

# An **Alternative** **SWM Technology**

A PRESENTATION to the CRSWP  
SWMP Steering Committee



July 21, 2009

# Introduction



- Why we are here?
  - Present an **Alternative Technology** for SWM
  - Sistema Ecodeco®
- Who are we?
  - Ecodeco® Group researches, designs, constructs, and manages plants and equipment for the disposal of waste
- Who is here today?



# The presentation



A brief  
History

Our  
Technology

Our  
Projects

A Case  
Study



ecodeco<sup>®</sup>

# The presentation



A brief  
History

Our  
Technology

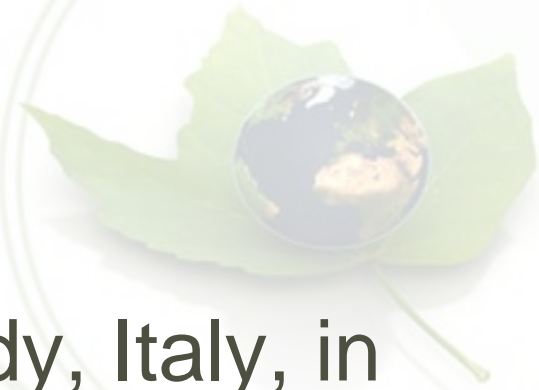
Our  
Projects

A Case  
Study



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# Our History



- Ecodeco<sup>®</sup> was born in Lombardy, Italy, in the second half of the **1970's**
  - consequence of early environmental legislation
  - goal was to assist firms in modifying their productions processes in order to obtain fewer by-products, or by-products that could then be used by others
- Founded by the Giuseppe Natta, son of world famous scientist Prof. *Giulio Natta*, winner of the Nobel Prize in Chemistry in 1963



# Our History

- In the early **1980's**, Ecodeco<sup>®</sup> implemented an efficient modular system of activities that made it possible to recover or properly dispose of almost 20 million tons of industrial waste in the last 20 years.



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# Our History

- In the **1990's**, Ecodeco<sup>®</sup> began the development of the Biocubi<sup>®</sup> Process
  - allows the elimination of the degradable component of the residual fraction of MSW and use its energy to produce, a dry, stable, easily transportable waste with a higher energy content (Amabilis<sup>®</sup>)



# Our History

Pavia, Italy

- As of today, Ecodeco<sup>®</sup> has developed a system of installations including Intelligent Transfer Stations (ITS<sup>®</sup>), Activated Bioreactors and integrated plants
  - represent a combination of proven innovative concepts, procedures, and methods
- Today, Ecodeco<sup>®</sup> is a main player in the area of waste management in Europe.



