The Ongoing Severity of Air Pollution: Analytical Essay

Abstract

The ensuing paper identifies the key effect of climate change, along with its origin and detrimental effects on mankind. Combustion of fossil fuels for transportation, heating and cooling, and industry are the main sources of air pollution (Abelsohn, 2011). The gradual expansion of industrialization over the years has triggered air pollution (AR), the most pressing result of climate change, which has now become a synthetic hazard. Advanced technology and factories used to produce life necessities is now at the expense of mankind's health. This paper utilizes the skyrocketing statistics conducted by the World Health Organization (WHO) to further prove the health issues as a results of seven million premature deaths motivated by AR on a global scale (2014). In addition, provided are achievable steps and possible solutions individuals can take in an effort to mitigate this ongoing severity in order to fortify legislation primarily focused on AR.

Introduction

Within the extents of American Samoa's borders, it is evident that air pollution is currently a major problem that is prevalent not only in our island, but also on a global scale. The frequent release of carbon emission poses a significant threat on air cleanliness, and will eventually impose on people's health. Due to these emissions, a vast audience are at high risk and may contract certain health issues such as the following: chronic diseases, respiratory problems, cancer, and premature hospitalization. Therefore, matters regarding air pollution demand immediate legislative attention. Although industrialization provides many technological conveniences, air pollution poses a great threat to the public health and environment on a global and local scale; however, there are possible routes collective communities can take in an effort to tackle this synthetic hazard.

Description of Sides of Issue

Air pollution is the mixture of the following chemicals: motor vehicle emissions, factories fossil-fuel combustions, power plants, industrial and electrical power-generation processes, wildfires, volcanic eruptions, and gasoline powered equipment with the air that forms a manifold of toxic, poisonous substances that harm a society, a community, or even worse corrupt an entire nation with its toxic fumes. Air pollution can contribute to many world-wide problems in specific areas of the world. It is important to stay alert because air pollution is able to ruin the most beautiful cities with its smog, rain, fog, snow or dry particles. Thomas Gale (2005) implores the world to recognize the effects of air pollution because it is not only deadly, but extremely dangerous when people breathe in its harmful chemicals. The chemical sulfur dioxide is created through the burning of sulfur, which comes from the fossil fuel combustion. It forms a substance called sulfur dioxides (Gale, 2005). According to the research of the World Health Organization, air pollution is the most threatening problem of the world because it affects the environment and the health of the public. The chemicals in that are released in the air are sulfur dioxide, nitrogen dioxide, and carbon monoxide. The sulfur dioxide originates from the industrial and electrical

power-generating in the fossil fuel combustion process. It is emitted into the air and it is combined with the water, oxygen, and oxidants. It falls to the earth as either snow, fog, rain, or dry particles, and it is commonly known or referred to as acid rain. This chemical makes it very difficult to breathe for a person with a respiratory problem like asthma and it can corrupt your respiratory system in the process. It can also cause symptoms such as: fatigue, nausea, it can put you in a coma, and worse death.

Nitrogen dioxide is another harmful chemical that is emitted into the air from the motor vehicles, power plants, and fossil-fuel burning industries (Gerdes, 2009). It can cause a myriad symptoms to occur but it can damage a person's respiratory system. According to Gale (2005), nitrogen dioxide can trigger the defense mechanisms of the lungs and it can worsen a person's respiratory infections. In order to reduce the risks of these chemicals, people need to spend more time walking and less time driving vehicles to increase the quality of the air. It said that biking, carpooling, and walking can be helpful in decreasing the effect of air pollution. Carbon Monoxide is processed through the incomplete combustion of carbon-containing materials, such as: gasoline, natural gas, oil, coal, wood, and tobacco. The chemical is hazardous because it can cause an interference during the process of the blood being carried to the brain (Gerdes, 2011). It is mainly emitted by motor vehicles and it is highly effective in downtown urban areas where the density is severely high (Gale, 2005). Other chemicals can also contribute to air pollution, harming the ozone layer and causing climate change to occur. This outdoor pollutant can cause some fatal damage to certain areas of a city. With further study, people in communities can come together to combat this threat of air pollution. Separated or combined, these chemicals can seriously destroy and devastate the environment with its chemicals; it is significant to reduce air pollution.

