City of Oslo
Waste to Energy Agency

Cycle-Based Waste Management in Oslo
IEA Task 37 in Oslo

19.04. 2012
Marketing Director Øystein Ihler
Waste-to-Energy Agency
City of Oslo

EGE

Political objectives in Oslo

- 50 % reduction in emissions of greenhouse gases by 2030.
- Plan for residual waste treatment;
  - 50 % recovery of materials in by 2014.
  - Source sorting of food waste and plastic packaging - 2012.
- Increased use of renewable energy:
  - Basis for increased use of district heating, 1 - 2 TWh.
  - Change from fossil fuels to renewable fuels for the district heating system.
  - Public city transport on renewable fuel by 2020
    - 1000 buses
    - 3000 taxies

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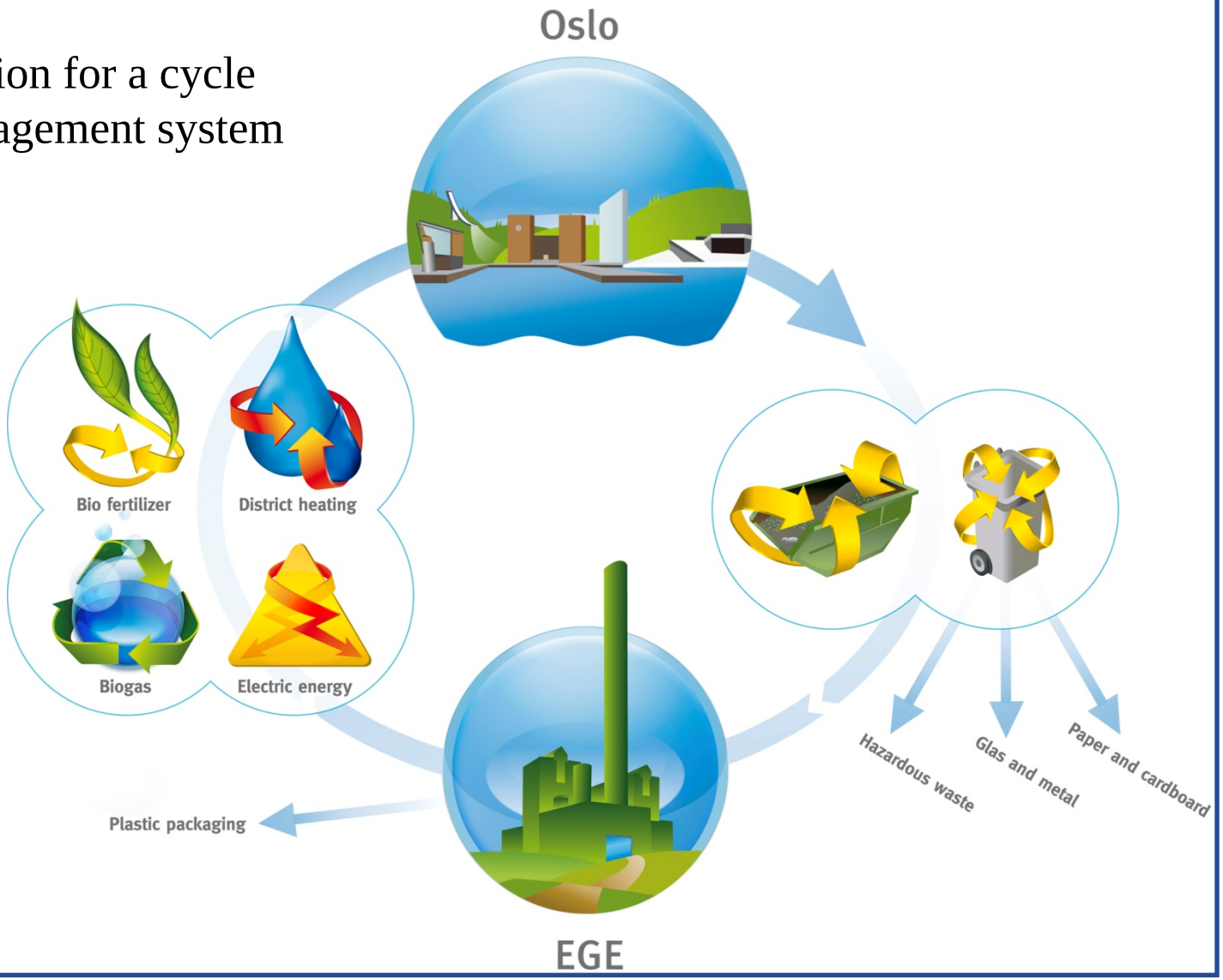
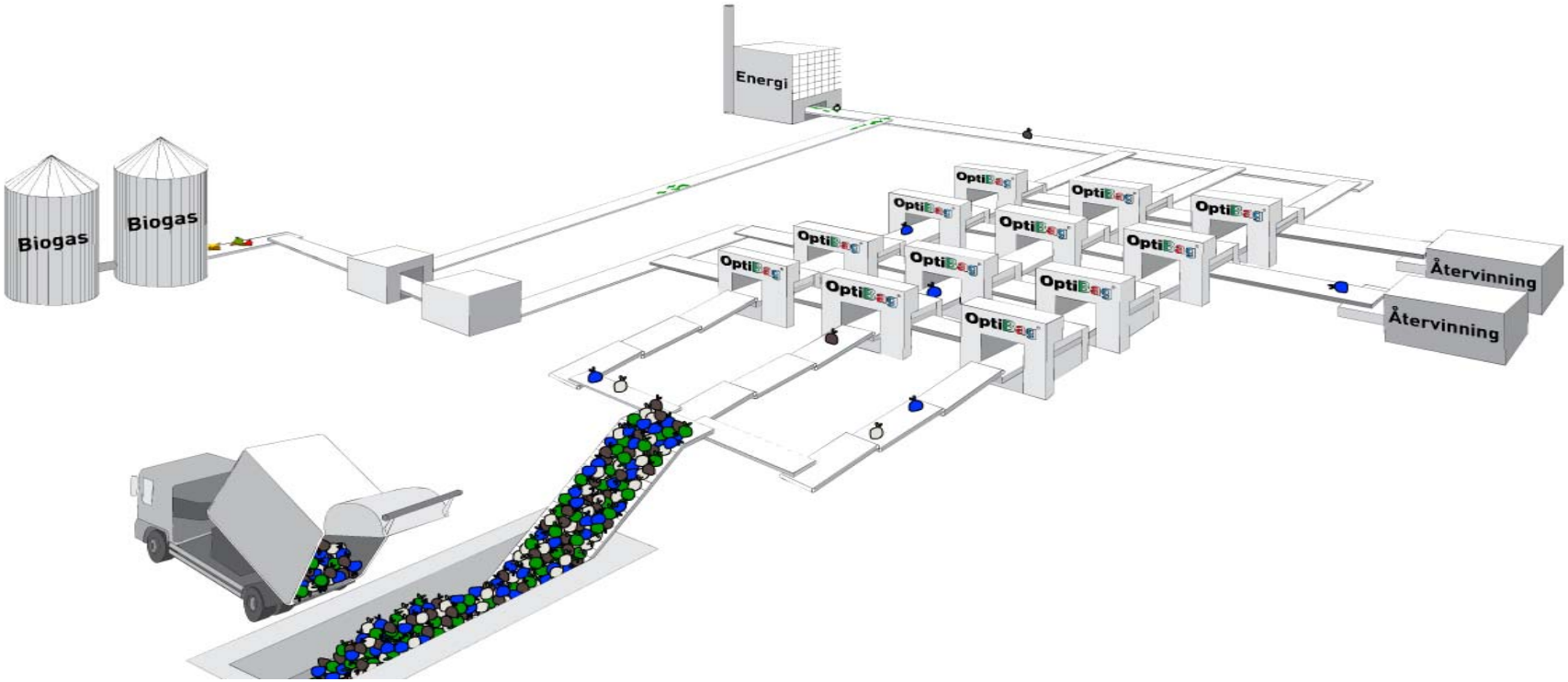
A complete solution for a cycle based waste management system in Oslo