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# The presentation



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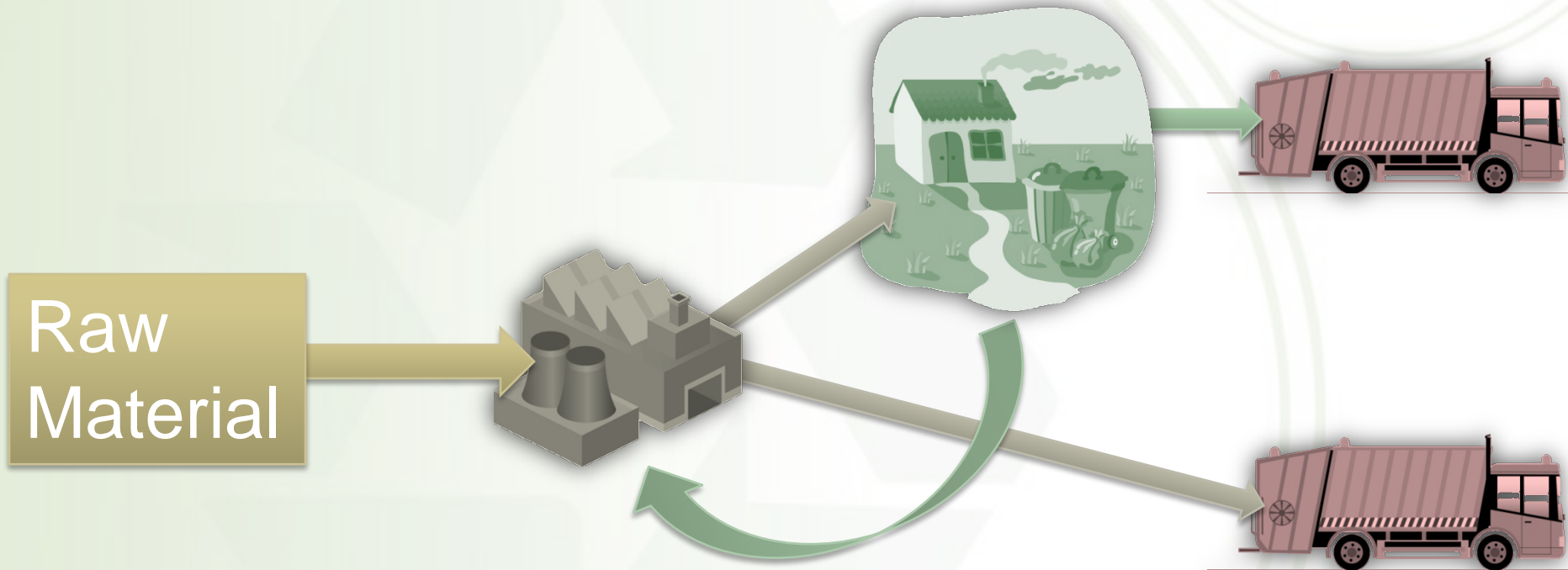
A Case  
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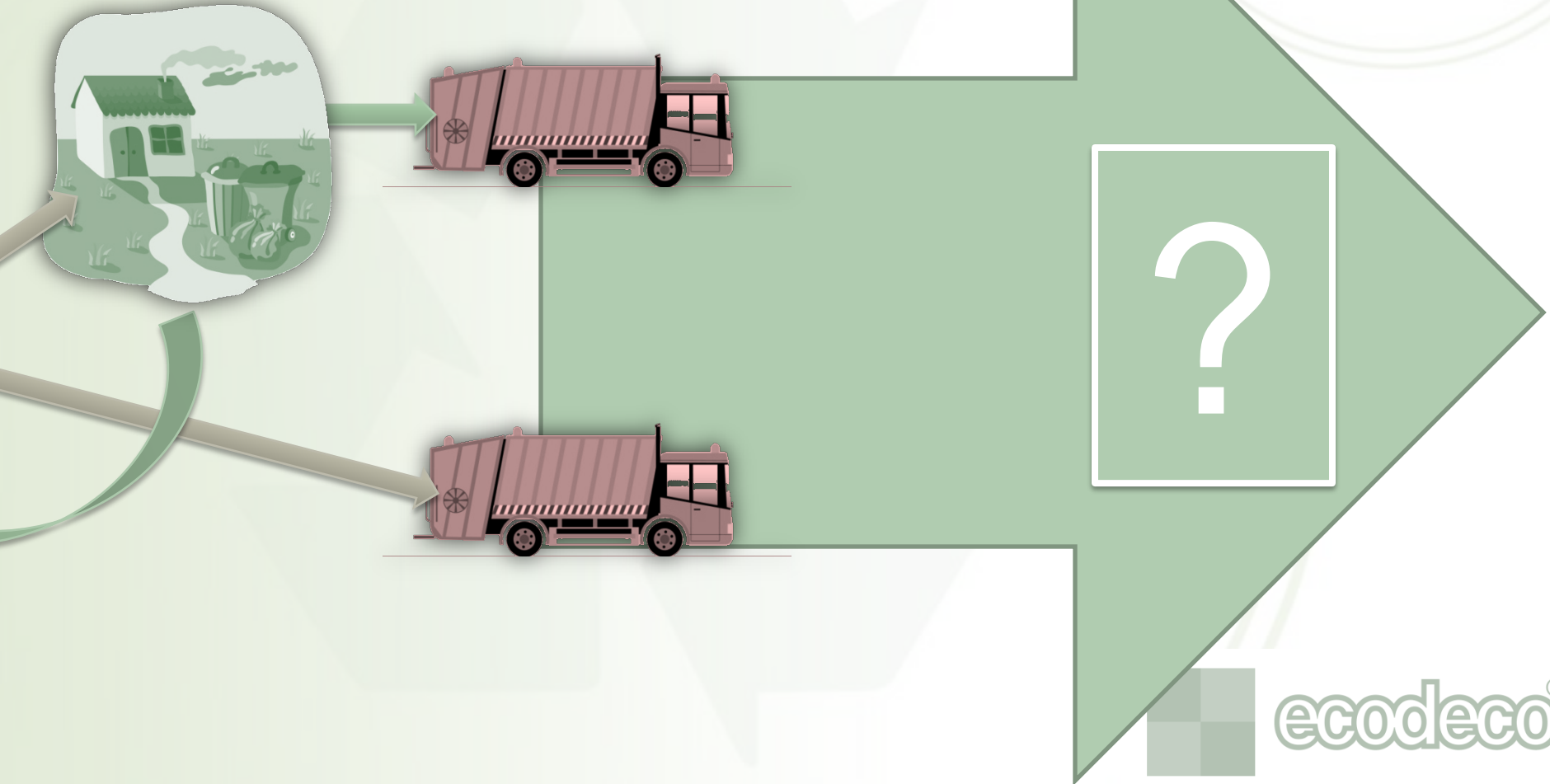
# The Technology

