SAHYOG CONFERENCE AND BROKERAGE EVENT ON BIO-ECONOMY

New Delhi, 3 - 4 February 2014

BIOBASED ECONOMY INTEGRATED IN WASTE MANAGEMENT

www.dutchwastemanagement.com

dutchwastemanagement.blogspot.nl

Dutch Waste Management

BBE integrated in WM

- Dutch Waste Management - platform
- Waste regulation India / quick scan
- Waste treatment EU-31 in 2011
- BBE integrated in Waste Management
- Organics
  - Monitoring / sorting / logistics
  - Proces: Anaerobic digestion / RDF
- Planning process and projects 2014-2020

Dutch Waste Management

SAHYOG CONFERENCE AND BROKERAGE EVENT ON BIO-ECONOMY

European Commission

New Delhi, 3 - 4 February 2014

DUTCH WASTE MANAGEMENT BOARD, ROTTERDAM, THE NETHERLANDS

Mr. Peet De Bruijn – Waste Management & Head of DWM Group

Mr. Igor Savelkouls – Financials, Project Auditing

Mr. Nico Mensing – Waste Infrastructure, Separation & Logistics

Mr. Carel Jongbloed – International Marketing & Aquisitions

Mr. Roelof Zomer – International Contracting & Legal expert in Public-Private Partnerships

Dutch Waste Management

DWM focuses on high integrity consulting & support of medium to large projects in the waste management and Biomass fields.

We draw our expertise from field seasoned engineers and practitioners who know what works and know what is new in the various fields of technology.

SAHYOG CONFERENCE AND BROKERAGE EVENT ON BIO-ECONOMY

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ENEA teri

CREM
- Sustainable Disposal
- Waste Evaluation Processes
- Separation and Sorting
- Waste Useage Scenarios

MERAPEAK
- Multi-Utility Regional Waste Management
- Resuse of Waste Materials

KORTLAND
- Hazardous Wastes
- Waste disposal & recycling

AMMERLAAN
- Green Innovation
- Greenhouses

POLS
- Hydrology Studies
- Eco Projects

DE MUL
- Pure Blue Water
- Industry, Shipping & Local Government Water Installations

IMC
- Waste & Energy Subsidies Financing

Mensing
- Project intensivation
- Wastes Separation

WWM Dutch Waste Management

STEINNERO
- Waste to Energy Projects
- Large Equipment Installations
- Property Management

DE BRUIJN
- Biomass Production
- Biofuels & Composting
- Wastes Useage Evaluation
- Wastes Management
- Waste to Energy

LAARAKKER
- Biofuels
- Anarobic Digestion
- Electricity Production
- Green Gasses & CO2

Universitiy of DELFT
- Construction, Environmental & Energy Technology

Municipal Solid Waste

- 2000 Min. Environment & Forests publiced Rules, demanding Prevention, Re-use, Recycling and Energy from Waste
- 2012 Min. New and Renewable Energy 70 Mt/y after recycling informal sector
- Forecast 100 Mt/y Fastest growing waste generation *(Nature)*
- Expensives Rs.500-1500/t ($10 to $32/t)

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Quick Scan Projects

- You Tube: several projects (ex. E-waste, tyres, iron)
- Gazipur – Waste Management Plant (35% RDF, 20% inert, 45% organic)
- Malumichampatty/14 village panchayats in district
  - State agriculture minister: cooperation public, local bodies and volunteers
  - Chief minister: Rs100 crore would be allotted for the implementation of the scheme across the state

