

Recovery and Disposal of Ozone Depleting Substances: A Case Study of the Refrigerator Rebate Scheme in Ghana.

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ABSTRACT

The increasing threat of climate change and its devastating effects has increased the quest for sustainable mitigation and adaptation measures. Refrigerators contain significant amounts of ozone-depleting substances and greenhouse gases which are released into the atmosphere during their disposal contributing to ozone depletion, global warming and climate change. Using the refrigerator rebate scheme in Accra and Tema as a case study, a triangulation of quantitative and qualitative research design was employed using interviews, questionnaires and direct observation techniques to collect data from key staff of stakeholder institutions and individuals. Laboratory analyses were also carried out to determine the amount of CFC-11 in the polyurethane insulating foam of each discarded refrigerator. The results show that though there are enough relevant institutions available for the implementation of the rebate scheme and for the recovery of the ODS that are contained in these appliances they lack the necessary legal backing and state of the art recycling technologies to carry out their operations effectively. In addition, with the 4,000 refrigerators recycled so far, Ghana's contribution to the reduction of ozone depletion and global warming is only 130 kg of CFC-11 equivalent and 1,413,300 kg of CO_2 equivalent respectively. It is therefore recommended, among other things, that appropriate laws and technologies are put in place towards a more sustainable refrigerator management system.