- The Origin of Waste



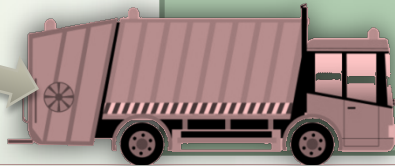
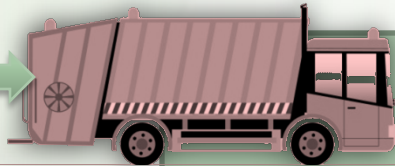
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- The Origin of Waste



# The Technology

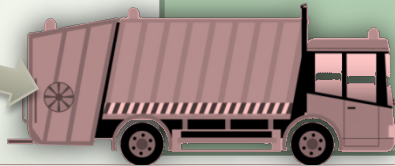
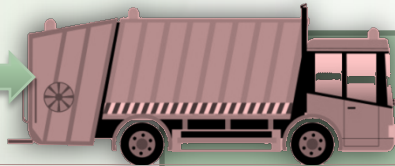
- The Origin of Waste



Improperly  
dispose of  
the waste

# The Technology

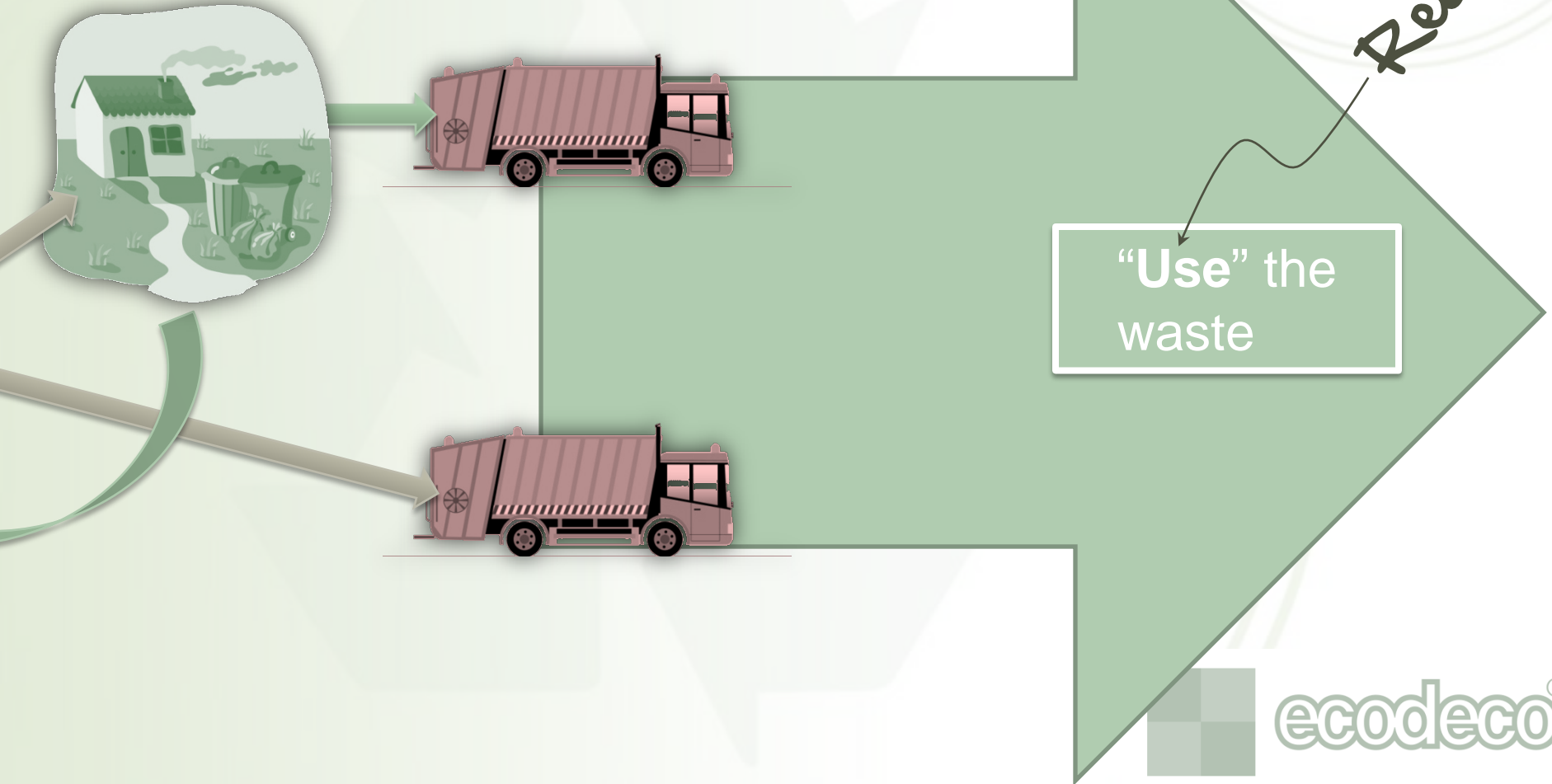
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“Properly”  
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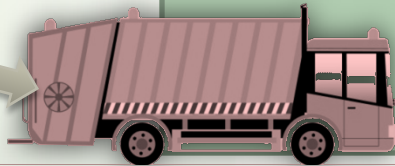
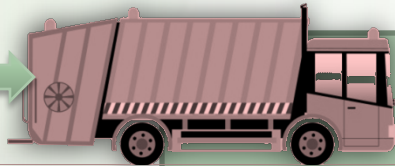
# The Technology