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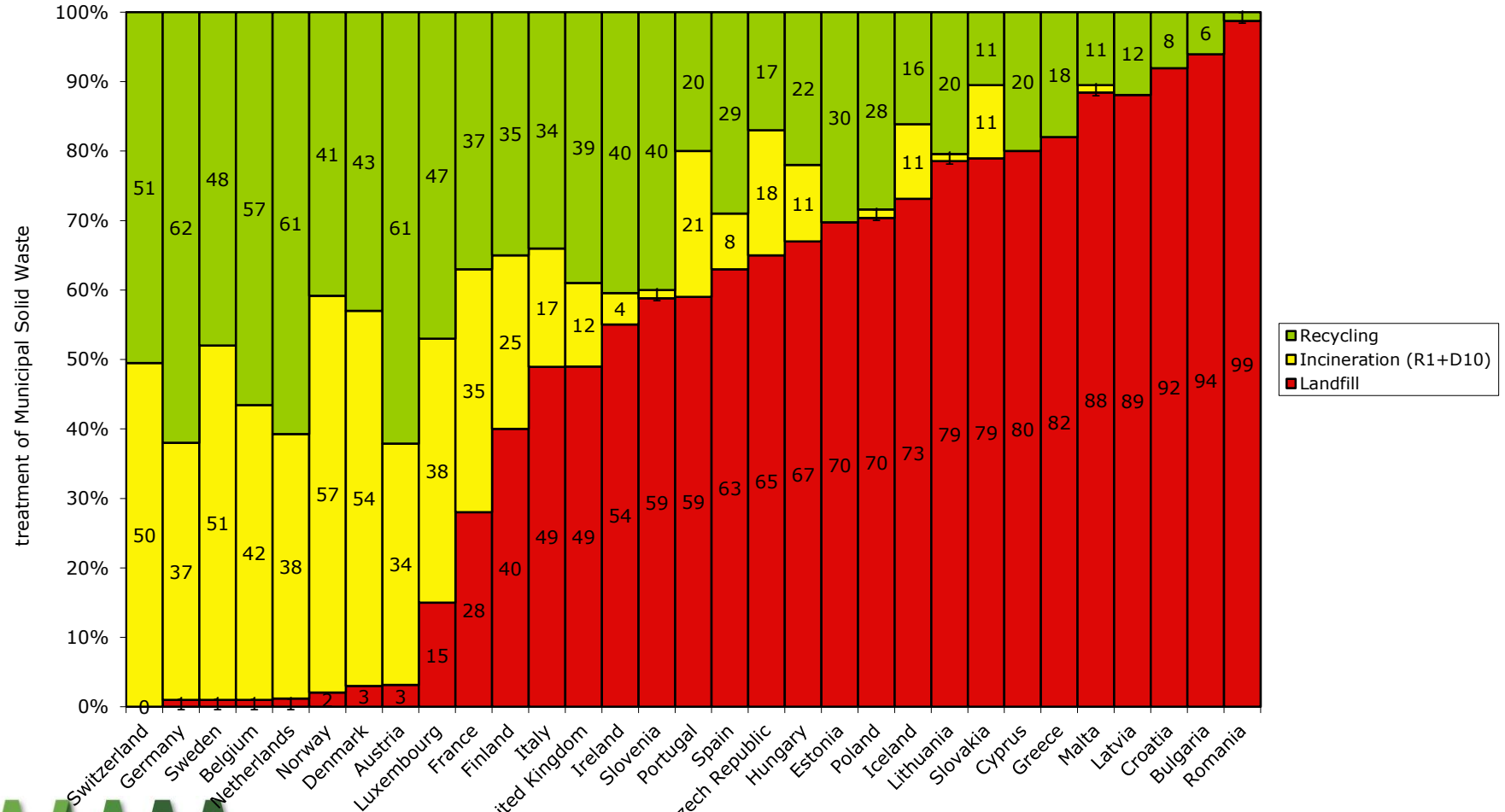
EU-31 (2011)



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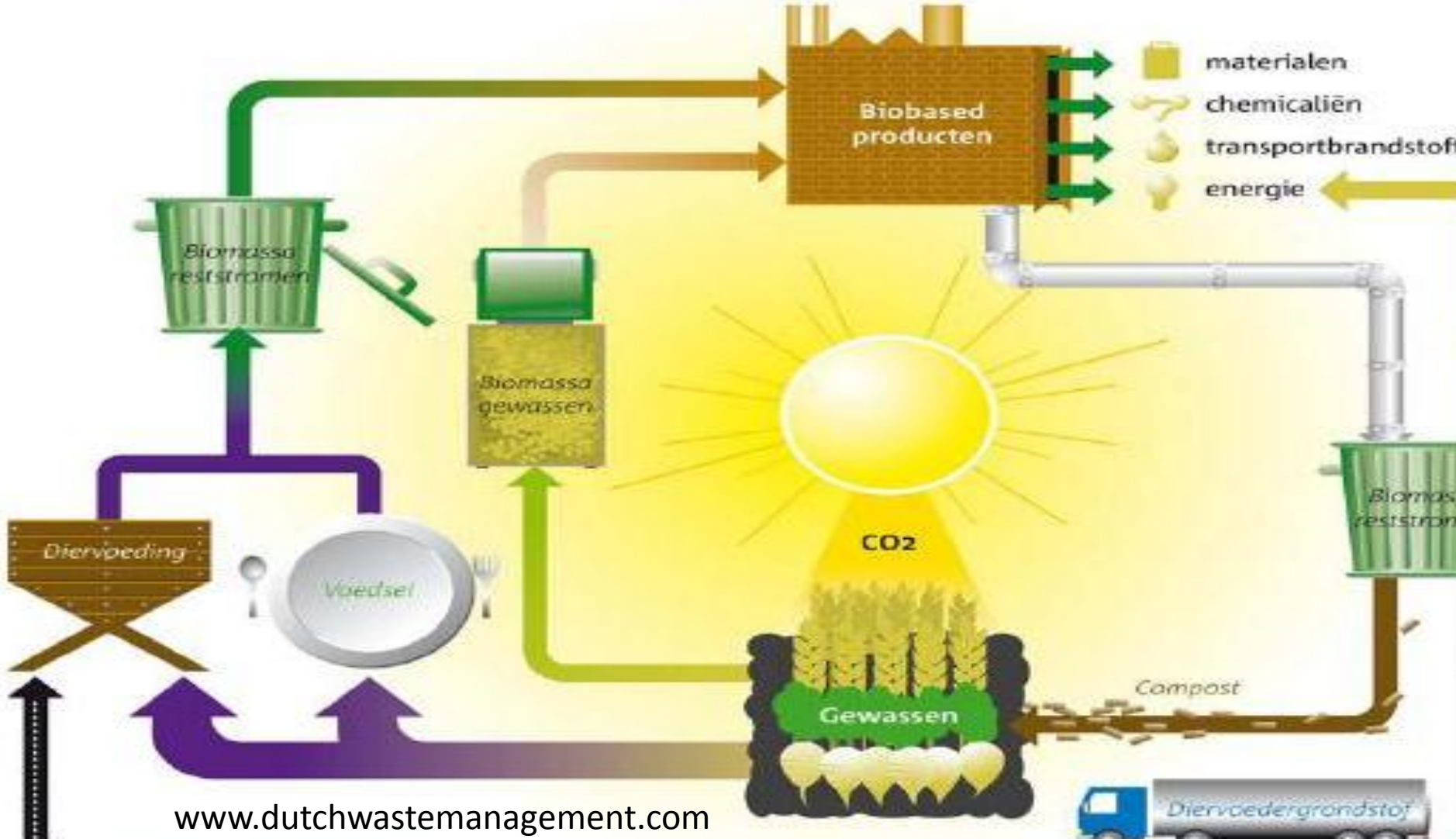
'De keten sluiten'

