

Wastage Management System with Zero Pollution

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Abstract

In our country and in the world has very large amount of different types of wastage just like PVC and their types, E waste, Foam and their types, and many types of Rubber, biological waste of hospitals. They spread develops many diseases for animals and Human beings. These diseases effected very slowly and after long time it become very fatal for living beings. Our duty as a researcher is to control the situation in any circumstances about wastage management with minimum cost and zero pollution. After burning of these wastage create large amount of heavy dark black smoke due to they are prepared by different types of carbons. This heavy dark smoke contains micro-carbon particles which destroys the surrounding environment of the earth and protective blanket ozone layer. These particles which causes hole in ozone layer are called OZONE DEPLETING SUBSTANCES (ODS). After this the particles of carbon creates hole in the protective blanket ozone layer. This increases the temperature of our Earth.

Keywords: Emission Trends, Coal Combustions, Carbon micro particulates, Thermal Power Plant, Carbon dioxide, OZONE DEPLETING SUBSTANCES (ODS), GLOBAL WARMING AND EL-NINO EFFECT, PVC, PLASTICS, OLD CLOTHES, RUBBER, POLLUTION, CARD BOARD BOXES AND PACKING MATERIALS, AND BIOLOGICAL WASTAGE, ozone layer, etc

Introduction

The result of this situation is GLOBAL WARMING AND EL-NINO EFFECT. Due to these problems they require a proper environment impact assessment before commencement of the project which is not done judiciously in our country. Various mitigation measures for the control of PVC, PLASTICS, OLD CLOTHES, RUBBER, POLLUTION, CARD BOARD BOXES AND PACKING MATERIALS, AND BIOLOGICAL WASTAGE etc along with some new technologies are discussed, and

this system used running wealth like power plants and other industries which has coal boilers at very minimum changes to control with zero pollution. So these pollutants destroy of natural layer of lands its become BARREN LAND of whole the world. Coal is the primary fuel for electricity generation in India and its usage is continuously increasing to meet the energy demands of the country. This paper presents emissions of carbon dioxide (CO₂), sulfur dioxide (SO₂), and nitric oxide (NO) from thermal power plants in India The emission estimate are based on a model in which the mass emission factors are theoretically calculated using the basic principles of combustion and operating conditions. Future emission scenarios for the period up to 2020-21 are generated based on the estimates combustion technologies and operating conditions. Thermal power plants can significantly reduce the emissions of greenhouse and polluting gases which producing by burning of wastage with this technique or system economically and easily also.

Air pollution-Fossil fuel power station and other plants which used coal boiler they release CO₂, SO₂, NO, and other air micro pollutants and many other pollutants just like PVC, PLASTICS, OLD CLOTHES, RUBBER, POLLUTION, CARD BOARD BOXES AND PACKING MATERIALS, AND BIOLOGICAL WASTAGE etc also released.

These air pollutants that particulates, biological molecules or other harmful micro particles spread into Earths atmosphere causing diseases and slow death of humans, damage to other essentials living organisms such as food crops or the naturallity or environment so cause of direct and indirect impact. Air pollution may come from anthropogenic or natural sources.

Stratospheric ozone depletion due to air pollution has been recognized as a threat to human health as well as a threat to the ecosystem of the earth. Photochemical smog results from large amount of coal burning and slow burning of PVC, PLASTICS, OLD CLOTHES, RUBBER, POLLUTION, CARD BOARD BOXES AND PACKING MATERIALS, AND BIOLOGICAL WASTAGE etc in an area caused by a mixture of smoke and sulphur dioxide, carbon monoxide, CO₂, nitrogen oxide, nitrogen dioxide etc. Acid rain has caused major problems in lakes throughout the India and the world. These pollutants are spread very harmful gases for ozone layer which controlled accurate atmospheric temperature and save the Earth from el-nino effect. The el-nino effect very serious problem to our planet. El-nino changes the atmospheric contaminations and weather cycle or climate of the Earth. About 60 % coal based thermal power plant station running in india at present. In this system controlling of air pollution with water pollution both, smoke pollution which developed by chimneys of coal based thermal power plants, process houses and other plants which used coal based boilers to steam generation as well as polluting water from these plants. So this air pollution creates lungs problems and water pollution creates skin and other many more diseases for humans.