The frequent emission of these harmful chemicals have a major effect on the ozone layer. The sole purpose of the ozone layer, the outer layer of the earth's stratosphere, is to absorb the ultraviolet rays of the sun. According to the National Geographic magazine, the depletion of the ozone layer is primarily triggered by chlorofluorocarbons (2018). These are chemicals that contained in products such as refrigerants, aerosol sprays, and solvents (Elkins, 1999). The University Corporation for Atmospheric Research states that as these chemicals are released, it is broken down into chlorine due to exposure to ultraviolet rays (2018). In the form of chlorine, it contacts with oxygen atoms within the ozone layer producing a depletion of the ozone layer.

As a result of the deterioration of the ozone layer, the earth becomes more susceptible to the harmful rays of the sun. Air pollution is motivated by the additional chemicals such as carbon dioxide and methane, also commonly referred to as "greenhouse gases". The Department of Environmental Protection of Massachusetts attests that the atmosphere begins to trap heat producing the greenhouse effect, causing a major increase in temperature (2016). As such, the earth then begins to experience severe weather, eventually triggering the global crisis of climate change. Severe weather has the ability to heighten natural disasters, making it more dangerous than expected. Examples would include heavy rains, drought, or unbearably hot weather. Despite the several, effects of climate change, air pollution is the most pressing casualty that influences not only the environment, but public health as well.

Air pollution is known to have manifold outweighing effects on certain aspects of life that is often regarded with apathy. Despite its negative impacts, some substances that contribute to air pollution have been known to actually have a positive influence. When one takes a deep breath, they are bound to inhale tens of millions of solid particles and liquid droplets. These specks of

matter are known as aerosols, and they can be found in the air over oceans, deserts, mountains, forests, ice, and every ecosystem in between. They drift in Earth’s atmosphere from the stratosphere to the surface and range in size. Despite their small size, they have major impacts on our climate and our health (Voiland, 2010).

Aerosols are also referred to as pollutants. In an article published by the National Public Radio, it said that aerosols could be good for the planet. Natalie Mahowald, a climate researcher at Cornell University, attests that scientists are currently trying to identify what activity is performed aerosols are released into the atmosphere. 'There are so many different kinds of aerosols and they have many different sources,' she says. 'Some warm and some cool. But in the net, humans are emitting a lot of extra aerosols, and they tend to cool for the most part.'

Mahowald continues to describe its usage by stating that aerosols reflect sunlight back into space, or they stimulate clouds that keep us cool. But it turns out that's not all they do. These aerosols also influence how much carbon dioxide gets drawn out of the air by plants on land and in the sea. 'They can add nutrients, for example, to the oceans or to the land,' Mahowald says. 'But also while they're in the atmosphere they can change the climate, and so that also can impact the amount of carbon the land or the ocean can take up. So there are quite a few different ways that aerosols can interact.'In addition, aerosols are not only helping reduce global warming by cooling the atmosphere, but they're helping reduce the amount of carbon dioxide that stays in the air once we emit it (Harris, 2011). However, mankind persists in attempting to limit the emission of aerosols because it damages public health, but it greatly assists in terms of the climate.

Position

Air pollution is a serious matter that must be paid heed to in order to provide a remedy. It is a synthetic hazard that is primarily started by major factories and industries. The effects of air pollution are known to negatively impact our environment, deplete the ozone layer, and spark skyrocketing statistics in immortality rates that are related to respiratory diseases. This is all achieved by the frequent emission of greenhouse gases that are released into the atmosphere. However, some of the substances released are proven to have a positive effect on our environment and climate. In spite of the opposing views, it is in my best interest that air pollution must be precluded in order to promote a sustainable future because our resources, land, water, health and agriculture is at stake. Although it is not entirely ominous, the bad still outweighs the good.

Discussion of Position

In order to keep our air free from chemicals, people must take the necessary steps to prevent infections and other deadly illnesses that are caused by air pollution. The United States Environmental Protection Agency urges people to use less equipment that is powered by gasoline due to the toxic chemicals that is released into the air (2018). The International Association for Medical Assistance to Travelers deems it preferable to engage in physical activity by walking to work instead of using motor vehicles or using public transportation to diminish the effect of the chemicals on the human health (2019). People need to avoid burning plastics, trash, leaves, and other materials to hinder air pollution from affecting countries, especially American Samoa. People should make sure that gasoline does not spill out of gas

tanks because it can contribute lethal gases into the air that can cause air pollution. People should take this air pollution problem as a major crisis so that it can be addressed and solved for future and present generations. People should spend more time enjoying the fresh air; instead of polluting it, countries like American Samoa and India should do their absolute best to shape a better place and environment where people can live and breathe clean air.