BBE – 1. Energy & Food

Dutch Waste M



"BioBased Economy integrated in Waste Management"

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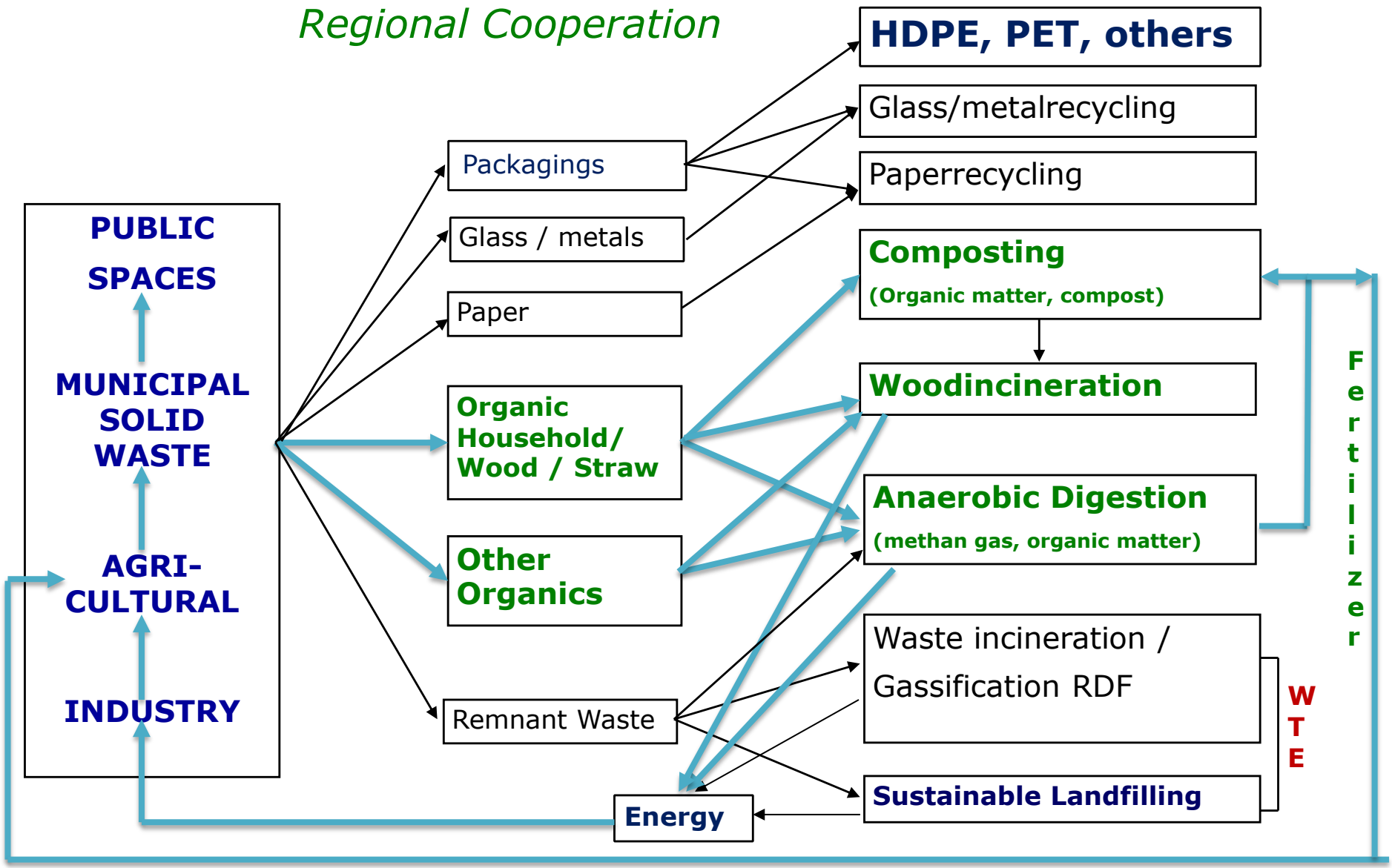
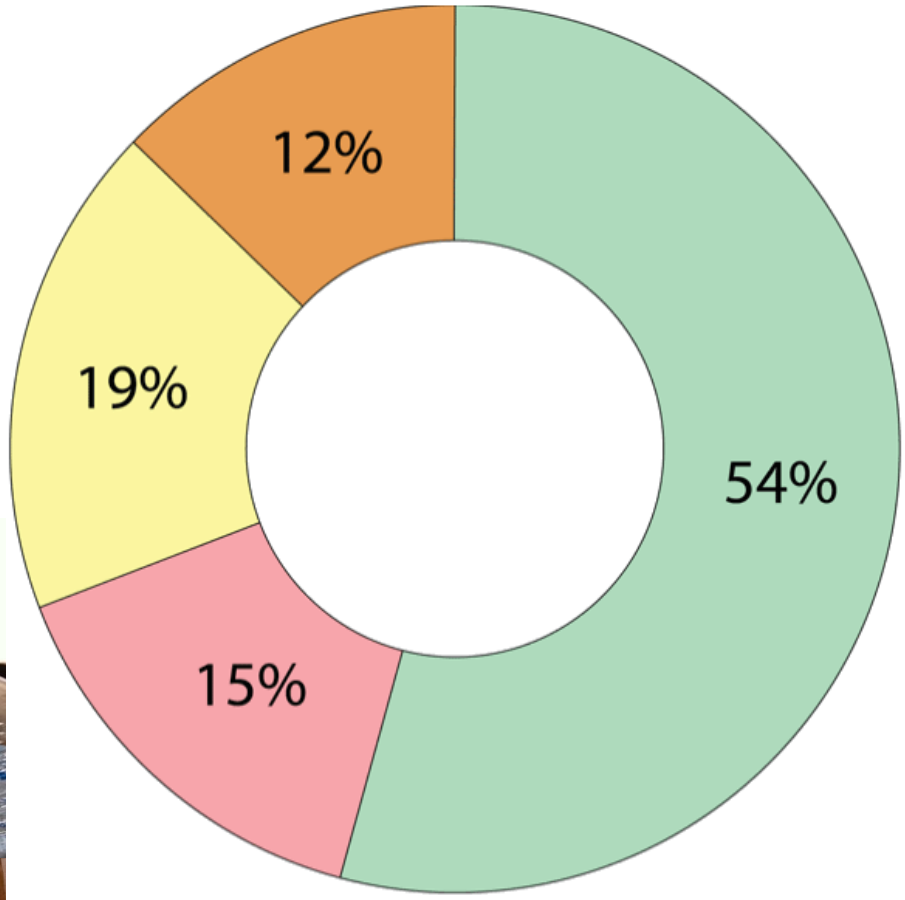


