Removal

What the Vantage Waste Processor can achieve.

What biomass looks like.

Acknowledgment

TREATMENT OF WASTE

The current methods of dealing with waste at present:

Landfill:

- Waste is buried without sorting
- Takes up valuable space
- Renders land unusable for many years
- Toxic effluent leaches into land



Incineration:

- Combustible waste is burnt
- Non- combustible waste is sent to landfill
- Creates harmful sulphur emissions
- Requires high unsightly chimneys
- Requires high energy input
- Expensive operating costs



WHAT IS THE SOLUTION - *THE BDB ALTERNATIVE*

Thermal Hydration Steam Treatment – New Generation Autoclave

By treating municipal household waste with high temperature and moisture, the waste can be rendered into usable product which can be sold back to raw material processors, or used to generate highly valuable bio ethanol or electrical power.

Significantly reduced energy requirement

End product a sanitised saleable biomass fuel

Reduced planning issues

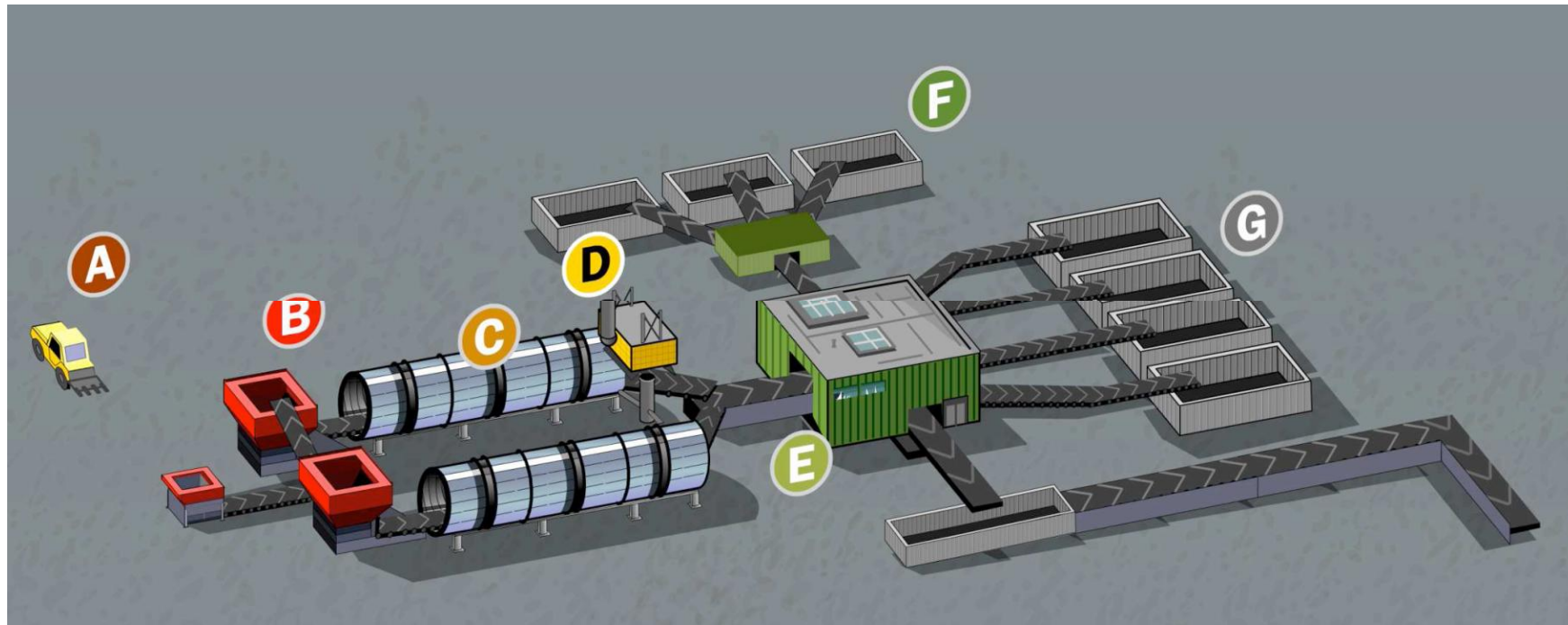
No sulphur emissions

No fumes

Reduces capital outlay.

Costing approximately 1/5th of a comparable incinerator

INTRODUCING THE VANTAGE WASTE PROCESSING FACILITY



A Pre-sorting and loading area
B Shredding and Feed Hoppers
C Vantage Processor
D Odour Removal

E Sorting (General)
F Sorting (Plastic)
G Material Storage

THE SELF FINANCING ZERO WASTE SOLUTION

WHAT ARE THE BENEFITS?

