

Construction carbon
emission reduction
environmental
sciences essay



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28th May 2012 Introduction Chemistry has contributed significantly to the emission of carbon in the atmosphere through the reaction of carbon compound in various processes. The chemical industry needs to be environmentally conscious by altering its processes to reduce carbon emissions. To mitigate the emissions, the chemical industry has to design and implement effective carbon reduction strategies in its production and construction. Carbon Emission Reduction Chemistry is the science that deals with the systematic study of the reaction, properties and composition of organic and inorganic matter. The reactions involving carbon compounds lead to carbon emission. The chemical industry has come up with strategies to reduce carbon emissions for sustainable manufacturing. These measures are mainly employed in the production process as it is the main function in this sector. These strategies are implemented mainly in the firms' production processes to reduce the production of carbon and its emission to the atmosphere. These reduction strategies are discussed below. Insulation materials are made from chemicals in an effort to reduce the cooling and heating demands in companies. Through the embodied energy and leakage caused by the blowing agents, insulating materials contributes to carbon emissions. This is because energy itself is required in the manufacture and shipping of insulating materials, which is referred to as embodied energy, and also the blowing agents are potentially green house gases (WBCSD 2008). To solve the problem, the chemical industry has come up with a chemical that is sprayed on building surfaces to insulate them. By insulating your building with chemically made insulating products, you are saving on your carbon footprint and energy. The companies discourage the use of crop

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protection chemicals and chemical fertilizers. These chemicals increase agricultural production while reducing land use emissions. The companies are strategizing on producing fertilizers that will not pose problems as the current chemical fertilizers. These fertilizers are not fully absorbed by the plants of which some percentage evaporates into the atmosphere as carbon compound which is a form of carbon emission. Organic fertilizer is suitable as the nitrogen in the composite is more stable and can remain in the soil for a long time to be taken by the plants' roots. The chemical industry has developed sophisticated lighting techniques that conserve energy thereby reducing the amount of carbon emitted to the earth's atmosphere. The industry is advocating for low carbon fuels use in its operation to reduce its over reliance on non-renewable fuel sources as transportation fuel (Holland 2007). The low-carbon fuel standard advocates for this strategy to reduce carbon emission in the atmosphere. Low-carbon fuel as transport fuels produce less carbon as compared to petroleum fuels which are widely used today. These low-carbon fuels have a reduced carbon emission per unit of energy relative to the other forms of energy. Companies have seen the advantage of efficient motor systems in the industrial manufacturing plants to reduce energy consumption. The United States' Department of Energy estimates that 85% of an industrial plant's electricity consumption is by motors. Therefore, efficient motor systems will save the amount of energy consumed during production eventually reducing the volume of carbon emission. Efficiency improvements in motor systems reduce chemical sector energy consumption which is a vital part in the mitigation of carbon emissions. The industry is employing carbon capture and storage strategies to limit the percentage of carbon released to the atmosphere. This is a <https://assignbuster.com/construction-carbon-emission-reduction-environmental-sciences-essay/>

carbon reduction mitigation technology employed to tackle climate change while ensuring a safe energy supply. In this process, carbon is captured from fossil fuels and transported through pipes to safe underground reservoirs. Carbon dioxide from industrial sources is denied access to the atmosphere where it could have caused a huge damage. The industry players are importing green power to check on their carbon emissions. Generating electricity is a major contributor to greenhouse gases, but the use of renewable sources of electricity reduces the impact of energy production on the environment (Votta 1999). Companies are trying their hands on energy from the sun, heat pumps and wind turbines as fuel alternative. These are 'clean' sources of energy as they have no impact on the environment. The companies in the sector are advised to use energy efficient machinery and equipments together with energy efficient offices and buildings. The main aim of this method is to reduce on energy consumption in the production process while cutting down on heating costs in the buildings and offices. Less energy used means reduced carbon emission. The sector should research on and use alternative raw materials which are renewable. Together with alternative raw materials, the companies are encouraged to design and produce alternative products. The chemical industry has also intensified the use of catalyst technology in its manufacturing process. A catalyst speeds the rate of reaction which results in less energy being used to enhance the reaction. This energy saving in initiative reduces the amount of carbon emission into the atmosphere. Conclusion As the campaigns for a carbon free atmosphere intensify, it is paramount that the chemical industry get involved as its operations will be affected by this. In line with these campaigns, each firm has to devise means to measure and reduce carbon emissions into the

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earth's atmosphere. These strategies will help the industry in the identification of opportunities and climate risks which in turn will aid in cost reduction. It will also boost revenue and enhance its cooperate image. For the world to achieve carbon neutrality, structural changes must be made by the chemical industry in addition to supporting environmentally friendly plans that seek to assist in the reduction of carbon emission.