" Seperation Tests / Monitoring"



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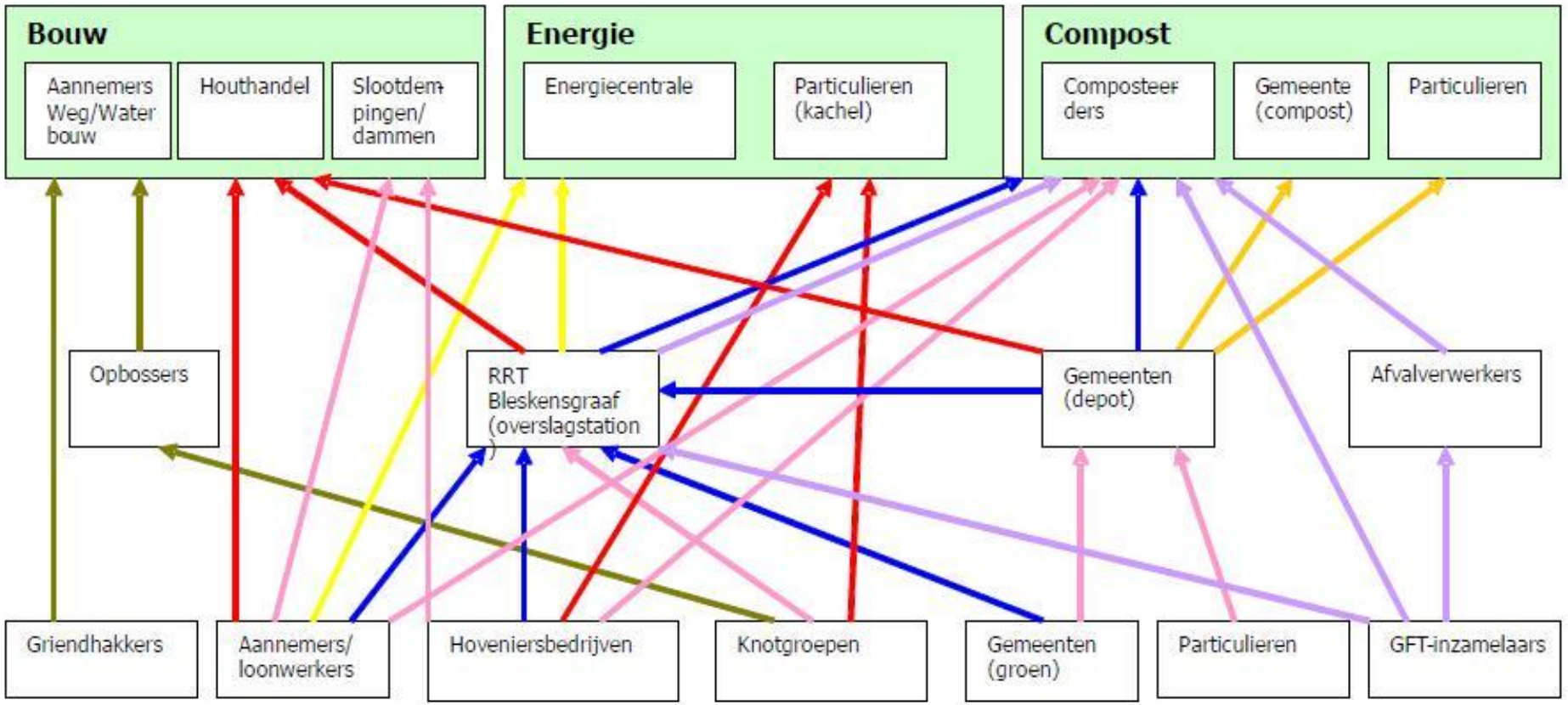
Logistics



