

Casual Argument Review: Read the below essay and write a review to respond all of the following questions. Please be specific as possible, and provide details to support the claims you are making. (Write about 2 pages)

1. What is the **claim**, or thesis, of this essay? Is the writer's position clear? Copy it word-for-word here, and let the writer know if you have any suggestions.
2. Who is the **specific argument** that the writer is responding to in this piece? (Summarize it in a few sentences.)
3. What **specific evidence** does the writer offer in support of his/her thesis? (It's OK to make a list of the points they raise.) Do you have any suggestions that would help strengthen this portion of the essay?
4. Does this writer **effectively refute objections** from a skeptical reader? (Writer should mention one or two counterarguments and refute them.) Discuss.
5. **Structure:** Does the writer's essay seem to be unified? Is there a clear introduction, in which the reader is introduced to the issue and the thesis is presented? Do ALL paragraphs have clear topic sentences/transitions? Scan the paper for these basic organizational issues and offer advice/feedback.
6. **General:** What are the strengths of the essay as it is presented now? Are there stylistic suggestions for the draft? Is it formatted correctly (heading, title, etc.)? Do you have any further recommendations for this person?

<Essay>

Non-Renewable Energy Needs To Be Replaced by Richard Smith

The United States top 3 energy sources (coal, nuclear & natural gas) are dangerous to our environment and the public health. The affects of these types of energy impact the air we breathe, the water we drink, and contributes to greenhouse

gases which is a major cause of climate change. Many cities and states have been working on transitioning towards renewable energy generation, but as a nation, we are still dependent on non-renewable energy. There has been talk about a renewable energy standard for all states to achieve, but no legislation has been made. Because of this, states have taken it upon themselves to enact their own standards and goals, proving to the entire country that moving away from non-renewables can be accomplished, and being trend setters for the world, showing concern for their citizens, and protecting their environments.

There are 5 gases known to impact the greenhouse effect, and 3 of them are caused by the burning of fossil fuels, carbon dioxide (CO₂), methane and nitrous oxide(<http://climate.nasa.gov/causes>). These gases create the greenhouse effect which creates a barrier in our atmosphere that prevents heat from escaping. Daily measurements of temperature are made throughout the planet, on land and sea, and the facts cannot be denied. According to the National Climate Data Center (NCDC) website, “the 20 warmest years have all occurred since 1981, and the 10 warmest have all occurred in the past 12 years.” (<http://www.ncdc.noaa.gov/indicators/>). In combination of experiencing warmer years the increased warmth is increasing the volume of our oceans, and as glaciers continue to melt the sea level will begin to rise even faster. One of the most noticeable recent changes is the amount of extreme events such as hurricane Sandy which have occurred over the last 4 decades and are increasingly causing catastrophic damage; for the year 2012, the Climate Extreme Index showed a record high of 50.16% (<http://www.ncdc.noaa.gov/indicators/>).

Along with the greenhouse effect, we are also being affected by our air quality due to pollutants released into the ground-level ozone. The major air pollutants are, “particle pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead.” (<http://www.epa.gov/air/urbanair/>).

Research on the side effects of breathing particle pollution has concluded, “Exposure to PM <2.5 μm in diameter (PM_{2.5}) over a few hours to weeks can trigger cardiovascular disease–related mortality and nonfatal events; longer-term exposure (eg, a few years) increases the risk for cardiovascular mortality to an even greater extent than exposures over a few days and reduces life expectancy within more highly exposed segments of the population by several months to a few years;” (<http://circ.ahajournals.org/content/121/21/2331.long>).

The burning of fossil fuels releases particle pollutants, and the closer someone lives near a energy plant the worse the air quality. Breathing this air increases health issues and health care costs according to the National Oceanic and Atmospheric Administration, “Poor air quality is responsible in the U.S. for an estimated 50,000 premature deaths each year; costs from air pollution-related illness are estimated at \$150 billion per year.” (http://www.noaawatch.gov/themes/air_quality.php).

~~We measure daily air quality with the AQI (Air Quality Index <http://daq.state.nc.us/monitor/aqi/codeChart.shtml>) range giving levels of acceptable air quality to dangerous, anything over 100 is considered unhealthy.~~

The burning of coal releases nitrous oxide, carbon dioxide and sulfur oxide into our atmosphere, also mercury which is not a greenhouse gas but is dangerous all the same. Coal power plants produce, “approximately one-third of our carbon dioxide (CO₂,

a major contributor to global warming), 40% of our mercury (highly toxic if ingested or inhaled), one-quarter of our nitrogen oxide (an ingredient found in smog) and two-thirds of our sulfur dioxide (a component of acid rain).” (<http://www.ecohearth.com/eco-zine/green-issues/401-the-dangers-of-coal-burning-power-plants-.html>). In 2012, 37.4% of the United States energy was derived from the burning of coal (<http://www.eia.gov/electricity/>), approximately, 1.5 billion Megawatthours according to our government (http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=empt_1_01). Looking at these stats we are ignoring the safety issues that go along with mining, and the destruction of our environment, along with the water run-off that pollutes our drinking water.