Working System

We create a micro system for this hazardous problem which developed by this system use a running boiler unit. Some changes we attached a extra small unit of wastage

with controlling automatic delivered crashed pieces of pollutants materials in the boiler. The boiler burn the crashed pieces at very low temperature but its released large amount of heat after burning in the boiler. If these crashed pieces has 10 to 15 % humidity easily used in this process. This system run in coal boiler, electric boiler as well as gas boiler also. From this process we cure very harmful diseases and atmospheric impact. In the boiler we create a small change for rotating shaft with baffle plates to control and handling the speed of burning of crashed pieces. This process also create heat which compensate the temperature when used heat during the burning of crashed pieces of wastage. And released extra heat to maintain temperature of boilers to used to changed the into steam. For this system create a input manhole on boiler. From this hole we insert crashed pieces of every wastage for burned into the boiler. So no need of create extra plants and land for controlling wastage management and for also no need of dumping yard.

This system control hazardous gases, micro particles of smoke and pollution of water from one system. So in this system used a large amount of heat to vaporization of polluted water. This heat add a large amount of heat and increase atmosphere temperature. This system controlled easily pollution air and water both.

In this system The heat captured by water and vaporization start after some time the heat of smoke diluted by many types of particles in twice set of well. In this well crash the smoke by polluted water rapidly. Well contains a pipeline to send to smoke in the bottom. So collected smoke from direct boiler and send by motorized system into the well. The motor has coupled with a heavy duty blower with regulator for synchronization of speed. The baffle plates fitted on the pipeline. The baffle plates has many opposite countersunk holes with different sizes. The baffle plates outer dia matched with inner dia of well. Baffle plates fitted on the pipeline for three to seven stages to crashed smoke properly. Then heat transferred from smoke to water. Then water changed into vapour and vapour collected This system strive to maintain responsible as the specialist solution and providing the most efficient. So we

Emissions of greenhouse gases and other pollutants are increasing in India with the increasing demand for electricity. The aspiration for rapid economic growth leading to rapid industrialization coupled with accelerated urbanization and mechanization of agriculture has been responsible for this increasing demand of electricity ever since the independence. (www.eia.doe.gov, 2010) the growth of electricity generation and usage in India and China during the period 2000 to 2008 based on the EIA (www.eia.doe.gov, 2010) data. (www.powermin.nic.in.)

Coal is the favorite fuel for the electricity generation in countries like India and China. Abundant supply of coal locally sustained high prices for imported natural gas and oil make coal-fired generation of electricity more attractive economically. Coal is approximately 90% of the total fuel mix for electricity generation. Main emission from coal fired and lignite based thermal power plants are CO₂, NO_x, SO_x, and airborne inorganic particles such as fly ash, carbonaceous material (soot), suspended particulate matter (SPM), and other trace gas species. Thermal power plants, using about 70% of total coal in India. (Garg et. al., 2002), We use running power plants to control wastage management at very low cost with little changes very easily.

So we used this system for controlling wastage management as well as electricity generation and produce heat and temperature for various puposes in the industries also.

Conclusions

This study provides a viable “bottom-up” methodology for the development of emission control of different trace atmospheric species from coal and other pollutants like PVC, PLASTICS, OLD CLOTHES, RUBBER, POLLUTION, CARD BOARD BOXES AND PACKING MATERIALS, AND BIOLOGICAL WASTAGE etc combustion in thermal power plants in India for which measured emission factors are still sparse. Thermal power plants and other gas boiler, electric boiler are used easily and controlled wastage management very widely operating conditions and hence it is relatively cumbersome to develop plant specific emission factors by measurements. This is the first study which gives the emission controlled wastage management in future trends nationally.

