Effects of black carbon on artic ice

Literature, Russian Literature

Effects of Black Carbon on Arctic Ice This paper is an economic analysis of effects of black carbon on Arctic Ice. Cost Dealing with domestic heating and cooking, and biomass burning may prove to be demanding, because resources incorporate a large number of people with minimal economic resources. It requires tremendous amounts of finances to manage sources that emit black carbon. In addition, it is also costly to adopt control technologies that decrease black carbon, for example, it is extremely expensive for consumers to switch fuels, such as from diesel to natural fuel in their cars. It is also expensive to replace diesel trucks and buses with buses and tracks that use natural gas. Moreover, it is costly to develop electricity grids in industries that use diesel or coal. It is also costly to reroute airplanes that use the Arctic Ice route as this will require additional fuel (Ramanathan & Carmichael, 2008). Nonetheless, there is the probability of enhanced development and financial assistance to decrease the black carbon emissions through affordable technologies, for example, purchasing cheap fuel-effective stoves, fitting vehicles that use diesel with filters to suppress black carbon, replacing inadequate cook stoves with environment friendly choices such as novel designs that burn fuel entirely or solar cookers. It can be presumed that it is both costly to deal with black carbon emissions or adopt alternative technologies. Benefits Black carbon emissions have a number of benefits to the economy. First, when the Arctic ice melts, it will be undemanding to extract additional fossil fuel. The Arctic is assumed to contain approximately 30% of natural gas and 15% of unexploited oil reserves of the entire world. This discovery has enhanced interests from large fuel corporations from different parts of the world, for

example, Rosneft of Russia and Exxon Mobil of United States of America. The exploitation of these resources means the prices of natural gas and oil will decrease due to surplus. Second, current research indicates a warmer Arctic will enhance the fisheries sector in the region (Dons, 2011). This is because there will be a variety of fish species that will adopt and survive the environment than the few which exist in the freezing and icy temperatures. Finally, there will be a boost in trading activities between different regions. The decreasing ice has started to permit the movement of ships across the Arctic. Risks The direct impacts of alterations in the Arctic are varied. Nevertheless, an increase in black carbon emission will pose tremendous threats to the Arctic and to the environment. A decrease in the ice levels will speed up global warming and may have a negative effect on the Greenland ice area. This will consequently elevate sea levels which may be risky for those using water transport or living in and around those areas. There is also a risk of wildlife suffering. There will be a negative impact on polar bears which depend on seals for food, causing their demise (Ramanathan & Carmichael, 2008). In addition, there is a risk of increased unseasonal snow storms due to changing wind designs in Arctic warming. Limitations There are a number of limitations that result from black carbon emissions on Arctic ice. One, a large amount of finances and resources will be needed to maintain the ice levels in Arctic. Automobiles will be required to alter its fuel, for example, from diesel to natural fuel. Also, cars will be required to be fitted with filters that will help to control black carbon. Moreover, industries that use diesel or coal in the manufacture will be required to convert to electricity or other environment friendly sources. This is disadvantageous to

the owners who have to adjust to the new costs of managing black carbon. Two, the ice will be substituted by a shady heat-absorbing water body beneath. It will also be difficult for the ice to form again because of the inadequate components to chill the water within the small period (Oldroyd, 2006). Problems There is a problem of cost when dealing with the effects of black carbon on Arctic ice. It is costly to adopt new technologies or utilizing alternative resources in place of sources that emit black carbon. For example, it is expensive to reroute airplanes that use the Arctic Ice route as this will require additional fuel, develop electricity grids in industries that use diesel or coal, and replacing fuels in cars and homes. The warm temperatures will negatively affect the polar bear population as it is most comfortable in chilly areas. The government will be forced to formulate policies that address the unexpected snow storms. Finally, trading activities being undertaken through the sea may suffer due to elevated sea levels (Dons, 2011). References Dons, E (2011). Impact of time-activity patterns on personal exposure to black carbon. Atmospheric Environment, 1(1), 3594-3602. Oldroyd, D. (2006). Earth cycles: A historical perspective. Connecticut: Greenwood Press. Ramanathan, V., & Carmichael, G. (2008). Global and regional climate changes due to black carbon. Nature Geoscience, 1(1), 221-222.