According to the Science and Development Network report (2018), people have been suffering from air pollution and it has been creating chaos for some parts of the world, including American Samoa. Air pollution has proven to be the known killer then tobacco because it has been affecting other developed countries such as India. Additionally, the World Health Organization states that one third of the world's seven million deaths in Western Pacific Region have happened because of air pollution (2019). It is also a life threatening situation for all human beings because ninety percent of people inhale these toxic gases around the world. In spite of this, young adult and children are more susceptible to the inhalation of these chemicals because of strenuous activities. It is significant to reduce the air people breathe for the sake of the future generations that will seek to form a better environment for others to grow, prosper, and nurture. Furthermore, President Emmanuel Macron of France chimes in to further support the high demand for immediate action to combat this pressing issue at the Seventy Second United Nations General Assembly (2017) :

We all know that the degradation of the environment is already causing hundreds of thousands of deaths – millions according to some calculations – due to global warming and air pollution. And those most affected are always the most vulnerable people in the most vulnerable countries: children, elderly people and women, particularly pregnant women, and unless it's slowed down this change will cause the disappearance of entire territories. It will accentuate water wars, famines, the exhaustion of natural resources, exoduses and therefore all the geopolitical turmoil issues of which we're perfectly aware and of which, much too often, we deal only with the ultimate consequences without tackling the root causes.

Questions

In researching this topic, I understood the casualties that it could produce; however, my most pressing question was what can we, as a collective community, do to address it? It is without a doubt that air pollution has atrocious effects on society, and it is conspicuous that certain steps must be taken to combat this issue at hand with an iron fist. As such, this can be achieved by humbly approaching the Fono to pass an additional regulation. Within this regulation, it is compulsory for customers to have their vehicle undergo an extensive emission inspection program, also referred to as the smog check. This must be carried out by the American Samoa Environmental Protection Agency in coordination with the Department of Public Safety to decrease the effect of air pollution. A smog check monitors a vehicle and its engine emission in an effort to ensure clean air quality and place a sense of supervision on carbon emission, specifically from vehicles (Moor, 2016). The smog check is currently effective and is currently used by thirty-three states and is conducted biennially; however, vehicles that are twenty-five years or older are exempt from emission testing.

The Bureau of Automotive Repair Smog Check Referee Program explains that prior to car renewal registrations, each vehicle that has been inspected must present a specific indication if the vehicle requires a smog check (2016). It is well understood that this implementation will

require sufficient time to fully process each vehicle on island. In spite of this, the emission inspection program will commence specifically with heavy-duty motor vehicles such as the following: busses, colossal trucks, recreational vehicles, delivery trucks, etc. Vehicles that contribute the most towards air pollution can be processed by tackling the commercial vehicles. As time proceeds, the program will then extend to personal vehicles to help with this world crisis the communities face.

In opposition to this inspection program, one may raise the concerns of those who are not equipped with the financial means to support themselves, if their vehicle requires service when it fails to meet the emission standards. It is imperative that the Fono implements a government transportation system to those who may be affected by these issues. Although there are busses that exist, they are owned by private businesses. The government transportation line is anticipated to be comprised of electric busses, in order to eliminate car exhaust and promote clean transportation. The Environment America Research and Policy Center proves that electric busses can preclude 5.3 million tons of greenhouse gas emissions per year (2018). In addition, it would be highly appreciated if island-wide bicycle lanes were added to our road infrastructure to provide another alternative in order to reduce the frequent usage of cars and enrich the air quality of American Samoa.

Summary

People need to realize the dangers of air pollution and its effect on communities. It is able to devastate countries and corrupt nations, such as India and American Samoa with its toxic chemicals. Air pollution is damaging the ozone layer, and it is causing the change of climate. The ozone layer seems to be getting thinner and thinner by the day because of air pollution. In spite of the manifold casualties, people with respiratory problems and other pressing conditions will continue to suffer and eventually face immortality if air pollution continues to be regarded with complacency. Individually, one option people have, but are not limited to, is to spend more time walking and less time in their vehicles polluting the air. In order to increase the chance of human survival, immediate action must be taken to decrease the emission of harmful chemicals into the air. As a collective community, we must disregard the minimal positive impact parts of air pollution is said to have. It is highly imperative that these measures be taken and that air pollution is approached with a seriousness because our means of living and public health are jeopardized.

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