guur 3: *Schematische weergave van de huidige biomassastructuur.*

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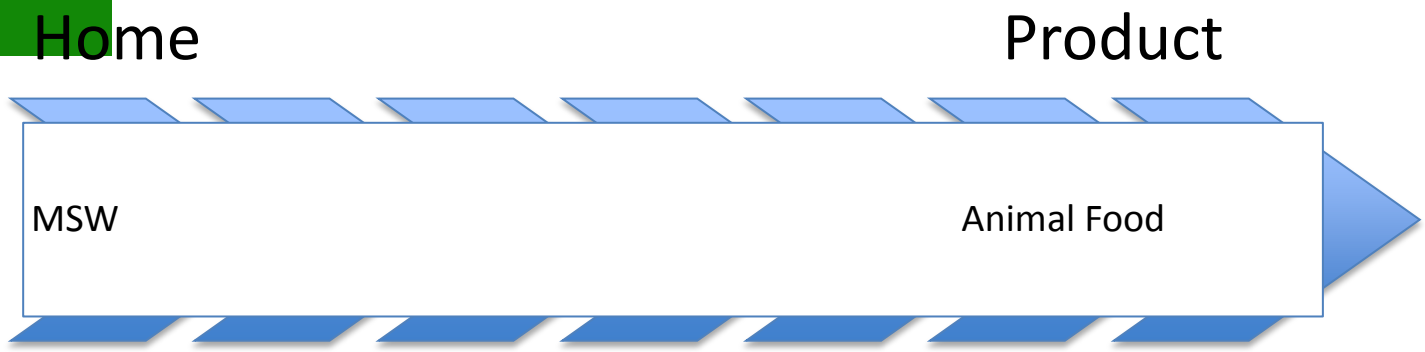
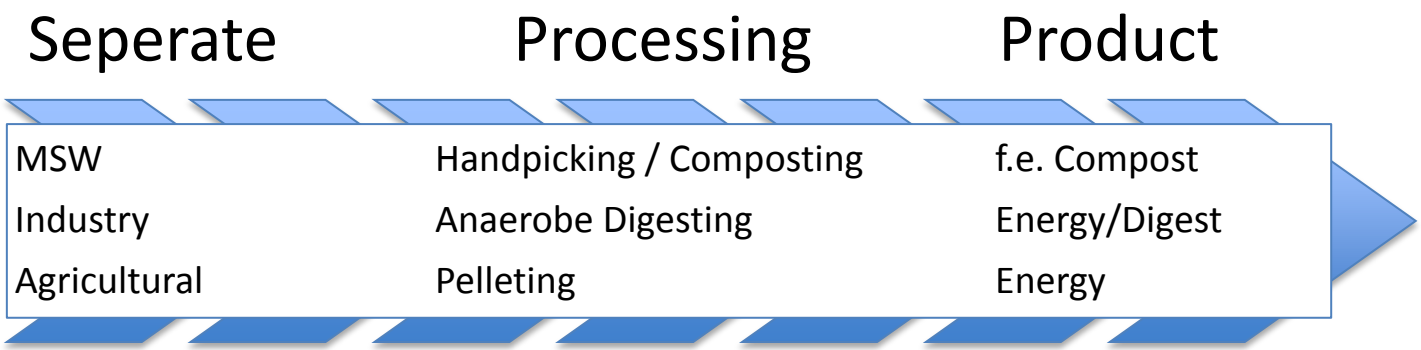
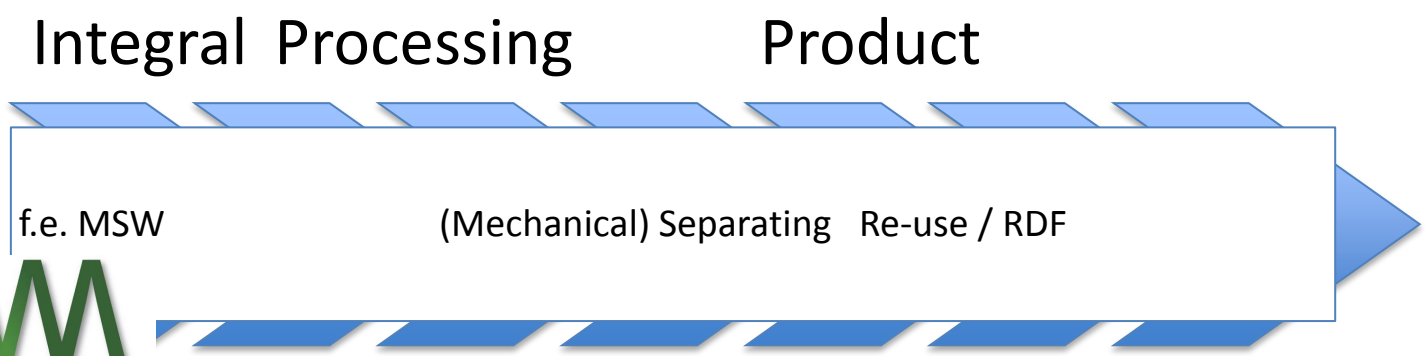
Organic Chains







