



BRIDGING THE WORLD OF WASTE TO ENERGY

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**AWECT is dedicated to solving global waste issues
With superior HE-WtE technology and a vision on
Waste management strategies**

- 2016: 2.01 billion tons
- 2030: 2.59 billion tons
- 2050: **3.4 billion tons**

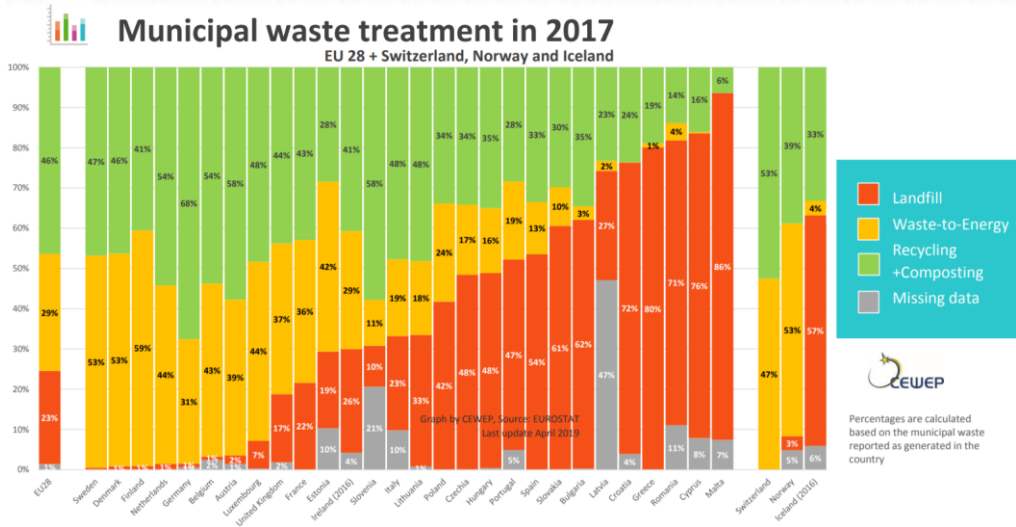


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Start the journey with Dutch experience

Netherlands is a leading country in sustainable waste management



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From most polluted to one of the most sustainable cities in the world through a long-term vision and consistent execution of the program

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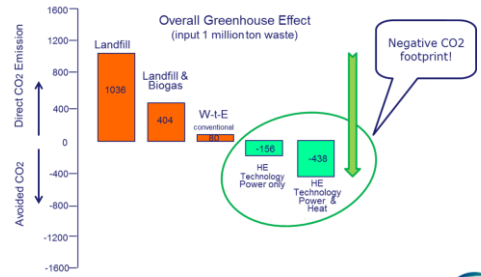
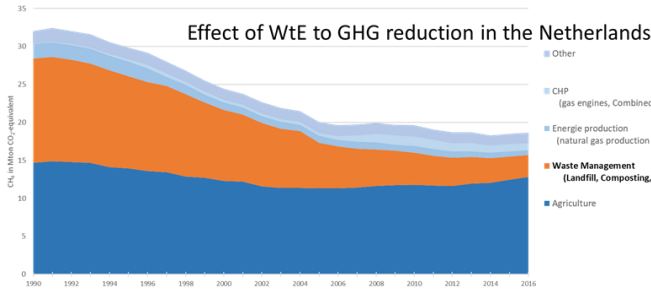


Environmental Impact

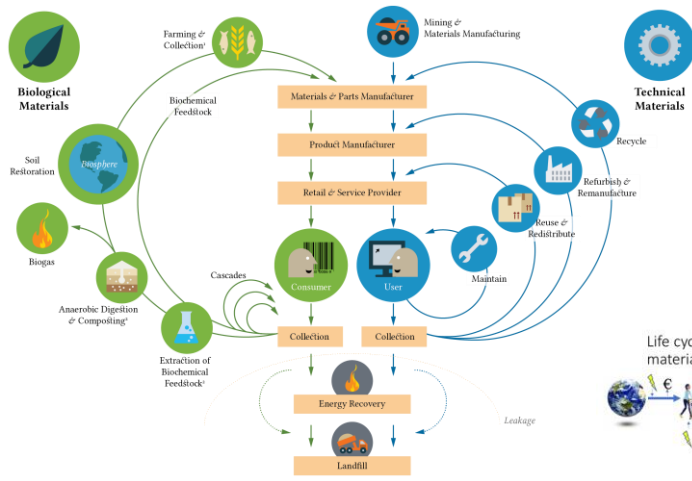
HE TECHNOLOGY
 >900 kWh/ton = 31%
 1,11 ton of Waste/mWh

VS.