Paper, Cardboard, Plastics & Food

Pre-Separation unnecessary

Each waste treatment unit can handle multiples of up to 80,000 tonnes of household waste per annum

Waste is sanitised and reduced , achieving up to 60% reduction in volume

Fibres are broken down into a state of uniformity

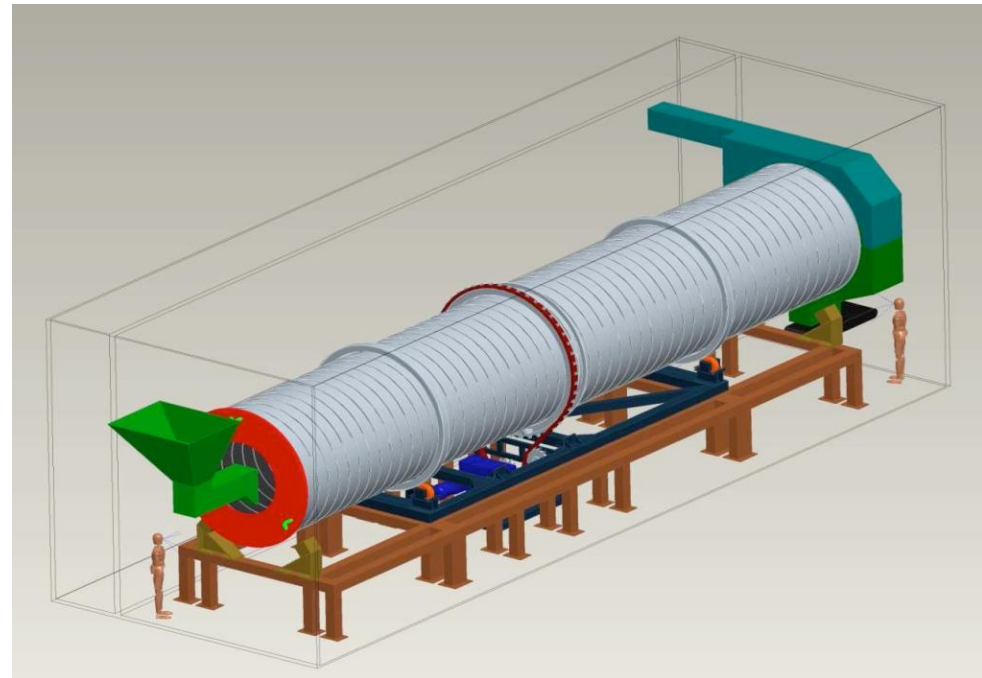
Calculations based on a plant running 91% of the year, the above exceeds UK Government energy policy

VANTAGE WASTE PROCESSOR

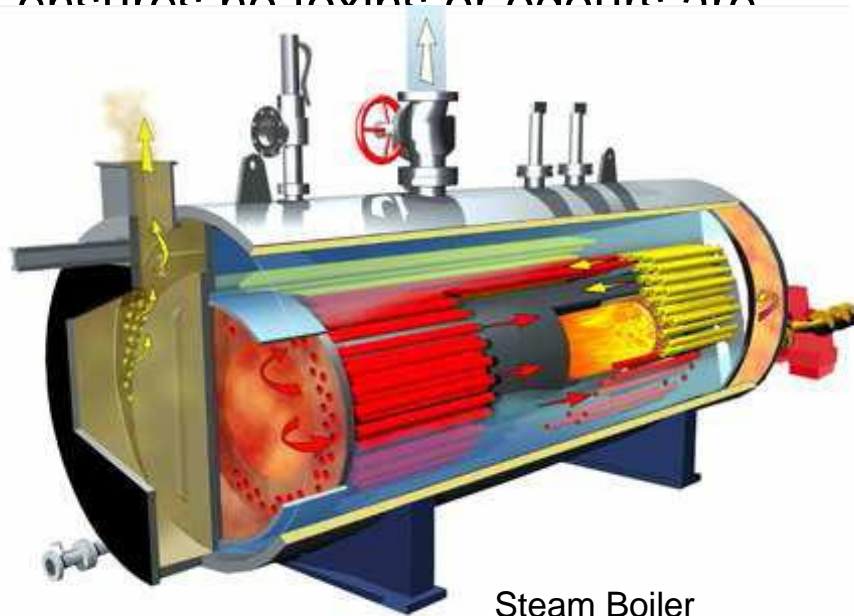
By treating municipal household Waste with “high temperature steam”
On a continuous feed basis,
Sanitised biomass is produced.

Biomass fibre is open and uniform
having been subjected to steam at
160 degrees at 10 Bar.