Natural gas compared to coal is practically a green energy, but it's not, it is considered a fossil fuel and brings it's own problems. In 2012, 30.4% of our energy was derived from natural gas. Natural gas is a great source of energy and is abundant to us. Natural gas is essentially methane (CH₄), which is one of the greenhouse gases, and of the 5 known gases is the most dangerous, “Pound for pound, the comparative impact of CH₄ on climate change is over 20 times greater than CO₂ over a 100-year period.” (<http://epa.gov/climatechange/ghgemissions/gases/ch4.html>). Another area of natural gas pollution is how it is mined. More and more petroleum and natural gas are being mined using hydraulic fracturing and fracking. Using water at very high pressure, it is used to break rocks to get to the gas. Not only does this release more methane but it also has the result of polluting water (<http://science.howstuffworks.com/environmental/energy/natural-gas-energy.htm>).

Unlike coal and natural gas, nuclear power plants do not release pollutants into our atmosphere. It does however release water vapor which is actually the number 1 cause of the greenhouse gas. But worse, “A typical nuclear power plant generates 20 metric tons of radioactive waste annually. This material must be isolated, transported and stored in remote locations for hundreds of years.”

(<http://greenliving.nationalgeographic.com/one-better-environment-coal-nuclear-20469.html>). The even bigger issue is the safety of our plants, the material that they contain, the security that is or is not in place, and the risk they impose when a natural disaster occurs, such as an earthquake or tsunami which caused the eco-disaster in Japan with their Fukushima plant.

Transitioning towards cleaner energy, or renewable energy, can lower the pollutants in the air we breathe, reduce the amount of greenhouse gases in our atmosphere, and reduce the dangers of mining and nuclear energy. In 2012 the United States used approximately 13.2% renewable energy

http://en.wikipedia.org/wiki/Renewable_energy_in_the_United_States. President Obama would like us to achieve 80% by the year 2035, which gives us just over 20 years to achieve this. Currently Idaho is the only state at 84.2% renewable energy production which has achieved this goal, with Washington and Oregon not far behind at 77.2% and 65.0% respectively

(http://www.nrel.gov/tech_deployment/state_local_activities/rankings_by_total_generation.html).

Many states are offering incentives to install solar panels, creating more and more wind farms. Continuing the amount of wind farms and extending them to off shore

larger turbines. There have been recent inventions that are improving the amount of energy a solar panel can release combining the rays and heat to bring up the older panels that released 20% of energy gathered, to closer to 40 and 50%, doubling the renewable energy instantly. Not only that, but implementing creative ways to use solar, such as solar highways. A company has been testing the possibility of using specialized hard glass that has smart solar receptacles that can be used in parking lots or highways. Homes and businesses could essentially draw power from the streets or highway that is right outside their doors. Using the calculations on the Solar Roadways website (<http://solarroadways.com/numbers.shtml>) they estimate we can get approximately 13,961 Billion Kilowatt-hours of energy in a year, and in 2009 we used only 3,741 Billion Kilowatt-hours. We could essentially sell all the extra energy to other countries or reduce the amount of roads to reduce costs. The country needs to get behind these programs like we got behind the space race in the 60's. There are solutions to the problem and we need to find ways to make them happen.

Works Cited

Air Quality. United States Department of Commerce, National Oceanic and Atmospheric Administration. 1 May 2006. Web. 4 May 2013.

Arndt, Deke. *Global Climate Change Indicators*. National Oceanic and Atmospheric Administration, National Climatic Data Center. Web. 5 May 2013.

Brinson, Linda C. *Is Natural Gas A Good Source Of Energy?* How Stuff Works. Web. 5 May 2013.

Brook RD, Rajagopalan S, Pope CA 3rd, Brook JR, Bhatnagar A, Diez-Roux AV, Holguin F, Hong Y, Luepker RV, Mittleman MA, Peters A, Siscovick D, Smith SC Jr, Whitsel L, Kaufman JD; on behalf of the American Heart Association Council on Epidemiology and Prevention, Council on the Kidney in Cardiovascular Disease, and Council on Nutrition, Physical Activity and Metabolism. *Particulate matter air pollution and cardiovascular disease: an update to the scientific statement from the American Heart Association*. *Circulation*. 2010;121:2331–2378. Web. 4 May 2013.

Colley, Julie. *The Dangers of Coal-Burning Power Plants Are Much Worse Than You Think*. Ecohearth, 20 Nov 2012. Web. 4 May 2013.

Electric Power Monthly. U.S. Energy Information Administration, Independent Statistics & Analysis. Web. 5 May 2013.

Electricity. U.S. Energy Information Administration, Independent Statistics & Analysis. Homepage. Web. 5 May 2013.

Jackson, Randal and Jenkins, Amber. *Global Climate Change: Causes*. National Aeronautics and Space Administration, 27 Feb 2013. Web. 5 May 2013.

Matthews, Mike. Demand Media. *Which One Is Better For The Environment: Coal Or Nuclear?* National Geographic: Green Living. Web. 4 May 2013.

The Numbers: How Much Electricity Can We Really Produce? Solar Roadways. Web. 4 May 2013.

Overview of Greenhouse Gases: Methane Emissions. United States Environmental Protection Agency. 13 June 2012. Web. 4 May 2013.

Renewable Energy In The United States. Wikipedia. Web. 6 May 2013.

Six Common Air Pollutants. U.S. Environmental Protection Agency. 20 April 2012. Web. 5 May 2013.

State Rankings By Total Renewable Energy Generation. National Renewable Energy Laboratory. Web. 3 May 2013.