

Study on Measures to Prevent Global Warming in Sewage Works

Whole term

2004.12 ~ 2005.3

(Purpose)

“Guideline for Measures to Prevent Global Warming”, revised in March 2002, defined the policy toward the achievement of the reduction target under the Kyoto Protocol (a 6% reduction below 1990 levels). After the revision of the guideline, the law concerning the Rational Use of Energy (Energy Conservation Law) was revised in June 2002. Based on this law, the administrator of the sewage plant where the fuel consumption exceeds 3,000kl a year or the electrical consumption exceeds 12 million kWh a year must draw up a medium-to-long term plan for achieving the objective of rational use of energy. And the administrator of the sewage plant where the fuel consumption exceeds 1,500kl a year or the electrical consumption exceeds 12 million kWh a year must periodically report the energy consumption and the conditions of equipments regarding the installation, and reform and abolition.

This study was conducted to revise the guideline for rational use of energy in wastewater treatment plants analyzing the data of medium-to-long term plan and periodical report submitted in 2004.

(Result)

1) Analysis of the medium-to-long term plan and periodical report for rational use of energy

The energy conservation measures which was planned at many sewage plants included measures of lighting equipments at 96 plants, measures of aeration tanks at 90 plants, measures of air conditioners at 43 plants, and measures of power equipments at 35 plants. And the most effective of them was measure of aeration tank which would reduce the energy consumption by 1.7%. The secondly effective measure was measure of lift pump which would reduce the energy consumption by 0.6%.

The most effective measure which was planned at a few sewage plants was digestion gas utilization which would reduce energy consumption by 18.1%. The secondly effective measure was measure of sludge incineration which would reduce energy consumption by 8.2%.

2) Study of the energy conservation in a sewer plant

The case studies were conducted about two measures, V belt of energy conservation type and micro hydropower, and these case studies were added to the guideline for rational use of energy in wastewater treatment plants.

(Conclusion)

In this study, the data of the medium-to-long term plan and periodical report which were submitted by the sewer administrator of about 300 was analyzed and showed that the ratio for the preceding year of power consumption was 100% or less in the sewage plant of about 70 % or more. It became clear that the administrators of the sewage plant promote energy conservation actively.

The case studies were conducted about the new measures against energy saving, and the guideline for rational use of energy in wastewater treatment plants was revised.

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key words

Prevention of Global Warming, measures of energy conservation , medium-to-long term plan