A patented odour removal system
ensures no toxins or odours are



VWP

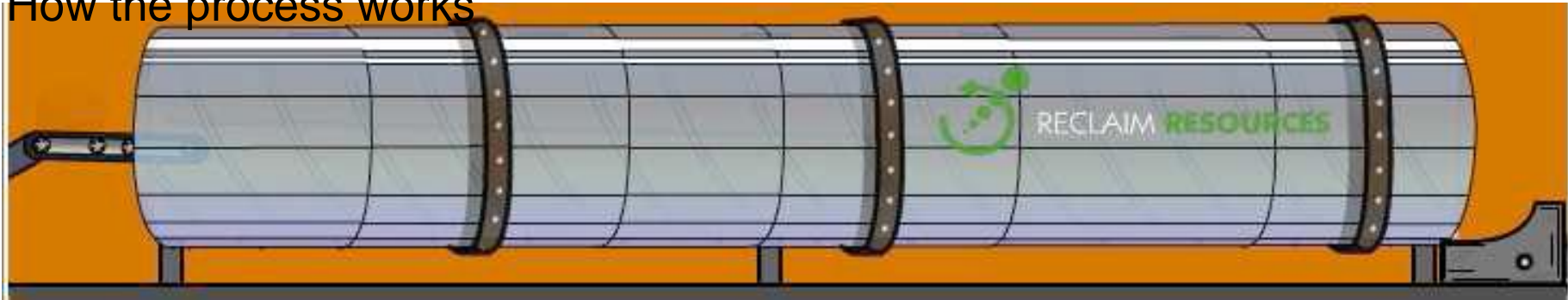


Steam Boiler

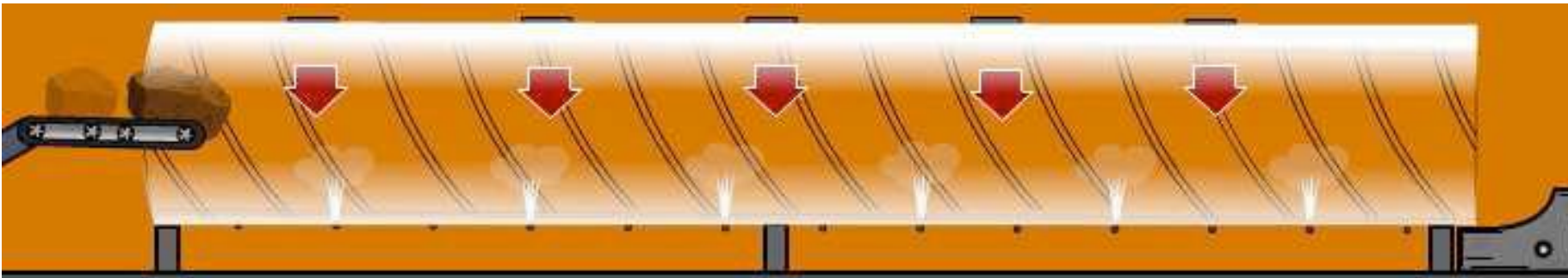
Each unit processes 10 tonnes per hour
(typically 80,000 tonnes per year).
Each plant can expand to include
additional processors.
Very low energy requirement.
Worldwide patented process.
Manufacturers Guarantee

Vantage Waste Processing

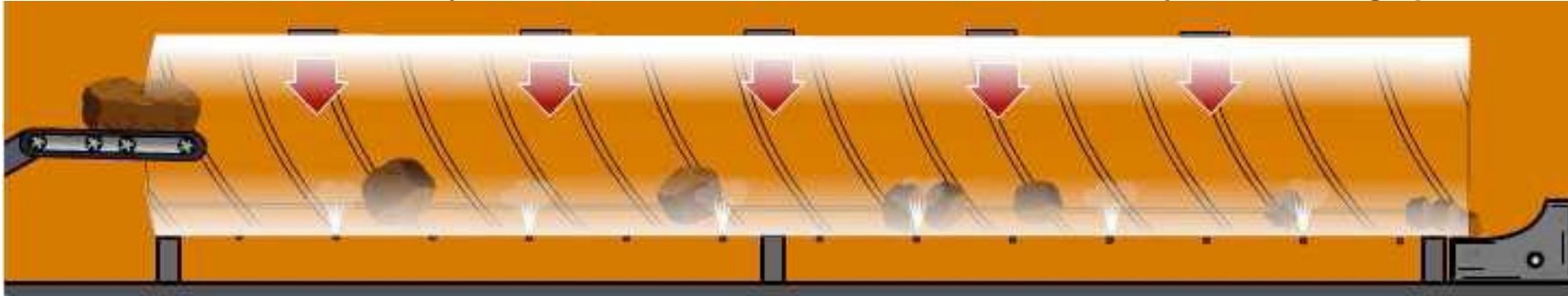
How the process works



The Vantage Waste Processor chamber spins at 60 revolutions per hour, continuously processing rubbish



Shredded waste is continually loaded into the VWP where it is rotated and injected with high pressure steam

