

Highest GHG emission reduction potential is in the municipal waste sector (MWS).

Landfills are a primary waste disposal method in the Republic of Serbia. Municipal waste, including hazardous waste generated in households, is usually disposed directly to landfills, without further management or treatment. Currently, Serbia has 164 officially registered municipal waste landfills, whose capacity has already been reached in most municipalities. Most of them do not meet the minimum

prescribed requirements for sanitary landfills, as they do not have bottom sealing to prevent the pollution of soil and aquifers. Also, leachate produced from landfills is neither collected nor treated.

The problem of landfill gas is resolved only in some landfills with out-of-date extraction units. In addition to the registered landfills, at this moment there are more than 3250 (year 2010) illegal dumpsites (4600 in 2009 year) of various sizes all over the country, which receive about 40% of MSW generated in Serbia. The Serbian waste sector is facing the challenge of establishing 26 regional sanitary landfills.

Carbon potential depends on the possibility of recovering methane from the landfill body. Landfill gas production and recovery rate can be calculated based on the date, on the quality of municipal solid waste

from all existing landfills and/or dumpsites, both the operating ones and the closed ones. Although it is very difficult to estimate landfill gas production as methane production varies according to numerous factors on the dumpsite, on average, it is possible to assume that 200 Nm³ of landfill gas is formed per ton of communal waste for about 20 years. For the total yearly amount of 2.2 million tons (in the entire Serbia) and landfill filling times of 20 years, about 8,800 million Nm³ of landfill gas would be generated. If only about 10% of the gas was collected, 880 million Nm³ of landfill gas would be available, i. e. an average yearly amount of 44 million Nm³, i. e. 5,500 Nm³/h. This amount of gas would enable yearly production of approximately 88 GWh of electric power and 100 GWh of heating energy in combined gas engines, which corresponds to 16,165 toe. In addition, approximately 2,750 Nm³/h of methane, i. e. 15.8 kt of methane per year would not be emitted into the atmosphere, which corresponds to carbon potential of 332 kt CO₂ eq. per year. Taking into account all other gasses, it is estimated that carbon potential in waste sector in Serbia is about 410 kt CO₂ eq. per year.

source: ESIASEE EnergyWatchSEE