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Forum: Executive Board 2

Issue: The deterioration of non-renewable energy sources and the effect this has on energy prices, such as an oil-price spike.

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Introduction

Energy sources that will run out or won't be replenished are called non-renewable energy sources. One of these sources is fossil fuels. Three of the main fossil fuels are coal, petroleum and natural gas. These energy sources are a major source of power for many of the industries however, there are many downsides, including their negative externalities on the environment and the fact they are in limited supply.

Definition of Key Terms

Non-renewable energy sources: sources that will run out or won't be replenished

Inelastic demand: the responsiveness of the quantity of a good demanded to changes in its price is relatively small.

Background Information

The main type of fossil fuel is coal, which comes from the fossils of plants that have died 100-400 million years ago. Coal can be derived by surface mining which is cheaper than underground mining but leaves permanent remnants on the environment. Coal has the highest carbon level of all fossil fuels, thus, produces a higher amount of greenhouse gas. Oil (petroleum) is a fossil fuel formed from the remains of sea plants and animals that died millions of years ago. Once refined at oil refineries, oil can be used to make products such as gasoline, diesel and jet fuel. Natural gas is a non-renewable fossil fuel formed from the remains of sea plants and animals that died 300-400 million years ago. Approximately 90% of natural gas is composed of methane, but it also contains other gases. While natural gas is considered a non-renewable energy source, landfill gas is a renewable source of methane, as it comes from decaying rubbish. Nuclear energy comes from the nucleus of atoms and is released by nuclear fusion or nuclear fission. Nuclear plants use nuclear fission of a radioactive element called uranium to generate electricity.

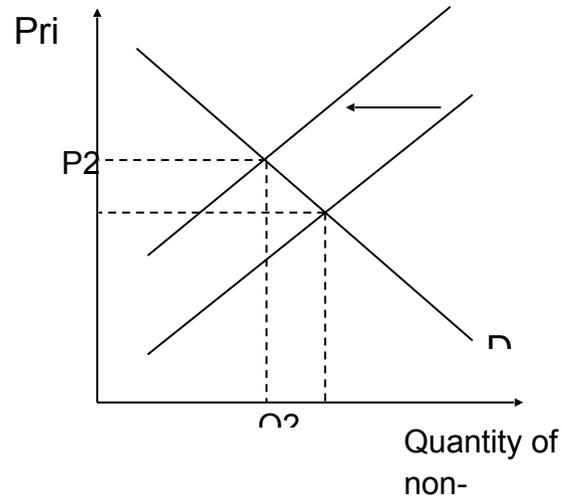
According to Edward Rubin, a professor of environmental engineering and public policy at Carnegie Mellon University in Pittsburgh. "Fossil fuels currently supply roughly 80 to 85 percent of the world's energy", "They are critically important for everything we do and value as individuals and as a society all of which need a source of energy."

Coal is cheap and abundant but releases a lot of pollutants when burned. Petroleum, or crude oil, is harder to find and is typically a bit cleaner-burning and, unlike coal, it can be pumped through pipelines and easily refined into fuels like gasoline or kerosene. Natural gas is also relatively inexpensive and less polluting than coal or crude oil (Tom Metcalfe, NBC news, 2019).



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Figure 1:



As non-renewable energy sources deteriorate, the supply of these resources decrease, shifting supply curve left from S1 to S2. This causes an increase in price level from P1 to P2. The demand of these non-renewable energy sources are demand inelastic, thus even with an increase in price, consumers continue to demand the product.

Timeline of Major Events

200,000 BC	Fire is used as a means for energy.
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500 BC	Solar power has now become in use, particularly within the Greeks.
200 BC	Coal mining has emerged in China.
644 AD	The first windmill was produced and has started to work in Iran
1700	Geothermal power has become in use in order to heat water for cooking.
1868	The first modern solar power plant was constructed.
1885	First petrol powered car was constructed.
1939	Nuclear power (creating energy through nuclear fission) was discovered in Germany.
1945	First atomic bomb created.
1974	Photovoltaic cells were developed.
1986	Nuclear meltdown in Ukraine.
2003	World's biggest power cut in the US.