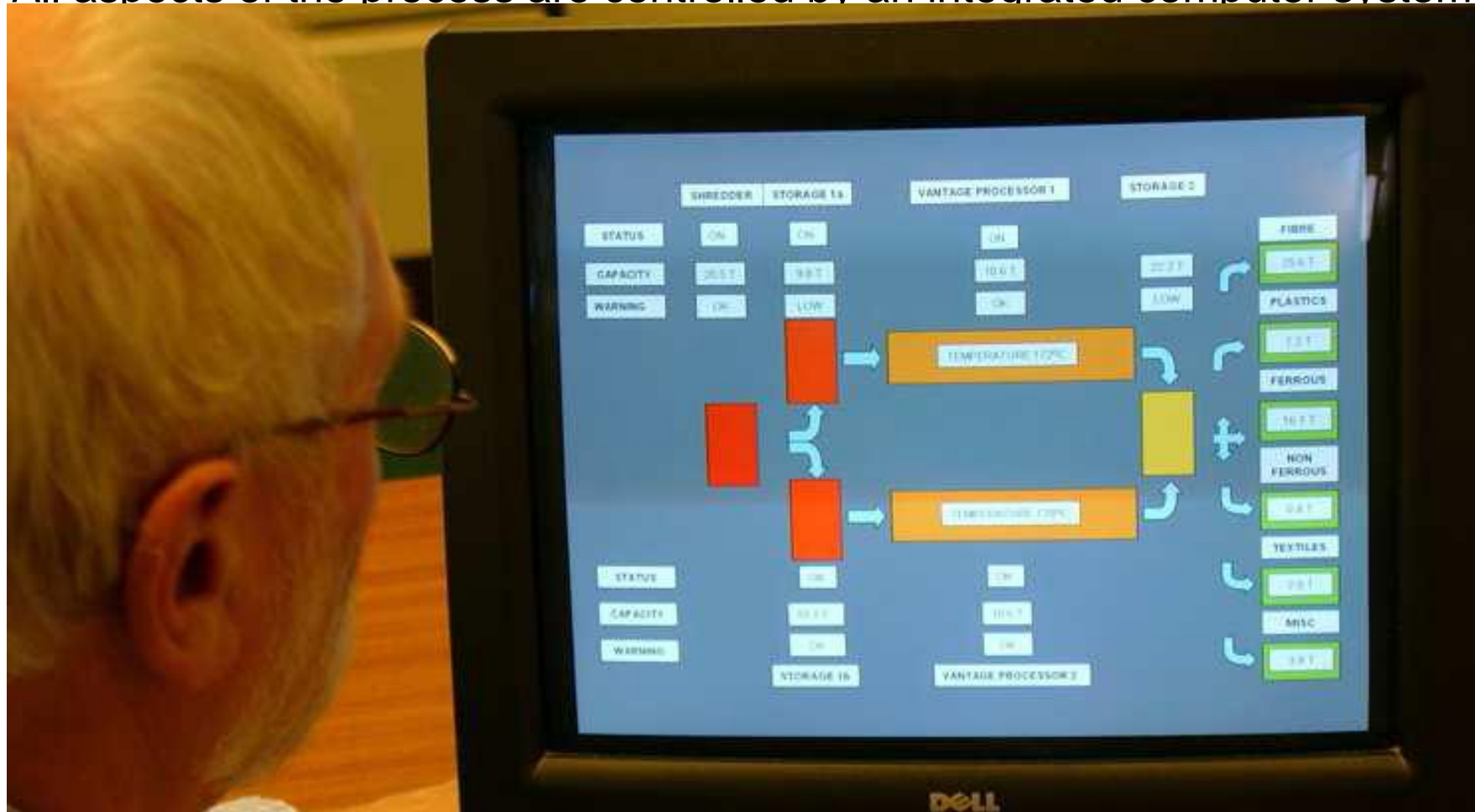


As it rolls through the VWP, the waste is sanitised and the overall volume is reduced by up to 60%

THE SELF FINANCING ZERO WASTE SOLUTION

COMPUTER CONTROLLED

All aspects of the process are controlled by an integrated computer system



Continual monitoring of the plant and flow diagram showing plant status at a glance and anywhere in the world.

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ODOUR REMOVAL

No odours are omitted from the process.

The risk is eliminated by the installation of an odour removal system incorporated in the extract ducting with high frequency processing with UV light to breakdown odour causing molecules and toxic fumes.



This unique, two stage, patented system, will prevent any unpleasant odours being emitted from the process, with no unpleasant smells exhausted to the atmosphere, leaving the air safe to breathe.

To remove any remaining residual Ozone, the airflow then passes into a second chamber which contains a series of ultra violet lamps producing UV light at 254nm. This has the effect of breaking down the complex molecules naturally into oxygen (O_2). At this stage the oxidation process is complete and any residual ozone is destroyed. This ensures that no ozone is discharged to atmosphere. Once the odorous air has passed through the Odour Control Unit it will have been purified at which stage it can then be safely discharged to atmosphere.

Delivery To Site

Transporting a single Vantage Waste Processing chamber to site

A single VWP weighs only 16 tonnes suitable for most roads.



