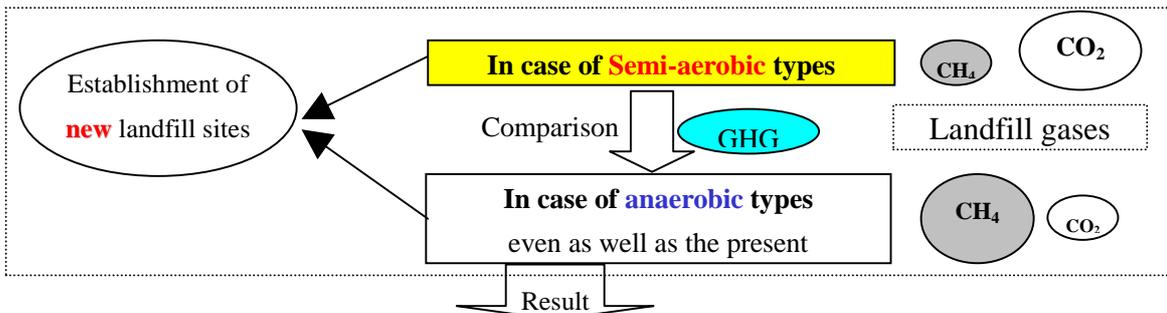


Study on reduction of methane gas generation at solid waste landfill sites by introducing semi-aerobic landfill type in China

An overview of field studies and plans → meant for new landfill sites of cities with a population of at least one million
(Haulage volume of solid waste from a population of one million at least 1,200 tons/day)

The amount of methane gas generated from landfill sites can be reduced by changing their construction from anaerobic types to semi-aerobic types. Field studies (concerning analysis of the containing rate of garbage, the components in solid wastes, generated methane and CO₂, etc.) will be conducted in Guangzhou and Beijing and the prediction of future population, the amount of waste and an empirical estimation of CO₂ and methane generation will also be conducted in order to evaluate the effectiveness of conversion to a semi-aerobic structure in reducing methane gas, etc.

The project aims to identify the current waste problems in China and proceed to the construction of a demonstrative 5-hectare semi-aerobic landfill site, which is expected to increase the awareness of semi-aerobic landfill systems, and to the construction of a 20-hectare semi-aerobic landfill site, thus encouraging the introduction of semi-aerobic landfill sites. (The population of one million now is assumed to increase to 1,340,000 in ten years.)



Prevention of global warming (In the Case that **anaerobic** types can be applied to disposals of refuse of 50,860,000 tons per 10 years)

Amount of methane reduction: 1,990,000 tons (CO₂ equivalent 42,000,000 tons) ← over a decade

About 50% reduction from when only anaerobic landfill systems are used

Cost-effectiveness: 99 yen/ ton CO₂ (Construction and running costs of landfill sites)



Other effects

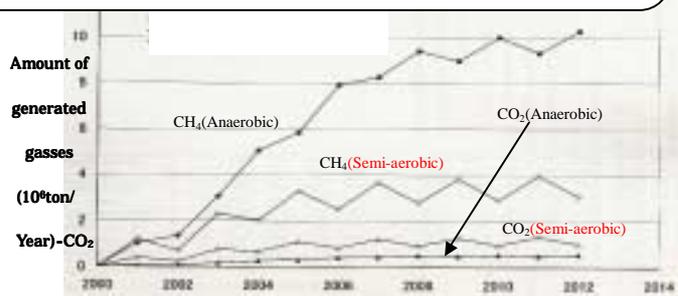
- Drastic reductions in the number of fire and explosion accidents due to methane gas generated from landfill sites



Problems

- The economy is growing fast in large Chinese cities so the changes in the composition of solid waste over the next decade must be identified.

The system is quite likely to be adopted in other areas and grow in significance.



Advantages of semi-aerobic landfill structure

- Helps stabilize waste → leading to the amelioration of leachate and early use of filled up sites
- Low-level technical requirement
- Better cost-effectiveness than aerobic treatment