- The Origin of Waste



# The Technology

- The Origin of Waste



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or other SWM Processes

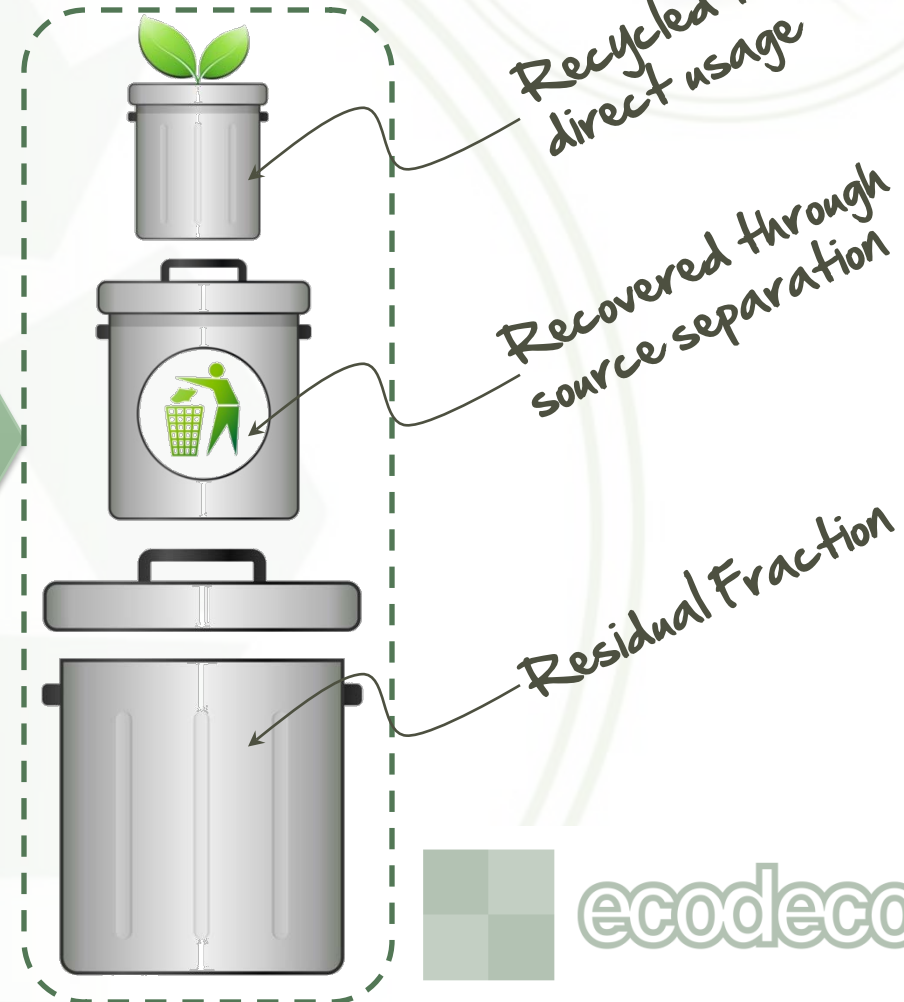
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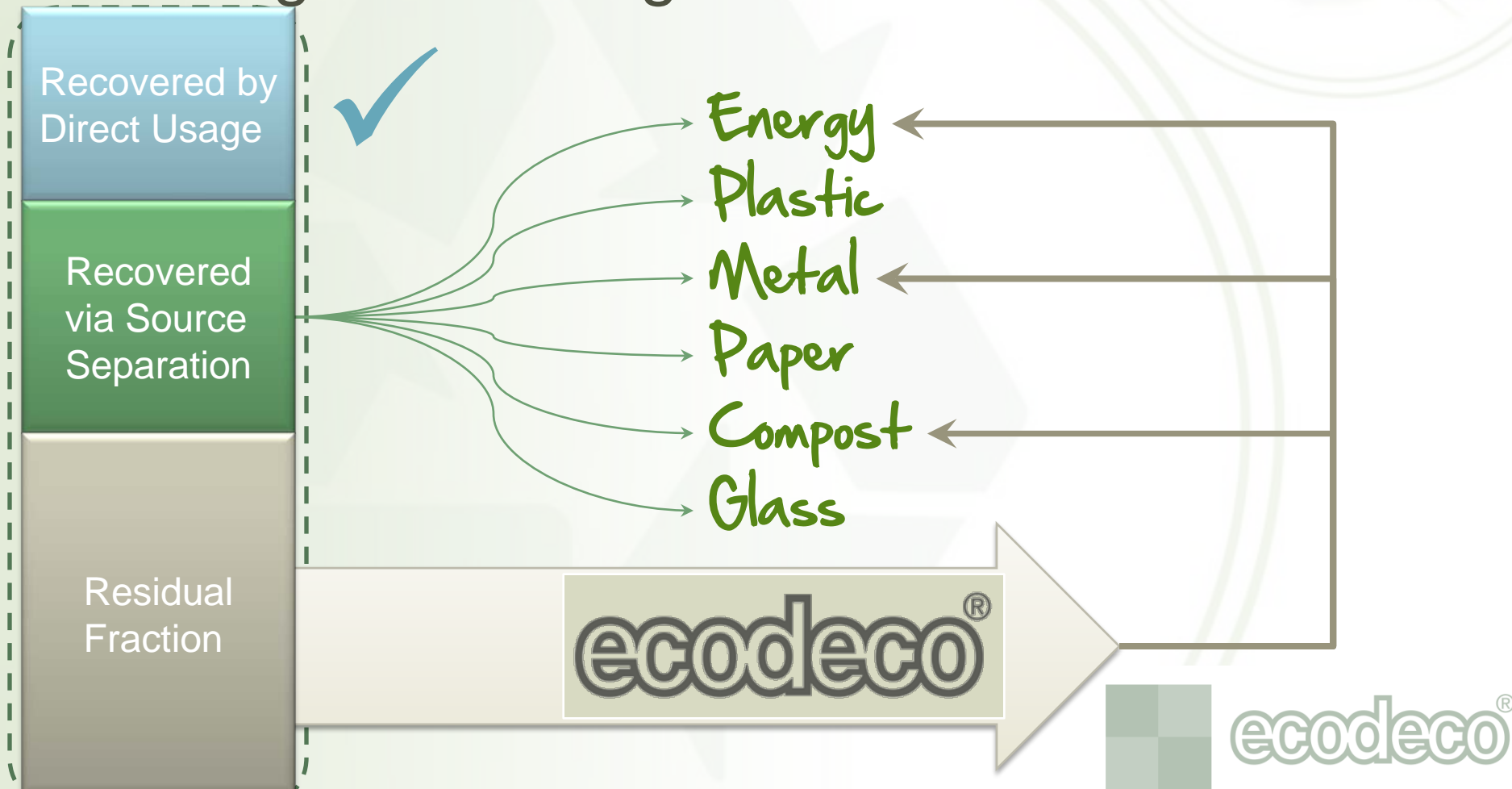
# The Technology