Thermal Insulation

Copper insulation being wound around Vantage Waste Processing chamber prior to full body insulation



Thermal Hydration

Screw thread conveying blades and steam injectors



Municipal Shredded Waste In....

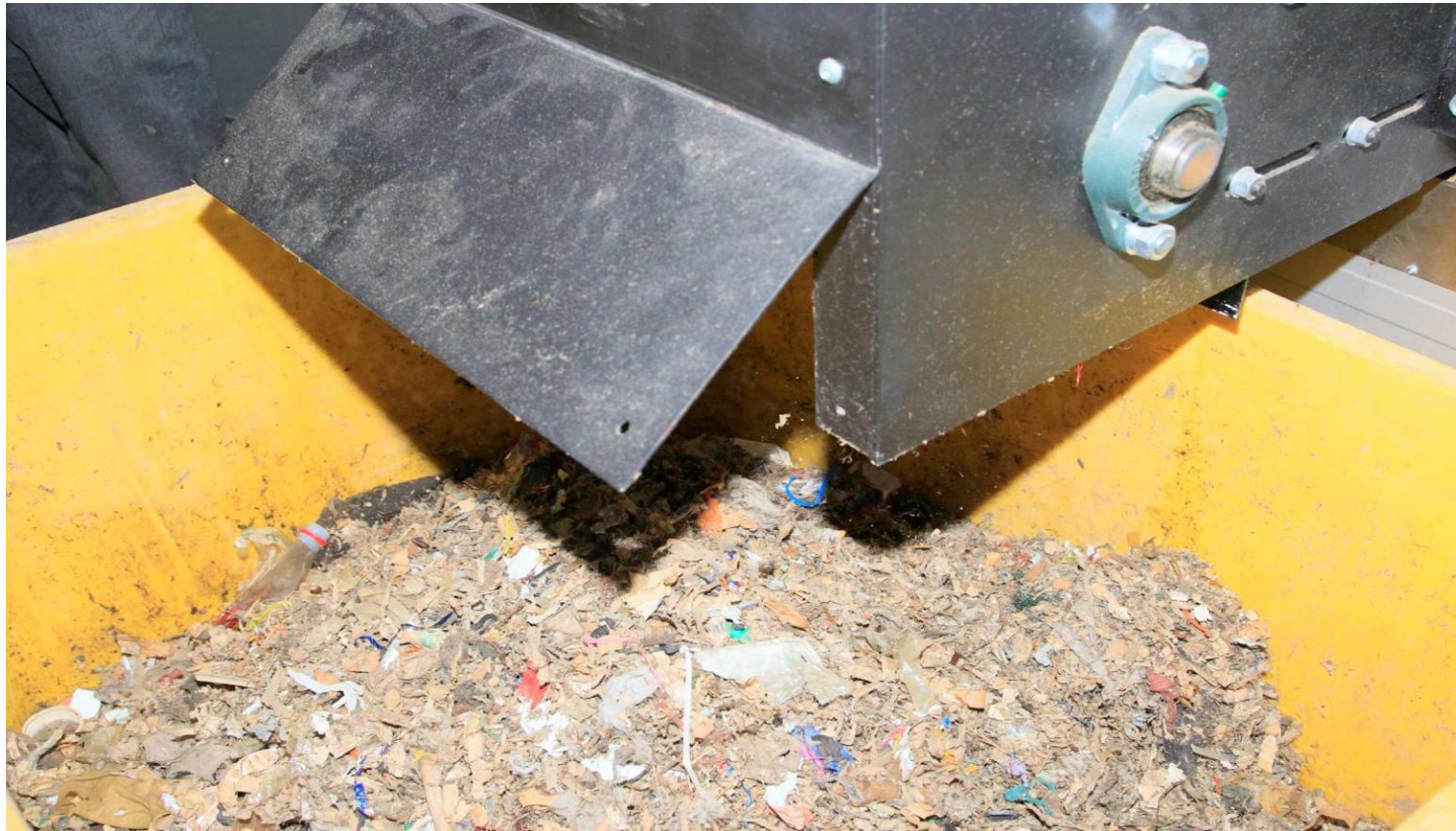


Asynchronous Shredder

THE SELF FINANCING ZERO WASTE SOLUTION

Transformed into useable recycled materials

For example shipping pallets, fencing and traffic barriers



Biomass

THE SELF FINANCING ZERO WASTE SOLUTION

ACKNOWLEDGEMENT

THE VANTAGE WASTE PROCESSOR

Recent quote from PERA:-

" This is a simple process . The steam breaks up the carbon chain and allows the Hydrogen and Oxygen molecules to join with the carbon, creating more energy . It is fast, predictable and efficient when compared with all other competition "

PERA is one of Europe's leading innovation and business support organisations with a presence in eight European countries.

Established in the UK over 60 years ago as an industry association owned by the companies it serves, we now work to improve the growth and competitiveness of industry and business in Europe.