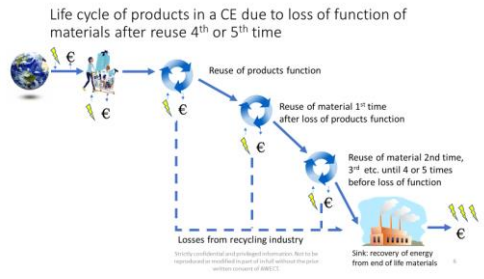
CONVENTIONAL
 650 kWh/ton = 23%
 1,58 ton of Waste/mWh



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The aim current recycling industry
 It is to buffer materials as
 Long as possible in society

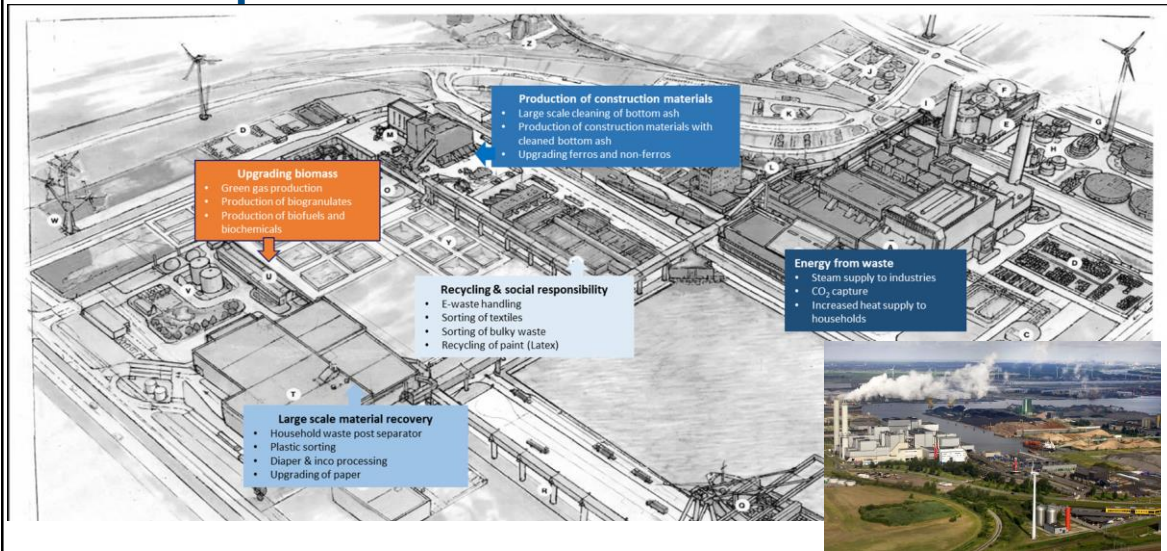


Create a long term vision on the
 development of **Circular
 Economy** by facing out landfill



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Eco-port in Amsterdam



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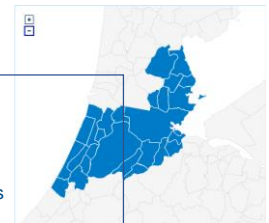


Waste to Energy is a collaboration between municipalities



AEB Amsterdam

- 1993: Waste-to-Energy plant
- 2007: HE-WtE plant started
- Owned by City of Amsterdam
- Partners: 7 city districts and 19 municipalities
- Situated in harbour area Amsterdam
- Largest single location WtE company in the world & largest renewable energy production plant in Amsterdam

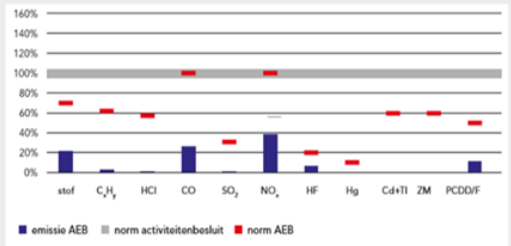
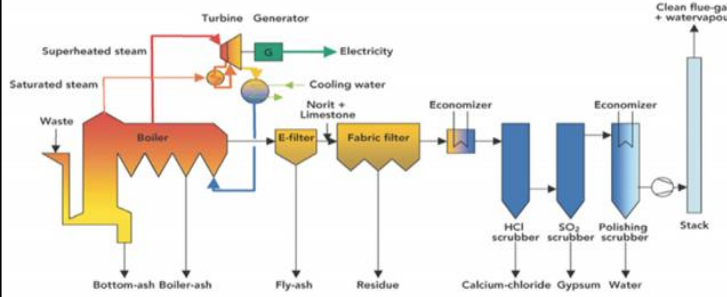