References

- [1] www.eia.doe.gov, 2010
- [2] World Bank 2000. World Development Indicators-annual report of the World Bank on development indicators (www.worldbank.org/data/wdi2000/pdfs/tab3-7.pdf, [tab3-8.pdf](http://www.worldbank.org/data/wdi2000/pdfs/tab3-8.pdf), and / [countrydata/aag/ind-aag.pdf](http://www.worldbank.org/data/wdi2000/countrydata/aag/ind-aag.pdf)). Ministry of Power, Government of India, Annual Report 2001-02 & 2008-09 (www.powermin.nic.in).
- [3] Garg, A.; Kapse, M.; Shukla, P.R.; Ghosh, D., “ Large Point Source (LPS) emissions from India: regional and sect oral analysis”, Atmospheric environment. 2002, 36, 213-224. Chakraborty, N.; Mukherjee, I.; Santra, A.K.; Chowdhury, S.; Chakraborty, S.; Bhattacharya, S.; Mitra A.P.; Sharma, C.; “ Measurement of CO₂, CO, SO₂, and NO emissions from coal-based thermal power plants in India.”, Atmospheric Environment. 2008, 42, 1073-1082.
- [4] IPCC. “Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories”. Ed.; JT Houghton etal., IPCC/OECD/IEA, UK Meteorological Office, Bracknell, 1996. Indian Network for Climate Change Assessment (INCCA), India : Greenhouse Gas Emissions 2007, Ministry of Environment & Forests, India 2010.
- [5] ALGAS. (Asian Least-cost Greenhouse Gas Abatement Strategy-India), Asian Development Bank, Manila. 1998, Philippines.
- [6] NATCOM “ India’s Initial National Communication (NATCOM) to the United Nations Framework Convention on Climate Change”, Ministry of Environment and Forest, Government of India, 2004.
- [7] Central Electricity Authority (CEA). “Performance Review of Thermal Power Stations” 2010, New Delhi-11006.

- [8] USAID/TVA/NTPC, “ Heat Rate Improvement Guidelines for Indian Power Plants”. 2000.
- [9] Zeldovich, J.; “The oxidation of Nitrogen in Combustion and Explosions”, *Acta Physicochimica URSS*. 1946, 21, 557.
- [10] Hanby, V.I.; “Combustion and Pollution Control in Heating Systems”, Springer-Verlag 1994. Visuvasam, D.; Selvararaj, P.; Sekar, S., “Influence of Coal Properties on Particulate emission control in Thermal Power Plants in India”. *Proceedings in Second International Conference on Clean Coal Technologies for our Future (CCT 2005)*, 2005, Sardinia, Italy. *Coal Atlas Of India*, Prepared and published by Central Mine Planning & Defense Institute (CMPDI), Ranchi-834008, 1993, on behalf of Coal India Limited, 10 Netaji Subhash Road, Kolkatta 700001, India.
- [11] Bertonova, L.; Juchelkova, D.; Klika, Z.; Cech, B., “On unburned carbon in coal ash from various combustion units”, *World Academy of Sciences, Engineering and Technology*. 2011, 76, 352-355,.
- [12] Mandal, P. K. : “High unburnt carbon problem in fly ash & botton ash in some Indian stations. 2008”, *Water & Energy International*. 2008, 65, 34-44. Sathyanathan, V.T.; Mohammad, K.P., “Prediction of unburnt carbon in tangentially fired boiler using Indian coals”, *Fuel*. 2004, 83, 2217-2227. Mittal, M. and Sharma, C. 2003. *Anthropogenic Emissions from Energy Activities in India: Generation and Source Characterization, Part I* (www.osc.edu/research/archieve/pcrm/emissions) Garg, A.; Shukla P.R.: *Emission Inventory of India*; Tata McGraw-Hill Publishing Company Limited, New Delhi, India, 2002, pp59.
- [13] Olivier, J.G.J.; Bouwman, A.F.; Berdowski, J.J.M.; Veldt, C.; Bloos, J.P.J.; Visschediik, A.J.H.; van der Maas, C.W.M.; Zandveld, P.Y.J.,. “ Sect oral emission inventories of greenhouse gases for 1990 on a per country basis as well as 1⁰x1⁰”, *Environmental Science & Policy* 2. 1999, 241-263. Chowdhury, S.; Chakraborty, S.; Bhattacharya, S.; Garg, A.; A.P.; Mukherjee, I.; Chakraborty, N., “An emission estimation of greenhouse gas emission from thermal power plants in India during 2002-03”. In *proceedings, Workshop on Uncertainly Reduction in Greenhouse Gas Inventories*. Ed.; A.P. Mitra, Subodh K. Sharma, S. Bhattacharya & A. Garg, Published by Ministry of Environment and Forests, Government of India, New Delhi, 2004; pp 16-22. Rees, O.W.; Shimp, N.F.; Beeler, C.W.; Kuhn, J.K.; Helfinistine, R.J., “ Sulfur Retention in Bituminous Coal Ash”, *Illinois State Geological Survey, Circular*. 1966, 396.