BALTIC DEVELOPMENT BIO PRODUCTS LTD

Composites made from Recycled Plastic, Wood, Textile Fibre and other Household Waste.

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THE SELF FINANCING ZERO WASTE SOLUTION

DEFINITION OF THE PROBLEM

There are 450 Kg of waste created for every man woman and child in the Western World every year.

Landfills are full or closing.

Waste is growing by 7% per decade.

Recycling - There are currently no end processes for most types of waste.

- Improvements in recycling technologies are mandatory to meet new EU mandates to divert 25% of waste streams by 2010, and 50% by 2012 from landfill.
- Incinerators cost significant amounts of money to operate (at least £125 m over 25 years).

SOLUTIONS

Baltic Development BioProducts (BDB) has created a new composite technology using nano-science and new biopolymer science to make recycled composite plastics.

*Working together with the **Vantage Waste Processor** capable of processing 80,000 tonnes of household waste per annum into safe sterilized biomass and steam cleaned recycled plastic pellets. BDB has engineered this waste so that it can be processed using normal plastic injection moulding machines to make composite plastic shipping pallets, fencing, traffic barriers, railway sleepers, kerbstones & building materials:*

The Process:

- Embeds the toxic materials safely without dangerous fumes, smoke, or off-gassing at low temps of 120-190C.*
- Creates a super-wood material 4 x's stronger than wood and 22% stronger than virgin plastics.*
- Uses standard economical, off-the-shelf plastic equipment..*

BDB COMPOSITE PLASTICS TECHNOLOGY SOLVES RECYCLING PROBLEMS

BDB Composite plastics cost 1/5th to 1/3rd of virgin plastics:

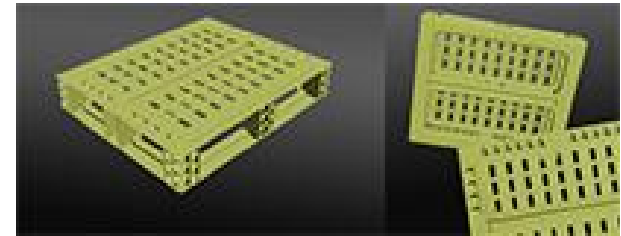
- Safely creates a new economic life for recycled material.
- Only takes 5 - 10% of the energy required to make virgin plastics.
- Can safely process all plastics, wood, fibre and biomass from vantage waste processor.
- Works with standard plastic plant technology, therefore affordable.
- Beats virgin plastic in all performance guidelines.
- Is 22% stronger than other plastics for dynamic loading & shock absorption.
- Replaces virgin materials entirely including trees and virgin plastics for everyday items, such as fencing and decking.
- Creates a new **green** industry and earns **carbon credits**.

BDB BIO PRODUCTS

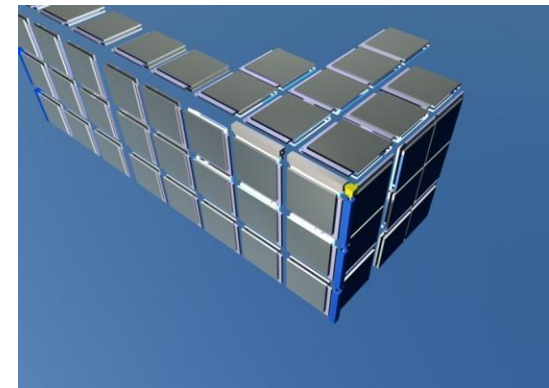
Pallets: Certified tests conducted on BDB composite by **Cinpres** (who hold a global patent for gas assisted injection moulding systems) showed that BDB pallets were 22 % stronger than their virgin plastic equivalents, last for over 100 trips and are 4 times stronger than wood.

The BDB pallets are also exempt from tariffs of 2 Euros per trip in Europe which non ecological pallets are subject to.

Eco-home composite panel construction: 120 cm interlocking panels for fast easy construction of homes and 2 million litre capacity tanks and silos.