- Using/Recovering the Waste



# The Technology

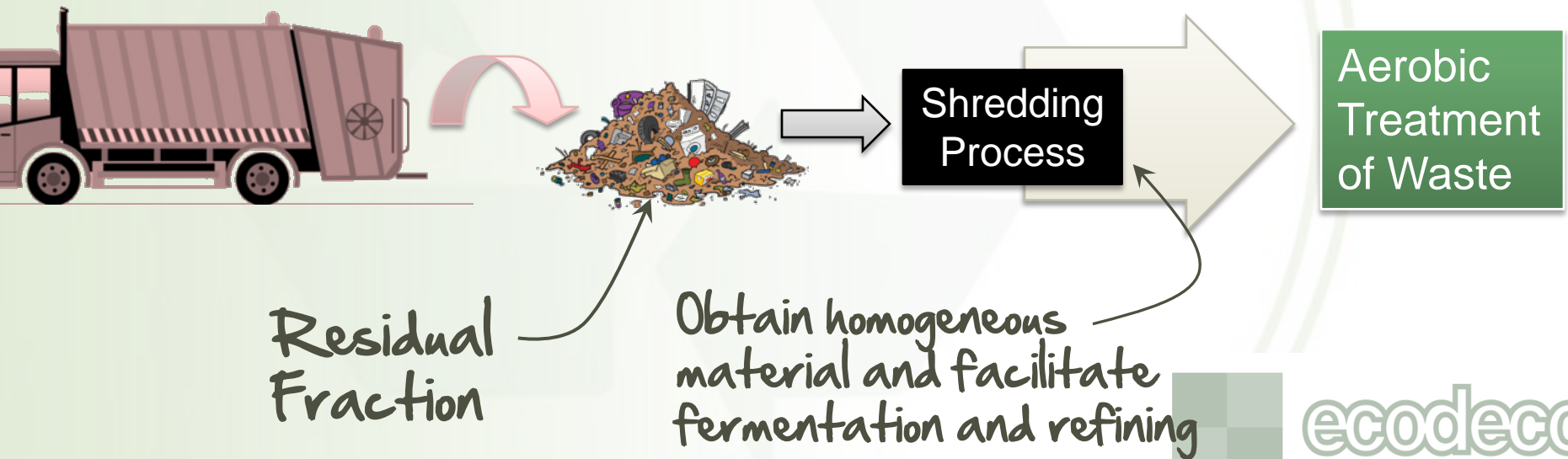
- Using/Recovering the Waste



# The Technology

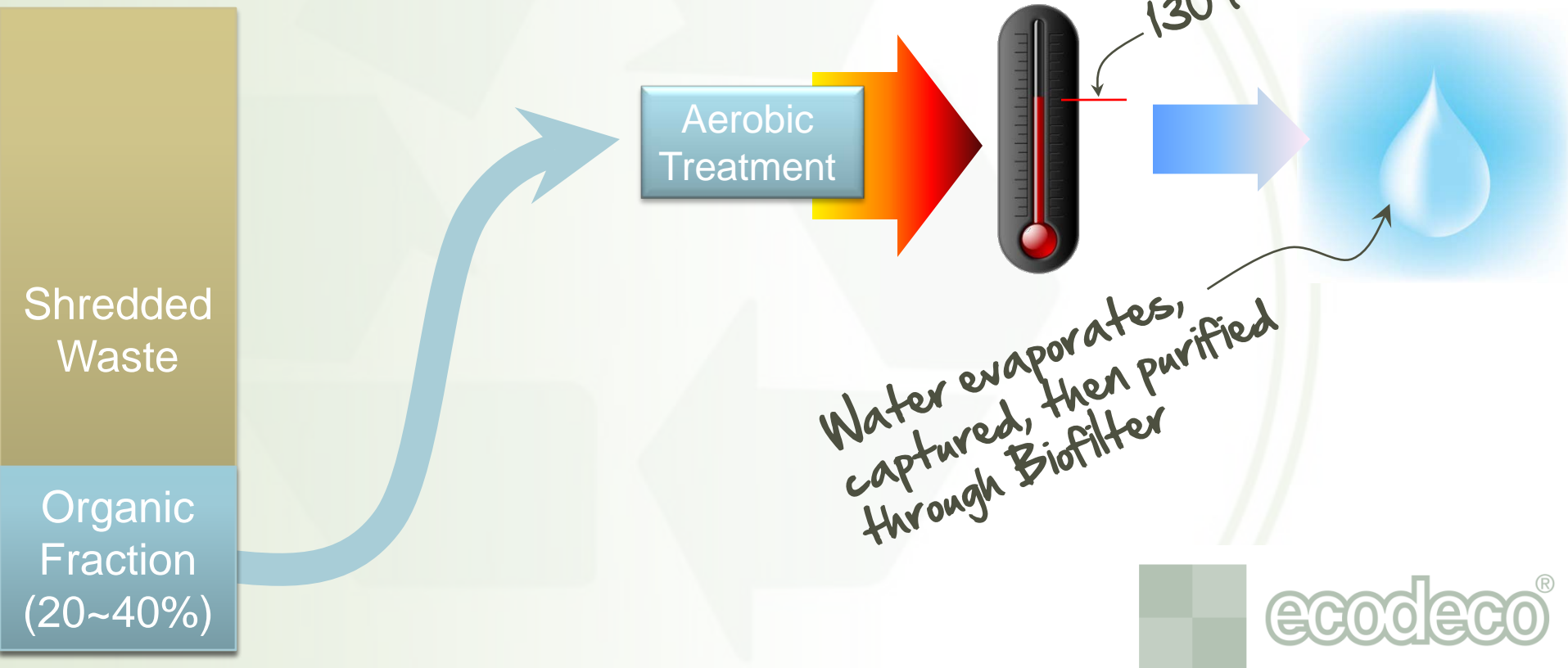


- The Recovery Process - BIOCUBI<sup>®</sup> Process
  - The fermentable organics in the waste are used for drying the Residual Fraction of Municipal Waste Through **Aerobic Digestion**