Major Countries and Organizations Involved

There are several non-profit organizations (NGOs) working to lower the uses of non-renewable resources and fight for a cleaner environment. These include, but are not limited to the following:

International Union for Conservation of Nature (IUCN): It is a UN-based organization and includes many of the member states. They collect data through experts and aim to take global authority over natural preservation and safety.



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The Nature Conservancy: They are the world's largest NGO aiming for natural conservation and protection. They work to protect habitats as well as natural resources.

The Sierra Club Foundation: They focus mainly on protecting wildlife, conserving habitats in parks and other touristic areas.

Natural Resources Defense Council (NRDC): They are a legal entity that aim to protect natural resource depletion and their over and improper use by taking legal action towards that don't. They employ many lawyers and scientists.

Indigenous Environmental Network: This NGO aims to protect homelands from environmental degradation and destruction. They advocate specific policy changes and aim to create sustainable differences. They do this by fighting for economic justice.

Possible Solutions

- Promote usage of renewable energy resources
- Implement price ceilings and floors on energy prices
- Add taxation on the usage of non-renewable resources
- Promote the provision of subsidies to renewable resources users and generators
- Create legislation and rules on the limits of non-renewable energy usage
- Decrease dependence on non-renewable energy resources
- Subsidize energy prices if prices rise over a certain level.

Useful Links For Further Research

- http://ieg.worldbankgroup.org/sites/default/files/Data/reports/ap_naturaldegradation_0.pdf
- <https://www.theworldcounts.com/stories/Depletion-of-Natural-Resources>
- <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Natural-Resource-Depletion-Habit-Formation-and-Sustainable-Fiscal-Policy-Lessons-from-Gabon-19816>
- <https://www.mckinsey.com/industries/oil-and-gas/our-insights/lower-oil-prices-but-more-renewables-whats-going-on>
- <https://www.sciencedirect.com/science/article/pii/S0301421513008392>
- <https://www.ucsus.org/resources/environmental-impacts-renewable-energy-technologies>
- <https://www.uwsp.edu/cnr-ap/KEEP/nres635/Pages/Unit2/Section-B-Comparing-Renewable-and-Non-Renewable-Energy-Costs.aspx>
- <https://www.renewableenergyworld.com/2008/05/12/the-true-cost-of-fossil-fuels-52359/#gref>

Bibliography



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- Siegrist, Claire. “10 Nonprofits Working To Protect The Natural Areas You Love.” *10 Nonprofits Working To Protect The Natural Areas You Love*, www.theoutbound.com/claire-siegrist/10-nonprofits-working-to-protect-the-natural-areas-you-love.
- “About.” *IUCN*, 19 Feb. 2020, www.iucn.org/about.
- “Energy Sources through Time – Timeline.” *Science Learning Hub*, www.sciencelearn.org.nz/resources/1636-energy-sources-through-time-timeline.
- Amadeo, Kimberly. “People Don't Buy More of These Strange Things Even When Prices Drop.” *The Balance, The Balance*, 4 Feb. 2020, www.thebalance.com/inelastic-demand-definition-formula-curve-examples-3305935.
- Metcalfe, Tom. “What Are Fossil Fuels?” *NBCNews.com*, NBCUniversal News Group, 17 Mar. 2019, www.nbcnews.com/mach/science/what-are-fossil-fuels-ncna983826.
- National Geographic Society. “Non-Renewable Energy.” National Geographic Society, 14 Feb. 2013, www.nationalgeographic.org/encyclopedia/non-renewable-energy/.
- “Non-Renewable Energy.” Non-Renewable Energy - Knowledge Bank - Solar Schools, www.solarschools.net/knowledge-bank/non-renewable-energy.
- “U.S. Energy Information Administration - EIA - Independent Statistics and Analysis.” *Energy Explained - U.S. Energy Information Administration (EIA)*, www.eia.gov/energyexplained/.