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Mitigation technologies of non-CO₂ greenhouse gas emission in Korea

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This paper introduces the emission status and the mitigation technologies of non-CO₂ greenhouse gas (GHG) in Korea. The total emission of GHG is 695 million ton CO₂-eq at 2013. About 10 % of them are non-CO₂GHGincluding HFCs, SF₆, N₂O and CH₄ which mostly come from energy conversion plant, semiconductor and chemical industry, organic waste treatment facilities. Korean government has finalized its 2030 target of reducing GHG emissions by 37 percent from business-as-usual (BAU) levels of 851 million tons. Above 315 million ton CO₂-eq has to be reduced to meet the target. The government has come up with a number of complementary measures in order to successfully implement its plan including an emission trading system. Several non-CO₂ GHG mitigation projects from industrial facilities have been already executed by international project base such as CDM utilizing the direct incineration or decomposing technologies at high temperature. Although these incineration technologies are simple for installation and maintenance, the additional CO₂ emission to atmosphere cannot be avoided due to CO₂productionduring incineration and high energy consumption. The thermal energy consumption to raise the flue gas temperature is large because the non-CO₂ GHG concentration from industrial facilities is very low. The various leading technologies are under development to lower the energy consumption for decomposing the non-CO₂ GHG or conversion these to the useful by-products.

Biography

Byung Chul Shin has completed his PhD from Korean Advanced Institute Science and Technology. He is the Director of GreenConTech after 20 years for Samsung Engineering as process researcher and strategic planner. He has developed the waste to energy technologies and air pollution control process at R&D Center and completed a lot of national strategic planning projects on environmental and energy policy. Currently, he has been carrying out the performance evaluation of non-CO₂ GHG mitigation R&D project.

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