

Canada is fortunate
in having an
abundance of energy
sources. identify and
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RUNNING HEAD: CANADA'S CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE ENERGY

Canada's Challenges and Opportunities for Sustainable Energy

School Date Canada's Challenges and Opportunities for Sustainable Energy

Canada has abundant sources of energy from both renewable (e. g. solar, wind, biomass) energy and non-renewable energy (coal, oil, natural gas). Canada has high reliance upon energy in keeping its economy and social life moving. Energy is used for warmth (the weather is cold), industrial production (e. g. mining, steel, paper), transportation (increasing cost in traversing the vast land area), maintenance of high-energy lifestyle (more use of private cars than public transport, single family homes), and high standard of living (use of more household appliances). Moreover, the lower cost of energy use encourages people to use more energy. This causes more carbon emissions and Chlorofluorocarbons (CFCs) (manufactured gases) into the atmosphere that worsens the greenhouse effect (GHE). GHE refers to the increase in the global temperature that causes corresponding changes in the environment. All of these human-caused carbon emissions and other greenhouse gases (GHG) augment the natural processes that commonly occur such as solar radiation and methane (from animal wastes and decaying matter). Solar radiation and natural emissions are essential in keeping global temperature at an appropriate level. However, augmenting them with the GHGs from human activities has considerably increased the temperature that already impacts upon the climate. Climate change has been manifesting its impact upon the environment, social life, economy and political thrust of governments.

Climate change causes modification in the weather patterns, increasing sea

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level (affects fresh water sources), ecological imbalance, food security problems (changing climate affects food and agricultural production), and political and social repercussions. The More Developed Countries (MDCs), to which Canada belongs, add greater amount of GHG emissions than the Less Developed Countries (LDCs). Canada has emitted 540, 000, 000 tons of carbon dioxide in 2009 (or 16. 3 tons per capita, China had 6. 1 tons per capita) while its 2007 oil-equivalent energy per capita used is 8, 169 kg. Canada is considered as one of the leading manufacturers and users of fossil fuels and contributor of GHGs on a per capita basis. While Canada has been endowed with much alternative sources of energy, it is still heavily reliant upon fossil fuels. In order to become a world energy leader, it has to address this issue. Although the impact of climate change has already been manifesting, there are still scientific uncertainties involved with this phenomenon. The climate change models are limited and implementation would be very costly. The available climate variables are also unreliable. On the aspect of human limitation, the future GHG emissions are unknown with present data being mere speculations and approximations. The climate change problems have been identified. The greater challenge though is the identification of appropriate strategies that would address them. The cost of implementation of the strategies would be very high, but to become an energy leader, Canada has to give its share in the expenses that the program entails. This is the proper recourse because it contributes to the degradation of the environment. Canada must also gradually shift its use from non-renewable to renewable energy. This cannot be done abruptly since many production and industrial infrastructures are reliant upon non-

renewable energy. Canada should also concur with the international conventions and frameworks (e. g. Toronto Convention, Copenhagen Summit) that provide solutions to climate change. Climate change can no longer be stopped at present, and the best that Canada can do is to mitigate its impact. In line with the mitigation thrusts, Canada can develop more energy efficient machines and appliances to lessen energy consumption. Buildings and structures that will be erected should conform to the green building specifications while existing ones should be retrofitted so that energy consumption would be lesser and compliant with renewable energy specifications. On the part of the government, a strong political will must be implemented. It has to legislate laws that require corporate responsibility among organizations and businessmen. Laws passed must be proactive and capable of modifying existing production and lifestyle practices. Canada is earning from the export of petroleum and forest products that contribute to GHG emissions worldwide. Their production yields GHG emissions in Canada, and their use by other countries add up to the emissions. Thus, the government must be willing to sacrifice and accept a decline in income from export of these products if it has to become a leader in energy-efficient use.