HVC Alkmaar

- Started in 1995
- Owned by 45 Municipalities and 6 water boards
- Situated in Alkmaar 30 Km North of Amsterdam
- Processing 650 KT per year



WtE with the highest efficiency 30,6% nett. and superior Flue-gas cleaning

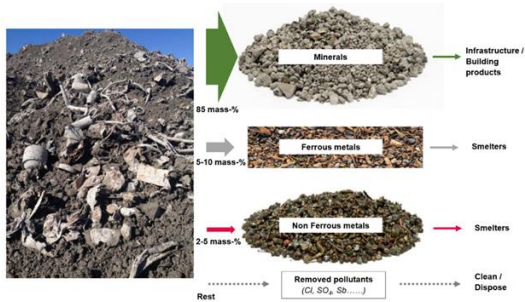


- **Operational figures**
- 1 million MWh electricity (~ 350.000 households)
- HRC E-efficiency > 30%
- 54% renewable energy (2,5% of total in the Netherlands)
- 0,7 million GJ heat (15.000 hh)
- Recyclables 250KT
- Bottom ash used for road foundation 20%
- Fe and non Fe 5%

Following the design principal
As low As Reasonable Achievable

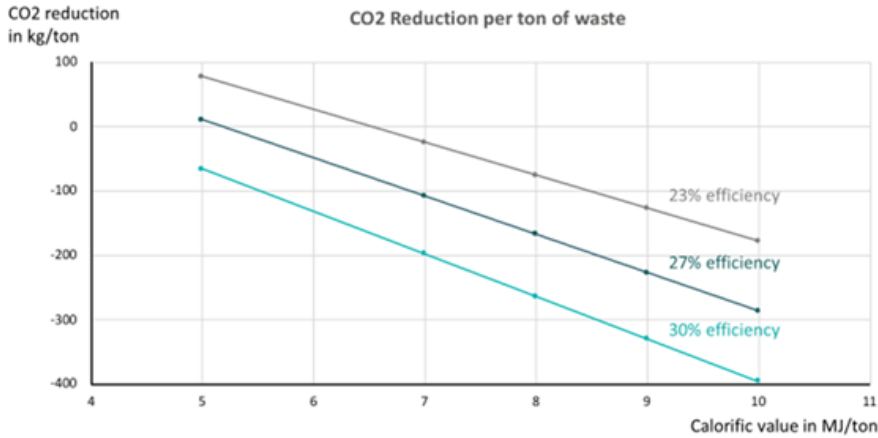


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CO2 credits ads up to the business case @ 20 \$ /ton when saving 1,1 MT/ year on a 2500 T/D

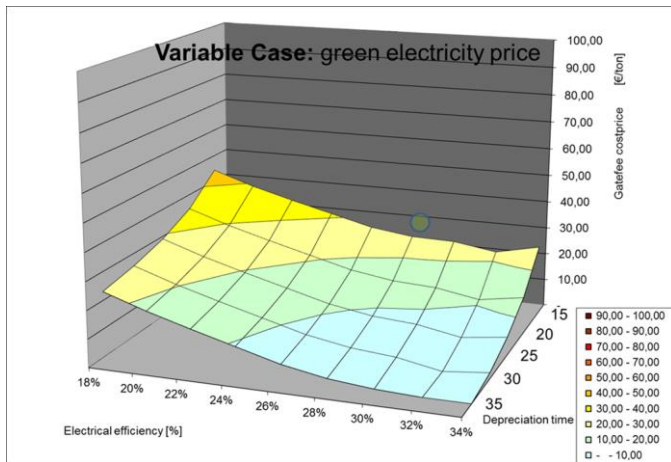


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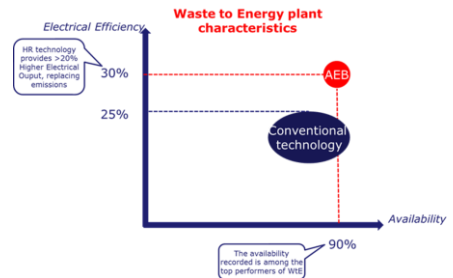
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The highest impact for society is reached from a perspective of Total Cost of Ownership



HE TECHNOLOGY

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CONVENTIONAL

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From a Macro Economic perspective investing in a HE-WtE project has a significant positive effect on a city and country.

