“Waste as a manufacturing feedstock”
Part of every day’s business

Globe EU, 11th October 2016

Bernard MATHIEU, Head Sustainable Development
LafargeHolcim – who we are

Global footprint

2,500 operating sites

29.4 billion CHF net sales

100,000 employees

Listed on SIX and Euronext

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LafargeHolcim – what we do

Cement

Aggregates

Ready-mix concrete

Other construction materials

All figures on Pro Forma basis, for the year ended December 31, 2014.

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Our approach to alternatives resources

By 2030: use of 100 Mio ton/y waste-derived resources
Our waste treatment business line – Geocycle

- Over 60 countries on all continents
- Over 2,000 employees
- Over 85 pre-treatment facilities
- Over 180 co-processing facilities
- 10,000 customers worldwide

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Solutions we offer

1. Assessment & consultation
2. Laboratory testing
3. Collection & transportation
4. Tailored services
5. Pre-processing
6. Co-processing in cement kilns
Industrial Symbiosis

**Source of waste**
- Municipalities
- Food & beverage
- Garment manufacturing
- Paints & solvent production
- Pharmaceuticals
- Chemicals
- Oil Industry
- Automotive Industry
- Power generation
- Shoe manufacturing
- Steel & other metal manufacturing
- Agriculture
- Utilities

**Types of waste**
- Sorted municipal waste
- Residual waste
  - Packaging
  - Plastic and textiles
  - Consumer goods
  - Expired food
  - Expired chemicals, pharmaceuticals and cosmetics
- Hydrocarbon residues and waste oils
- Catalysts and reagents
- Tyres & resins
- Polluted soils
- Animal meals
- Solvents, emulsions and detergents
- Sludges (paint, oil, sewage)
Geocycle solutions: examples

L’Oreal Production Waste
Mexico

Floating waste
3 Gorges Dam
China

Municipal Solid Waste
Romania

Global Partnership with Unilever

In-plant waste treatment services

Biomass and plastic waste

Modular waste sorting projects

Zero waste to landfill
0 residues

14 million tons of waste treated by Geocycle worldwide in 2015

14 million tons of CO₂ prevented in 2015

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The case of co-processing

Energy recovery AND recycling of mineral components

“Co-processing uses alternative fuels and alternative raw materials in a combined process that includes the use of waste-derived material and can reduce CO2 emissions, energy costs and waste.”
(COM MEMO 11/43, 26 January 2011)

• Simultaneous energy recovery and recycling of mineral waste
• Reduction of GHG emissions (in cement manufacturing process and from alternative waste management processes)
• A waste solution that is higher-up the waste hierarchy
• Available infrastructure & fully regulated / standardised process
• EU potential for this solution: 100% increase!!!
Circular Economy: recycled aggregates

- 3 Billion Tons of C&DM generated globally every year.
- >40 Billion Tons of aggregates consumed every year
- C&DM often disposed of OR used in low value applications
- Appropriate waste regulations are required
- Proximity to urban markets

Multiply by 4
the total amount of recycled aggregates towards 2030

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Circular Economy by Gennevilliers (Paris)

1. Inert C&DM
2. Recycling site Gennevilliers
3. Quarry
4. AGG Customer
5. Cement Plant

Recyclable ~40%
Non-recyclable ~60%
Non-recyclable Used for Quarry Rehab.
Primary AGG

Contaminated soils
Recycled concrete fines

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• Not a theoretical concept, but a real business model
• Key lever to reduce our CO$_2$ emissions
• Our ambitions:
  • Increase substitution by more than 25% in Europe
  • Reach the European level in all regions
• Sustainability, quality, reliability
Back-up slides
The case of co-processing

Alternative fuels

BREAKDOWN OF ALTERNATIVE FOSSIL FUELS, EU28

BREAKDOWN OF MAIN FUEL TYPES, EU28
Co-processing leads to GHG savings

Emissions
- GHG + GHG

Resources
- Waste
- Waste Incinerator

Products
- Res. waste & energy
- Cement

Waste used as fuel in cement manufacturing
- Waste
- Fossil Fuels
- Cement plant
- Cement

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