

Energy from waste in Flanders (Belgium)



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Flanders in 2006

- 6,1 million inhabitants
- 3,4 million tonnes/year of municipal solid waste (560 kg/inhabitant) (DIB/commercial waste not included)
- Very high recycling rates

Flanders – high recycling rates

	2005	2006
Recycling	70,7 %	71,1 %
W-t-E	25,1 %	25,5 %
Landfilling	4,2 %	1,1 % (Non-organic parts)
MBT	-	2,3 %

Used instruments in Flanders

- Landfill ban for burnable municipal solid waste and landfill tax of 77,32 €/tonne, increased by 20 % by some local authorities
- Obligation to separate at source
- Take back obligation for certain waste streams (WEEE, packaging waste, ...)
- Prior to incineration municipal solid waste has to be either sorted or collected separately at source
- Green certificates for power generated from renewable sources

System of green certificates in Flanders

- Since 1/1/2002, Flanders implemented a green certificates system
- The system is managed by the Flemish energy regulator (VREG)
- Promotion of power generation based on renewable energy sources
- Two-pronged system:
 - Producers of 'green electricity' can receive certificates
 - Power suppliers must submit annually a specific number of certificates

The awarding of green certificates

- Producers of electricity from renewable sources:
 - Solar, wind, hydro, tidal, wave, geothermal, biogas, landfill gas, sewage gas
 - Biomass energy: biodegradable matter in products, waste materials, vegetable and animal residues, household waste and assimilated waste
- The determination of the biomass-fraction in waste is done by the Flemish waste authorities (OVAM) (today 41,08 % based on sorting tests and political compromise)
- 1 green certificate = 1.000 kWh generated from renewables
- Certificates are registered in a central database, managed by the regulator

Certificate obligation for suppliers

- Electricity suppliers are obliged to supply increasing volumes of 'green electricity' to their customers
 - In 2008: 4,50 % of their total supplied volume
 - Increasing with 0,75 %/year to 6% in 2010
- Each year before March 31, suppliers have to submit a specified number of certificates to the regulator, dependant on their total supplied volume in the preceeding year
- Certificates can be traded on the market between producers and suppliers
- Missing certificates are penalised with an administrative fine of 125 EUR/1000kWh

Pricing of green certificates

- Till 2004 price was solely based on market demand ranging from zero to 125 €/Mwh
=> risky investment environment
=> low amount (lack) of investments
- Since 8th June 2004 the Flemish authority guarantees a minimum price to new installations over a period of 10 years (20 years for solar and offshore wind). The price level depends on whether you deliver to the distribution grid or to the transmission network
- Minimum price has to be paid by the manager of the grid or network

Pricing of green certificates

Technology	Minimum price €/Mwh – distribution	Minimum price €/Mwh – transmission
Solar energy	450	150
Hydro electric power	95	50
Onshore/Offshore wind energy	80/-	50/107
Organic-biological products	80	20
Landfillgas	80	20
Organic-biological waste (incl. W-t-E)	80	20

Conclusions

- W-t-E and high recycling rates go hand in hand. The availability of both are a clear KPI for a successful waste management policy
- W-t-E is in Belgium broadly accepted as BAT for the non-recyclable MSW
- A further increase of the recycling rates looks unrealistic. 70 % recycling (inclusive composting) looks to be a maximum taking into account the present composition of the MSW
- High landfill taxes, eventually combined with a landfill ban, for recyclable and burnable waste are the driving force to a more sustainable waste management policy
- In the long term the system of the guaranteed prices for green certificates is not sustainable due to the resulting price increase of electricity. In the short term it is very helpful as seed money for new projects, including W-t-E.



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