Source sorting in coloured plastic bags – optical sorting



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Romerike biogas plant

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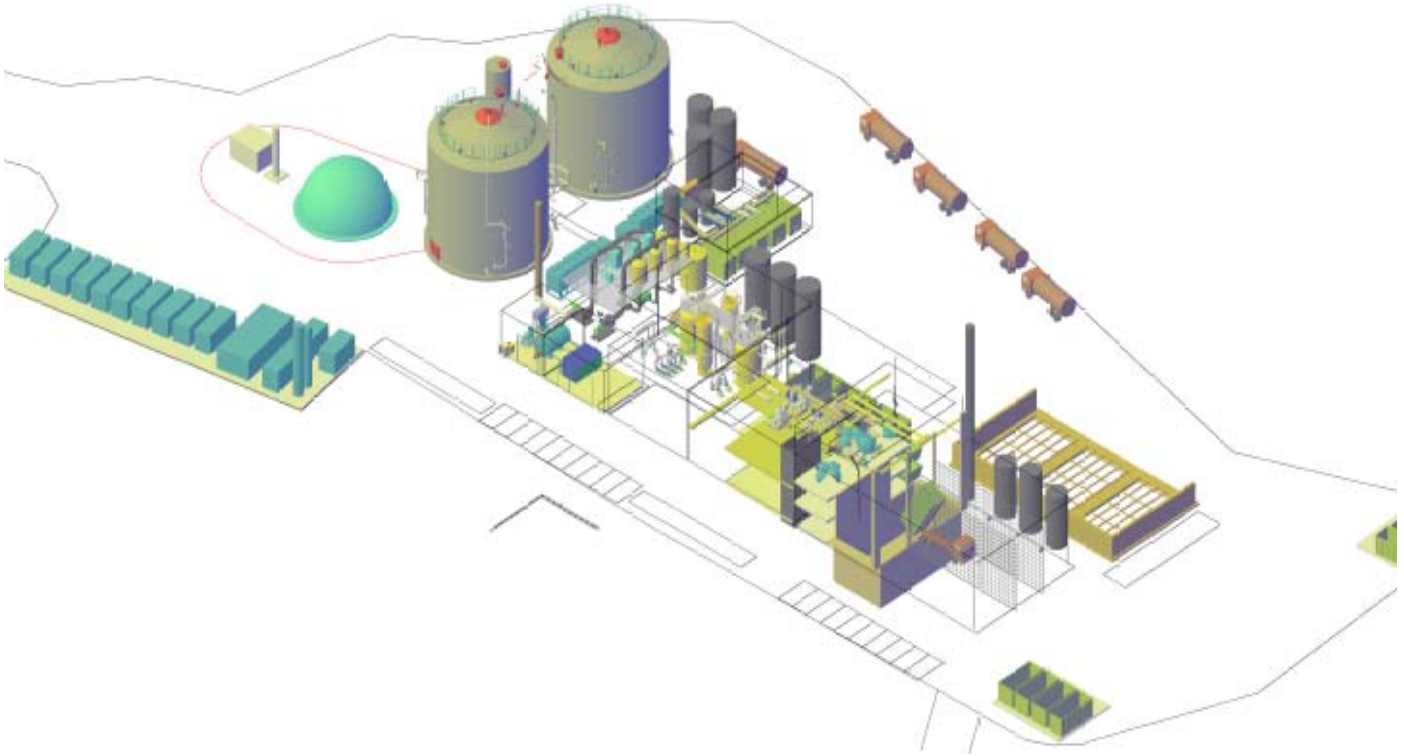
Romerike Biogas Plant, Esval, Nes

Products:
Liquified Biogas (LBG)
Bio-fertilizer (Liquid & Solid)



The plant is designed and delivered by Cambi AS
First waste will arrive: 20.12.2012.

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From Food Waste to Biogas and Biofertilizer

Biogas Plant

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Food waste + sewage = biogas

REN Renovasjonsetaten

Vann- og avløpsetaten

EGE Energigjenvinningsetaten

Biogas Production – Key Figures

Agency City of Oslo	Amount upgraded Biogas	Gas Volume - number of buses	Sales and Distribution
VAV Sewage	CBG -2.2 mill Nm^3/a (01.01.2010)	65	AGA AS, Linde group
EGE Food Waste	LBG - 4,5 mill Nm^3/a (01.04.2013)	135	AGA AS, Linde group

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Biofertilizer production – key figures

Total amount:

- Liquid biofertilizer
  - 90 000 m^3 (dm 4,5 %)
  - Fertilizer for 100 medium-sized farms.
- Dewatered biofertilizer
  - 15 000 m^3 dry bio-residue (dm 25 %)
  - 12 000 m^3 bio-concentrate (dm 15 %)

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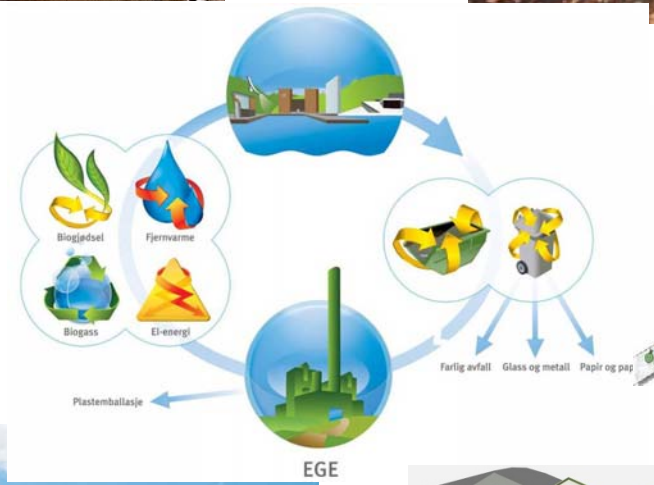
Biogjødsel
Fjernvarme
Biogass
El-energi
Farlig avfall
Glass og metall
Papir og pap
Plastemballasje
EGE