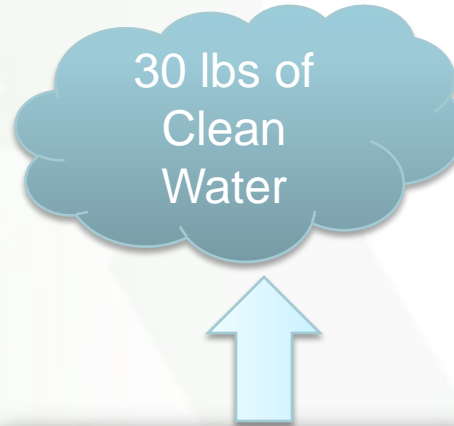
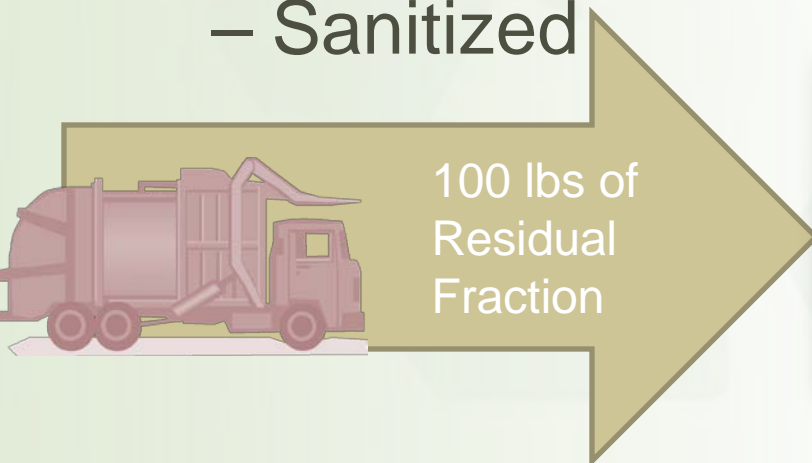
# The Technology

- The Aerobic Treatment of Waste
  - Bio-drying by controlled ventilation



# The Technology

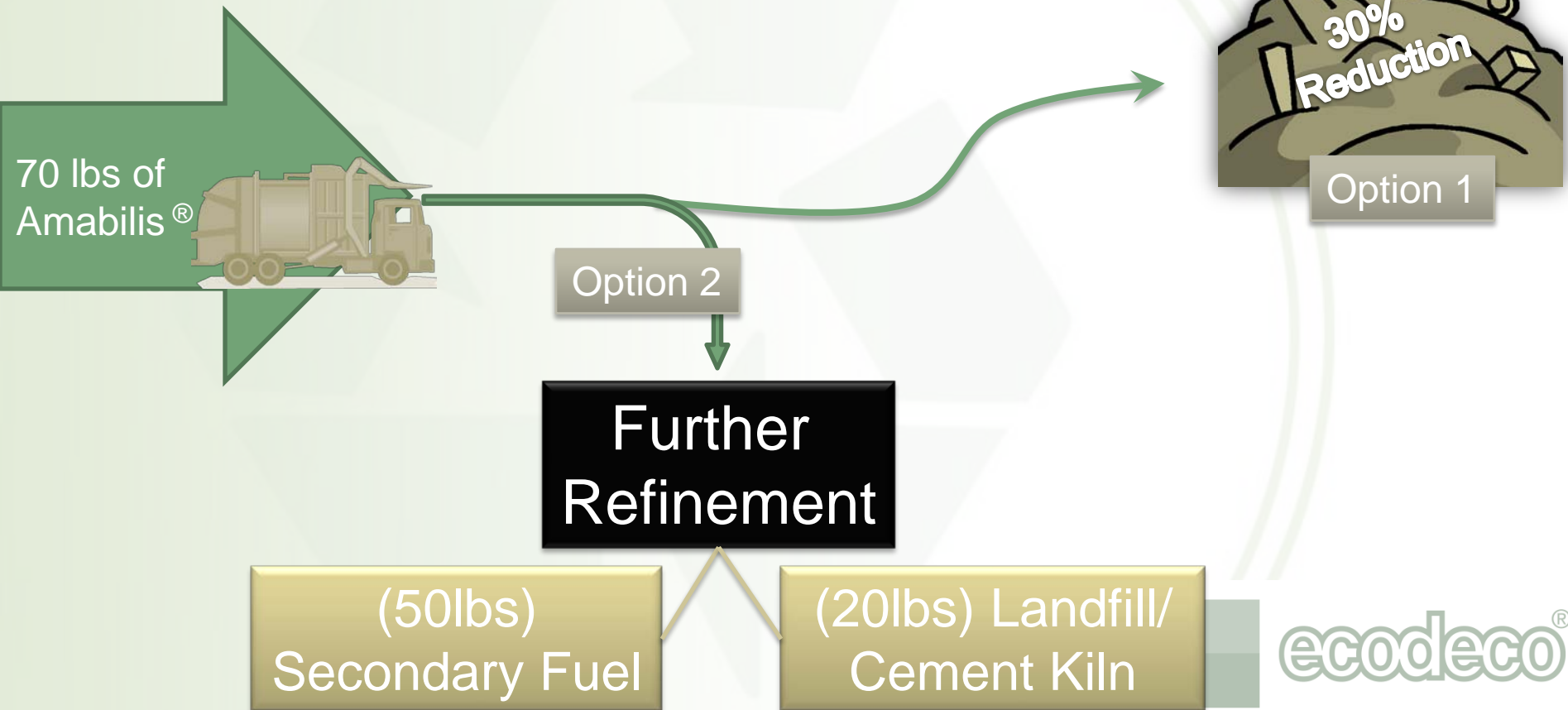
- The Material Obtained is the **Amabilis**®
  - Odorless
  - Dry
  - Clean
  - Stabilized
  - Sanitized