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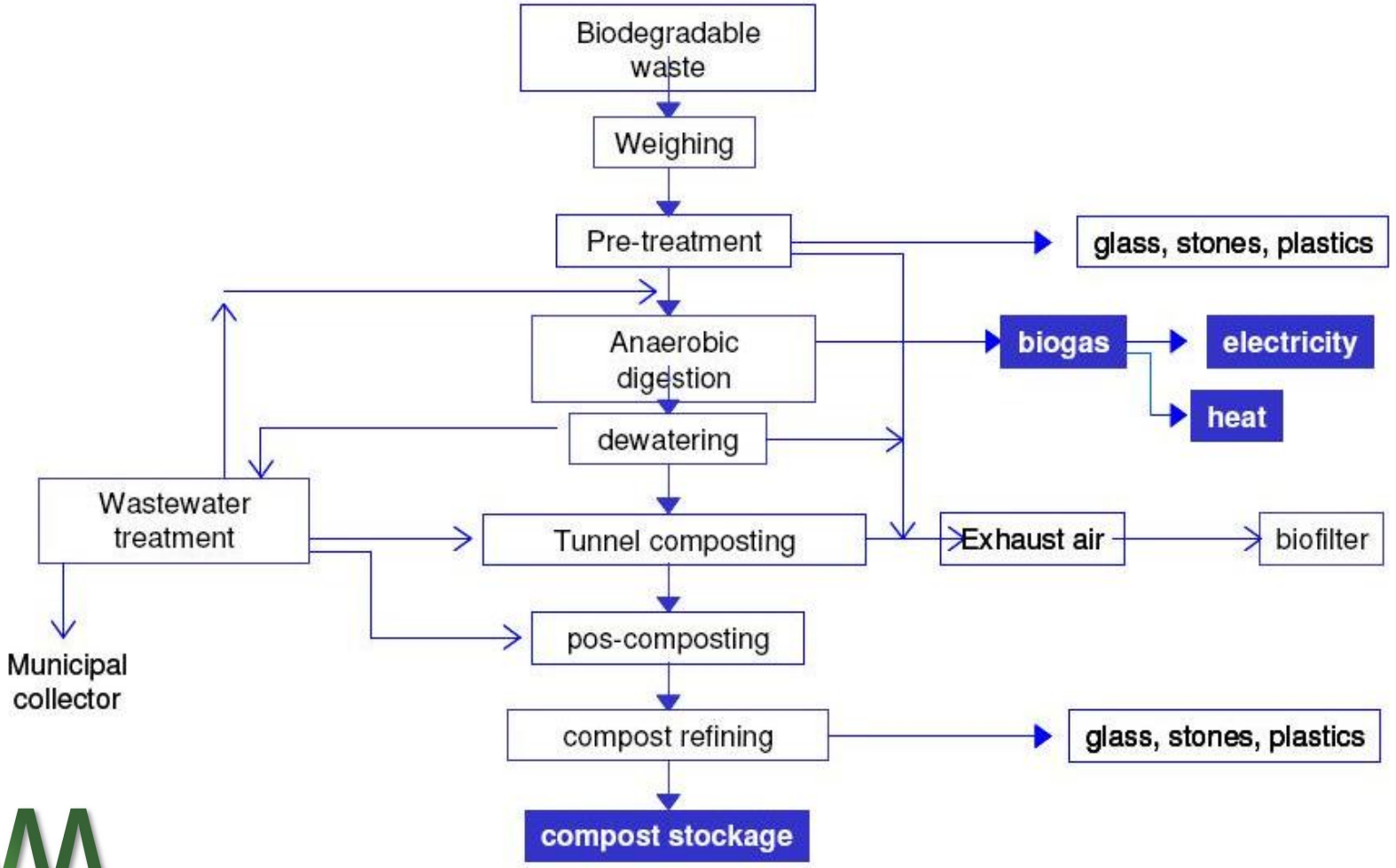
Anaerobic Digesting



Dutch Waste Management diagram.