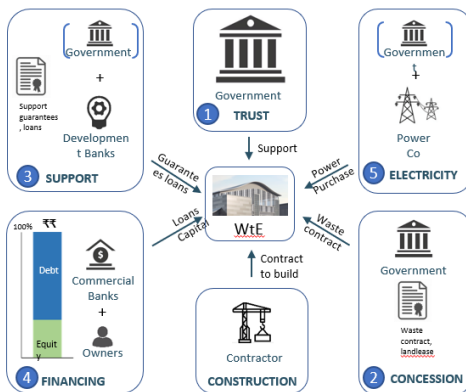
The business model of a WtE plant has a short-term business model for the project owner and a long-term business model for the society.

- The long-term effects for society are related to:
 - When replacing land-fill we see a reduction of valuable land occupation in growing cities,
 - Less emissions and major GHG reduction
 - Prevention of heavy metals leaching to the environment
 - Securing public health for the short and long term
 - Create additional high skilled jobs
- The basis for the development of a clean waste management system without leakages to the environment.
- Eventually leading to the development of Eco ports as the center of the circular economy.



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HE-WtE is the best “Sink Solution” for Circular Economy & Cities

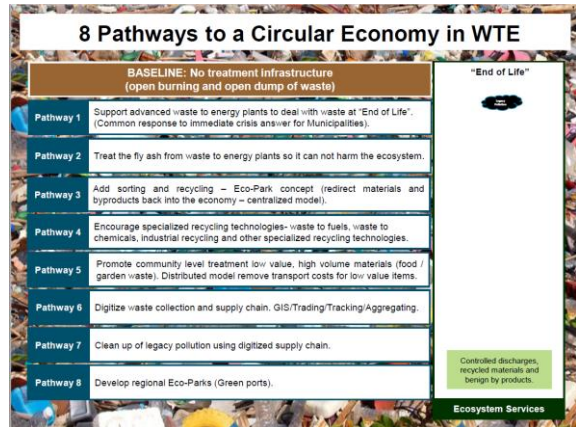


- Government plays an essential role in realizing WtE projects
 - 1 Convey trust by supporting all steps of the project development
 - 2 Ensure a reliable contractual framework in the form of a bankable long-term concession agreement
 - 3 Support financing of the project through potential guarantees or loans
 - 4 Commercial banks and Owners / Investors provide the required capital (potentially based on guarantees)
 - 5 A long-term bankable (and potentially guaranteed) power purchase agreement



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Align with UN and ADB



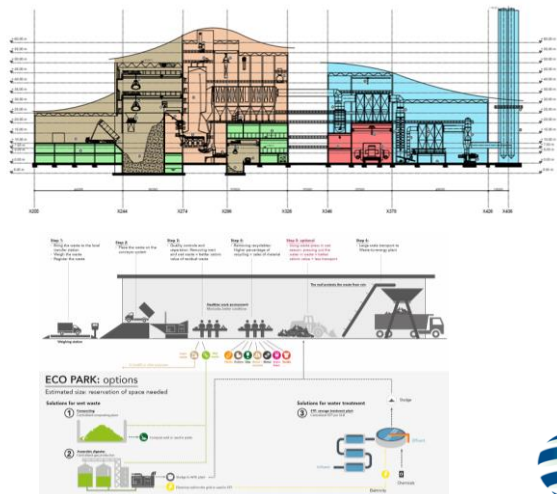
When you go for WtE
than go for the highest impact go for High Efficient Waste to energy



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AWECT offers the following services:

- (Pre) Feasibility Study
- Masterplanning
- Tendering
- Conceptual Design
- Basic Design
- Basic Engineering
- Detailed Engineering
- Operational Training
- Procurement assistance
- Quality Control
- O&M review & guidance and training



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Thank you for your attention!

Contact us @
Telephone: +31 20 244 0937
Email: info@awect.com
Address: Keizersgracht 534, 1017 EK Amsterdam

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