# The Technology

- What happens to the **Amabilis**®



# The Technology

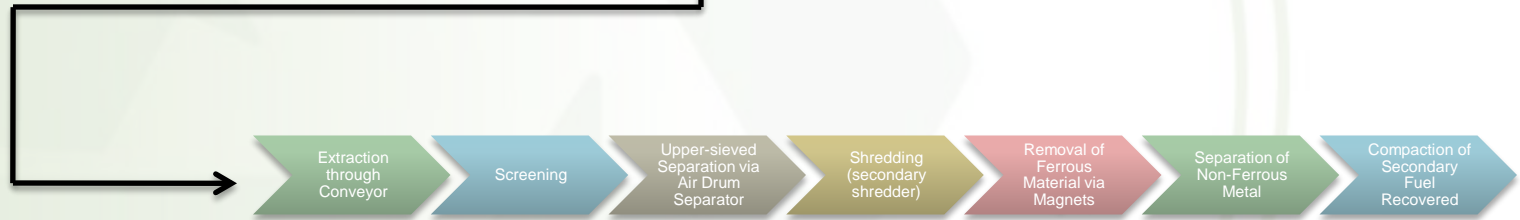
- What happens to the **Amabilis**®

*To Recover:*

- Secondary Fuel ✓
- Ferrrous Material
- Non-Ferrrous Metals
- Heavy plastic and other inert materials

Further Refinement

Mechanical Separation



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# The Technology



- **The Advantages**

- Technology is proven and reasonably spread in Europe
  - Compared to Thermal Gasification
- Relatively economical
  - Compared to mass burning and mechanical processing of waste
- Requires relatively less capital
  - Compared to mass burning



# The Technology



- **The Advantages (Continued)**
  - Consistent with your SWMP objectives
  - Private sector interest already generated (Buzzi Unicem USA)
  - Provides multiple solutions
  - Possibility for future expansion, upgrade and integration with other technologies
  - **Lower CO<sub>2</sub> emissions** than coal when used as secondary fuel



# The Technology

- Implementation



Facility  
Size

**7.5 Acres**



Lot Size

**20 Acres**



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# The Technology

- Implementation (Continued)



Estimated  
Capital  
Cost

**\$64 mm or  
\$14/ton/year**



Estimated  
Cost of  
Operation

**\$38.0/ton/year**



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# The Technology

- Implementation (Continued)



Design and  
Construction

36 Months



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# The presentation



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# Our Projects

- In Italy



Purpose	Bio-drying
Incoming waste	Municipal Solid Waste (Household and similar Commercial); Organic Fraction
Capacity	120,000 t / year of Municipal Waste (Household and similar Commercial) 4,600 t / year of Organic Fraction
Area being served	Province of Biella
Beginning of activities	May 2003
Management	A.S.R.A.B.S.p.A. for the CO.S.R.A.B. (Consortium of Municipalities)



# Our Projects

- In Italy



Purpose	Bio-drying
Incoming waste	Municipal Solid Waste (Household and similar Commercial)
Capacity	80,000 t/year
Area being served	Province of Pavia
Beginning of activities	February 1996
Management	Fertilvita s.r.l.

# Our Projects

- In Italy



Purpose	Bio-drying and refinement section for energy recovery
Incoming waste	Municipal Solid Waste (Household and similar Commercial)
Capacity	75,000 t / year
Area being served	Province of Lodi
Beginning of activities	May 2000
Management	Bellisolina S.r.l.



# Our Projects

- In the United Kingdom



**Frog Island, UK**

Purpose	Bio-drying and refinement section for energy recovery
Incoming waste	Municipal Solid Waste
Capacity	180,000 t / year
Area being served	East London
Beginning of activities	April 2006
Management	Shanks Group plc - in collaboration with Ecodeco®



# Our Projects

- In the United Kingdom



**Dumfries & Galloway  
(Scotland)**

Purpose	Bio-drying and refinement section for energy recovery
Incoming waste	Municipal Solid Waste
Capacity	65,000 t / year
Area being served	Dumfries & Galloway
Beginning of activities	August 2006
Management	Shanks Group plc - in collaboration with Ecodeco®



# Our Projects

- In Spain



Purpose	Bio-drying; production of High-Quality Compost
Incoming waste	Municipal Solid Waste; Organic Fraction
Capacity	70,000 t / year of Municipal Solid Waste 33,000 t / year of Organic Fraction
Area being served	Cervera del Maestre
Beginning of activities	2012 (Expected)
Management	Teconma S.A. and Azahar S.A. - Ecodeco®



**THANK YOU!**