

MANAGEMENT OF SLUDGE FROM URBAN WASTE WATER TREATMENT PLANTS

WASTE 8

Sludge produced in collective waste water treatment plants is the result of the implementation of remediation techniques designed to reduce the amount of solids and contaminants in urban waste water before they are discharged into water courses. Their management requires the development of their agronomic or energy potential while ensuring that there are no adverse effects on the environment and health.

Production close to the expected ceiling

Since 1994, the production of sludge from urban waste water treatment plants (UWWTPs) almost quadrupled to more than 50,000 t of dry matter (DM) in 2015. This development is due to the increase in the equipment rate in Wallonia, which rose from 31% to 91% over the same period¹. Investments of nearly €3 billion over 15 years were necessary to facilitate this significant increase. In the long term (objective of 4,415,160 p.e. treated), the production of sludge is expected to reach 55,000 t DM/year according to the SPGE.

All sludge produced is valorised

In 2015, half of the sludge was incinerated with energy recovery² and the other half was valorised in agriculture³. The evolution of the share taken by each management method can be explained in particular by: (i) the development of the incineration and energy recovery sectors since 1999, following the prospect of a ban on disposal in technical landfill sites (*centre d'enfouissement technique - CET*), (ii) the ban on disposal in CET as of 01/01/2007 for all non-final waste⁴, and (iii) the encouragement of valorisation in agriculture, which has contributed to the increase observed since 2008.

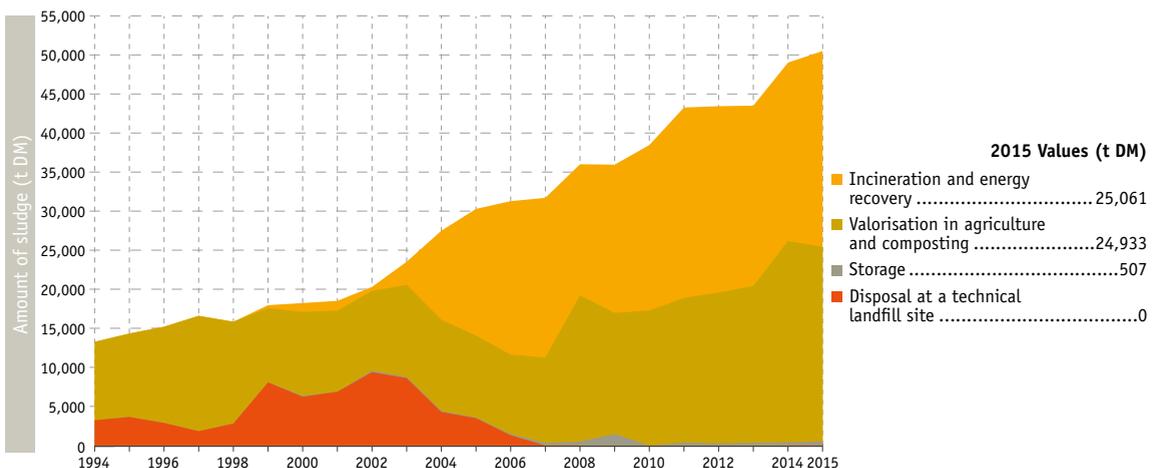
Possibilities for securing and fostering the agricultural sector

From the standpoint of the hierarchy of waste management methods, recovery in agriculture has priority over energy recovery⁵. It is also less expensive (differential estimated

at more than €120/t DM)⁶. However, it requires that the characteristics of sludge (e.g. pH and micropollutant content) and their conditions of use (storage, spreading, etc.) comply with the regulatory requirements intended to protect the environment and health: (i) marketing authorisation from the Federal Authority (FPS Public Health, Food Chain Safety and Environment, according to the Royal Decree of 28/01/2013), (ii) the certificate of use taking into account the capacities of the receiving soils (SPW - DGO3, in accordance with the Walloon Government Decree of 12/01/1995)⁷ and (iii) PGDA⁸. In order to improve the safety of the sector and encourage its development, improvements can be envisaged at various stages of management, from limiting pollutants at source to spreading methods. A recently published study has just made the relevant inventory⁶. These proposals for improvement are progressively evaluated (e.g. through pilot tests at several stations) and implemented in consultation with the treatment sector (OAA, SPGE, SPW, FPS).

[1] → WATER 19 | [2] Incinerators for household waste, cement works, coal-fired thermal power stations (Germany) | [3] Inputs of fertiliser elements (N, P, Mg, Fe, Mn, etc.), of organic matter and neutralising value due to sludge liming (stabilisation and hygienisation treatment) | [4] Walloon Government Decree of 18/03/2004 | [5] Decree of 10/05/2012 | [6] CEBEDEAU & ULG-GxABT, 2015 | [7] To the Royal Decree of 28/01/2013 and the Walloon Government Decree of 12/01/1995 can be added certain requirements imposed by the federal and regional authorities *via* the certificates, e.g. sludge liming and a pH > 9 before spreading which guarantee the absence of pathogenic germs. | [8] Walloon Government Decree of 13/06/2014; → AGRI 9

Fig. WASTE 8-1 Management of sludge from urban waste water treatment plants in Wallonia



SOERW 2017 – Sources: SPGE; SPW - DGO3 - DSD (declarations of OAA to the SPGE)