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Renewable Energy to Power Generation
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Abstract

Since global warming is the one of the most serious problems and the United Nations continues discussions towards a new international framework to succeed the Kyoto Protocol, in Japan the utility companies are examining the introduction of renewable energy in order to reduce carbon dioxide (CO2) emissions.

Using biomass as a source of renewable energy, the majority of its utilization in a coal-fired power station is the co-combusting of imported wood tips and pellets except for a slight example of domestic logging residue.

However, in recent years with the national environmental policy mandates RPS, Renewable Portfolio Standard, in 2003 and Feed-in tariff in 2012 to utilities, Municipal Solid Waste and sewage sludge as domestic resources is attracting a great deal of attention .

Sewage sludge has especially a big potential as an alternative to coal energy from the view point of both quality and quantity. As for the quality, sewage sludge fuel from dried sludge or carbonized sludge has the properties similar to what coal has. And as for the quantity, most of sewage sludge is not utilized as energy in spite of its abundance in the city and easy to secure. As a result, now utilization of sewage sludge fuel is likely to escalate.

The ratio of co-combustion of sewage sludge fuel with coal in coal-fired station is generally a few percent against coal in consideration of the influence in facilities and the operation. By now several stations have already started to co-combust with sewage sludge fuel, all of them are doing well and contribute to reduce CO2.

Co-combustion of sewage sludge fuel in the coal-fired station is very easy and can be done without much investment. Moreover by making the best use of the facility with high thermal efficiency and an advanced flue gas treatment system, co-combustion with Sewage sludge in the coal-fired station is the most effective way to realize the reduction of the environmental burden based on combustion of fossil fuel. Furthermore it can save sewage sludge disposal cost for a municipal government.

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