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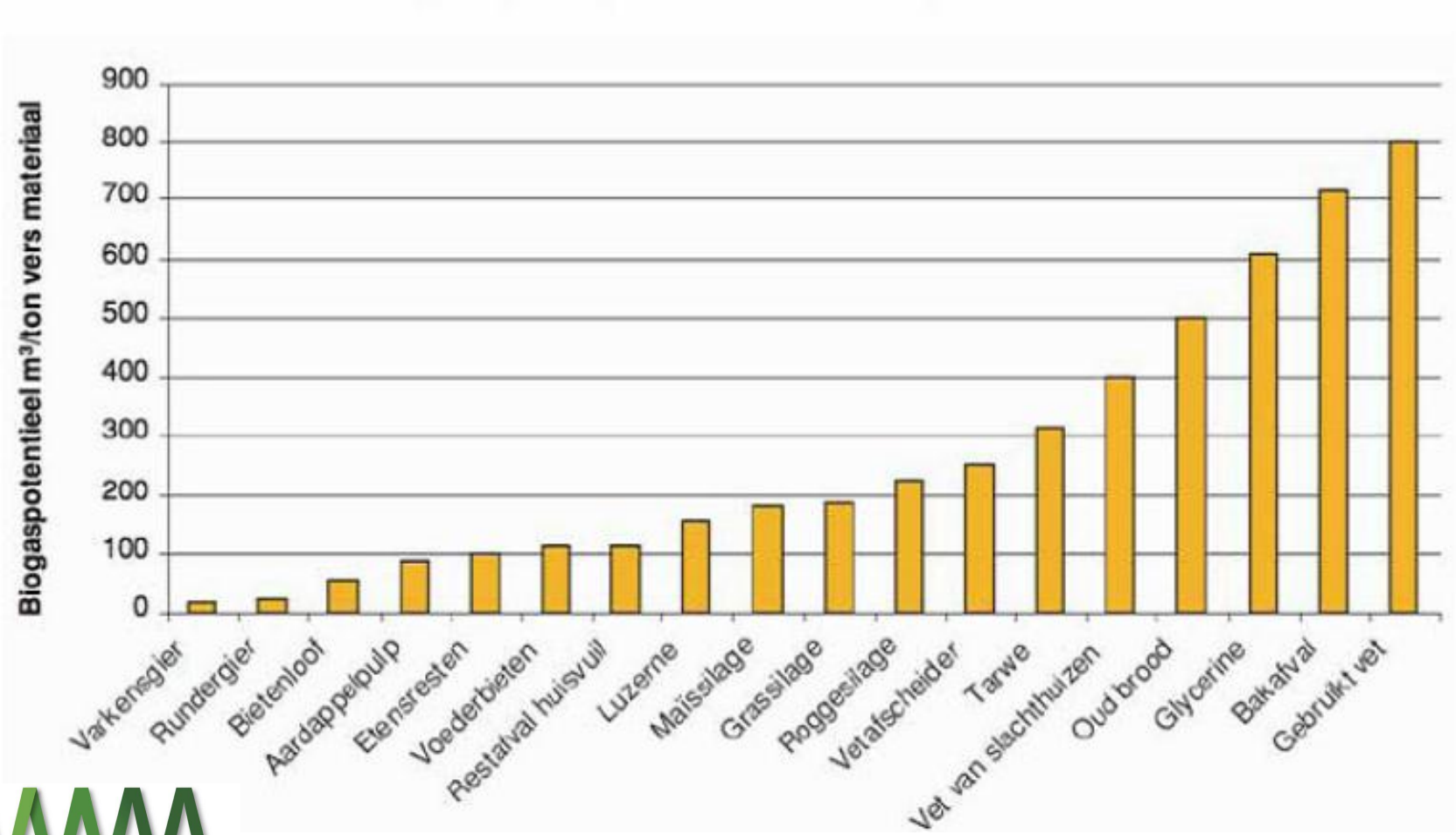
M3/t Biogas Waste streams



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Biogas calculator

Biogas production	Ton/y	Biogas m3/y	MWh-e/y
Organisch Afval	24.800	2.976.000	6.696
Maissilage-residu	20.000	3.600.000	8.100
Glycerine	5.000	3.000.000	6.750
Totaal	49.800	9.576.000	21.546