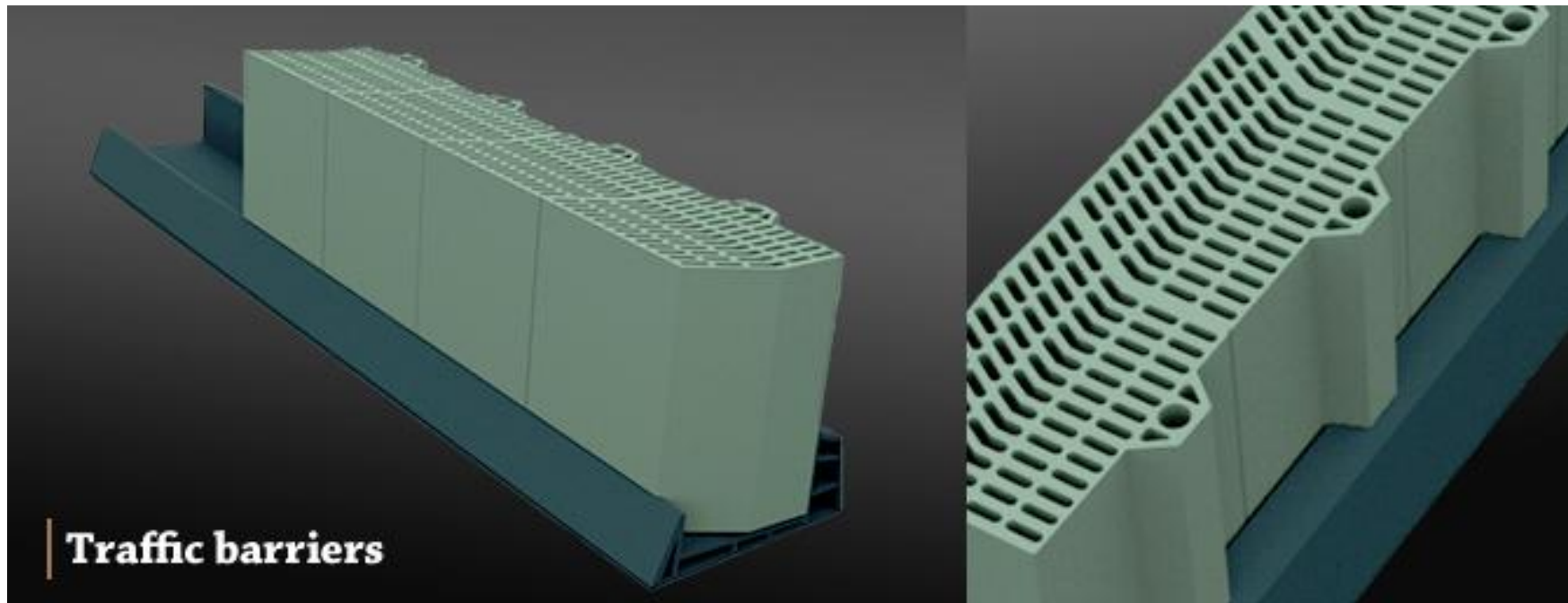


Patented 120 cm Home & Tank Panel Systems:



BDB TRAFFIC BARRIERS

Composite materials made from used tyres are excellent in the manufacture of road barriers whilst solving the environmental problem associated with their disposal.



Using BDB developed composites with CAD simulations of car crash scenarios at the Swedish Traffic Institute it found these composites to be far superior to any metal, concrete or other barriers currently in use today.

BDB FENCING

22% Stronger than other plastics, insect proof, mould resistant and water proof

4 x Stronger than wood for fencing

Interlocking for strength.



RESIDUAL GREEN WASTE

BDB will provide a proper composting facility.

Compost will be made available to the Island free of charge.

Any remaining compost can be utilised in the Island's parks and gardens.



SUMMARY

The EU has mandated a 25% reduction in landfill mass next year and a 50% reduction by 2012 without any clear solutions...

All waste which is processed by BDB utilising the *Vantage Waste Processor*; and/ or ground up, processed and formulated, will be put back into the manufacturing cycle.

Overall; BDB's goal is to recombine waste streams in ways that give them a new economic life, while diverting hundreds of thousands of tonnes from landfill and minimizing the energy required to recycle them into superior strength building materials.

BDB solves the problems of over-burdened landfills.



BALTIC DEVELOPMENT BIO PRODUCTS

Baltic Development BioProducts is a green products franchise that can solve the end-processing which is missing in all landfill sites world-wide.

Baltic Development Byproducts' methods of manufacturing and production are about achieving economic growth while respecting environmental limits, by finding ways to minimize damage to the natural world and making use of the Earth's resources in a *high-tech* and *safe* way.

“Baltic Development BioProducts” in conjunction with “*Vantage Waste Processors*” can replace all dangerous incinerators or other non green processing systems with an economically superior non-polluting and non-emitting system that uses the newest technology to safely reuse & eliminate hazardous plastic and household waste.

THE SELF FINANCING ZERO WASTE SOLUTION

COVER-ALL

Cover-All design buildings are used in the harshest of conditions. They have built over 30,000 utility buildings around the world and will provide a steel framed, engineered fabric building that is extremely hard wearing. The unmatched combination of worldwide experience, natural light, and engineered building strength make Cover-All the world leader in steel-framed, fabric building solutions. Designed specifically for your climate, your location, and your building needs, Cover-All is the ideal waste management building solution.



JAY DUBINSKY

With 17 years in engineering and design in waste management and water purification systems, Jay began with a degree in Biology with Engineering at the **University of California Irvine**. His goal is to use technology in a green way to solve and reverse the damage many of the environmental problems created by our modern carbon-dependent lifestyles have caused.