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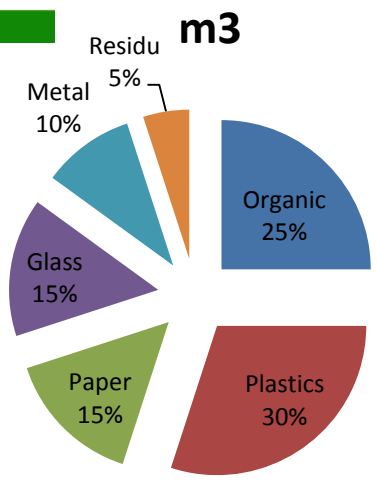
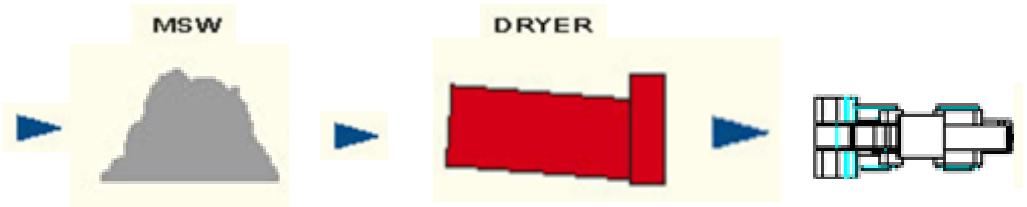
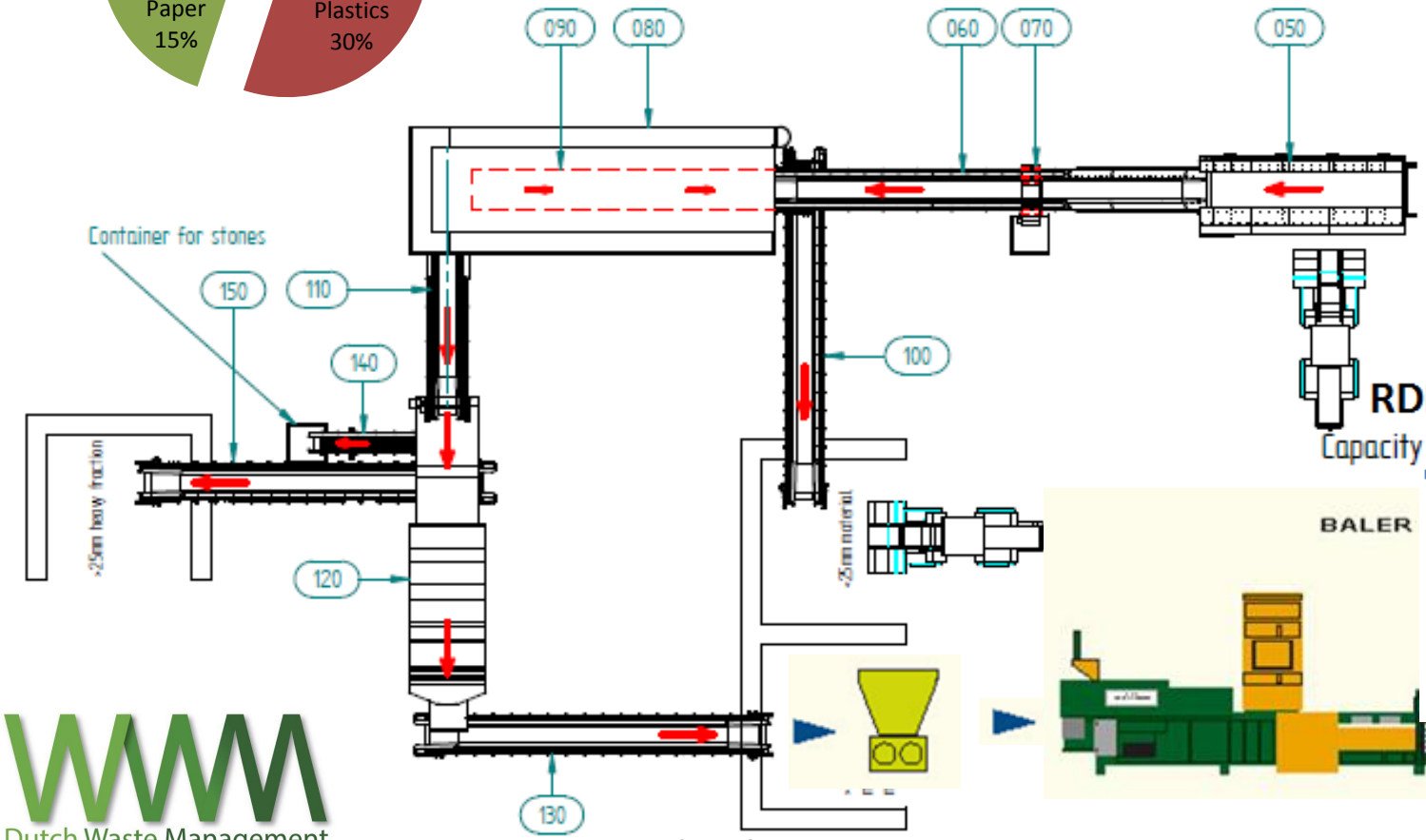
MSW treatment for RDF

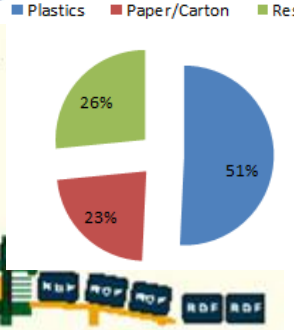






RDF-MSW UKR m3

Capacity of facility: 40 ton/hr



Mj/kg	Mj/kg
17	21

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MSW treatment for RDF

MSW-RDF	M3	Kg/M3	Ton	Mj/kg	Mj/kg
Plastics	85.000	60	5.100	27	34
Paper/Carton	38.000	120	4.560	12	15
Residu	44.500	120	5.340	12	15
RDF	167.500	90	15.000	17	21
MSW	250.000	230	57.500	8,5	11

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Planning process
Systematic method

- recognizing the problems
- collecting and analysing data
- assessing the situation in light of the analysed data
- suggesting actions, the accomplishment of which will serve to change the situation or correct the problem
- evolve suitable strategy for implementation with respect to time frame
- evaluation of the actions taken, if need be, to meet changing conditions
  - http://urbanindia.nic.in/publicinfo/swm/chap26.pdf

Dutch Waste Management

Proposal 2014 - 2020

- EU/NL test facility BBE combined with Indian know how SAHYOG program. To face local circumstances benchmark with other EU and Indian facilities BBE combined with EU know how SAHYOG.
- Pilots (in several regions) waste collection systems in India with support from Dutch Waste Management and marketing development re-claimed metarials such as plastics, paper, glas, metals and organics as part of the BBE
- Pelleting, testing and marketing development Agriculture residues and other organic waste for Energy production
- Sanitatize dumps and landfills together with implementing /-sorting facilities and possible biogas and energy production
- Feacal, sewage- and water treatment as part of the BBE economy (TU Delft participates in actual project South Africa/India)
- Management program with focus on communication and education programmes implementing KBBE (example Dutch NUSEP program 2009-2012)

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