Jay is a visionary designer of industrial hybrid processes in:

Recycling systems

Waste-to-energy

Waste management

Plastics/biopolymer manufacture

New synthesis of biopolymer systems using non-food polymers

He is a specialist in the hybridisation of industrial processes and the design of industrial systems for new composite plastics and maintains several joint ventures/licensing contracts including: www.plastictech.eu; he has funded renewable energy and bio fuel programs and has experience in industrial bioengineering of algae bio processes.

Jay is a member of the Advisory Board of **OriginOil** (www.OriginOil.com) - named One of the Top 50 Bioenergy Companies by **Biofuels Digest**, **Forbes**, and **New York Times (and Wall Street Journal on July 28th)**. www.biofuelreview.com/content/view/1205/5/

In 2008, he founded the **Green Factory SA** in Brazil a joint venture with his company **M2 Baltic Investment Trust**, which raised \$50million in funding commitments from **Banif Bank** and is currently building a 2,000 acre algae farm to make biofuel from marine algae.

Future projects (for 2010) include setting up and funding new lithium ion polymer battery manufacturing using new energy technologies, generators, and high speed switching devices to create a new generation of renewable energy homes and hybrid cars.

SUEZ PROPOSAL

SUEZ PROPOSAL:

I have not included phase 2 as the figures would be even more horrendous!

The SUEZ figures for Capital Costs, Operating Costs and Gate Fees have been taken from the Billet.

Capital Costs	(£m)
Design & Construction	80.0
Contingency	5.4
Consultancy	2.0
Miscellaneous	0.1
Allowance for Inflation	6.0
Total	93.5

SUEZ PROPOSAL (cont)

Cost of borrowing Capital from Treasury & Resources Department @ 5% per annum

Per Annum	10 yrs	25 yrs
4.675	46.75	116.875

In my opinion the interest rate should not be set lower than 5% over such a long period of time. I have not compounded the interest and have basically added 5% interest per annum if the money was placed on deposit or the States had to borrow the money elsewhere.

Operating Costs	Per Annum	10yrs	25yrs
Payment to Suez	1.8	18.0	45.0
+ £11.44 per tn (45k)	0.5148	5.148	12.87

I have not allowed for inflation in the Operating Costs.

The total cost over 25 years would be **£268.245m**. If Capital & Interest payments were made annually the interest rate would reduce, but I still believe the 5% rate is too low.

THE SELF FINANCING ZERO WASTE SOLUTION

SUEZ PROPOSAL (cont)

Gate Fee	Per Annum	10yrs	25yrs
45000 tonnes			
@ £ 175.00 per tonne	7.875	78.75	196.875
40000 tonnes			
@ £ 200.00 per tonne	8.0	80.0	200.0

Again **I have not allowed for inflation in the gate fees.**

The plant has a guarantee of only 2 years from Suez, so Guernsey would be responsible for any malfunctions of the plant after that period.

The costs above do not include dismantling and disposal of the plant after its useful life.

Estimate **£**10m??

SUEZ PROPOSAL (cont)

Bottom ash of 18% of incoming waste will need to be disposed of.

45,000 tonnes = 8,100 tonnes of bottom ash per annum.

202,500 tonnes over 25 years.

(this may be able to be disposed of in Guernsey)

Fly ash of 3% of incoming waste will need to be disposed of.

45,000 tonnes = 1,350 tonnes of fly ash per annum.

33,750 tonnes over 25 years.

The fly ash would be disposed of in France at a cost of about £250 per tonne.

£337,500 per annum / £8.43m over 25 years.

JOINT VENTURE

Capital Costs

£20m

Including all design and construction of plant and building – all finance will be obtained by the Joint Venture at no cost to the States of Guernsey or the taxpayer.

Operating Costs covered by the Joint Venture – no charge to the States.

Gate Fee	Per Annum	10yrs	25yrs
45,000 tonnes			
@ £80.00 per tonne	3.6	36.00	90.00

The above gate fee will assist the payment of the capital and operating costs.

Value in sterling therefore no currency fluctuations.

Further Advantages:

No 202,500 tonnes of bottom ash or 33,750 tonnes of fly ash to be disposed of at a very high cost over the next 25 years.

Plant up and running within 1 year (2 ½ years earlier than Suez)

During that 2 ½ years:

2 ½ x 45,000 tonnes = 112,500 tonnes waste prevented from going to landfill at Mont Cuet

Gate fee saving of 112,500 tonnes x £95 = £10.68m

No health issues

Creating a new export industry for Guernsey.

Massive Savings for Guernsey!

JOINT VENTURE AND THE GUERNSEY COMMUNITY

- Joint Venture will provide a technical engineering bursary every year to one Guernsey Student to attend one of the top Universities in this field.
- Joint Venture will establish a charitable trust and make a significant donation each year to Guernsey Charities.
- Joint Venture will showcase Guernsey as a centre for leading edge recycling technologies which will bring industry representatives and Government Officials to Guernsey to view the installation.

