**Forum:** Environmental Committee

**Issue:** Adopting usable energy from replenishable resources

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**Positions:** Presidents of the Environmental Committee

**Introduction**

Energy is a quintessential element of our everyday lives. Since early man gained control of fire over 1.7 million years ago, we have found many methods to produce energy for our daily tasks efficiently. However, we have yet to discover the perfect energy source. Not every energy source is renewable, nor is every energy source eco-friendly. Ever since the economic boom after the Second World War, pollution has persisted as a problem due to our technological advances demanding more and more energy (Berkeley.edu).

Climate change in the status quo has moved to the spearhead of the foreign policies of nations as the effects have surfaced as a pressing matter. Despite certain controversies, there are undeniable truths: one, greenhouse gas emissions have increased drastically (EPA); second, ground temperatures have been increasing at an alarming rate (NASA); third, environmental issues have impacted the economies of many nations in the world especially those that are developing (IMF). Acknowledging the severe impacts of climate change, changes to energy sources and production methods have been made to help reduce the dependency on non-renewable energy sources. Other sources of energy including solar energy, wind energy, geothermal energy, hydropower, and such sources of renewable energy sources have been used to phase out nonrenewable sources as they have demonstrated capabilities to reduce pollution.

**Definition of Key Terms**

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| Renewable Energy  | Energy from a source that is not depleted when used, such as wind or solar power. |
| Solar Power | The conversion of energy from sunlight into electricity, either directly using photovoltaics (used in solar panels) or indirectly using concentrated solar power. |
| Wind Power | The use of wind energy to generate useful work. Historically, wind power would be used in windmills, sails, etc., but nowadays it is mostly used to generate electricity. |
| Hydropower | The use of falling or fast-running water to produce electricity or to power machines, now principally used for hydroelectric power generation. |
| Biomass | Matter from recently living (but now dead) organisms that are used for bioenergy production, for example, wood, energy crops, straw, etc. |
| Energy Efficiency | The use of less energy to perform the same task or produce the same result. |
| MEDC | More Economically Developed Country - this would be a developed rich country, and would be measured on development, quality of life, and the standards of living.  |
| LEDC | Less Economically Developed Country -This would be a developing poor country. This would refer to the wealth of a country.  |
| Nuclear Energy | Nuclear energy would be energy released during fission or fusion of atoms; it is completely sustainable but not without its risks.  |

**Background**

**General Situation**

 Despite how nice renewable energy sources are – they’re cleaner and available in every country (UN) – it may be problematic for some countries to implement them. Cost is probably the most obvious obstacle in the way of renewable energy’s progression. Even though their fuel (wind, sunlight, water, etc.) are free, setting up solar panels and wind turbines costs significantly more than setting up natural gas plants (Union of Concerned Scientists). Said power sources also take up a lot more space than traditional non-renewable energy sources, and renewable energy has a significant disadvantage economically in comparison to fossil fuels (greenpeace.org).

**Fossil Fuel Dependency**

Though many countries are taking action and transitioning from unsustainable energy sources to more clean ones, some countries have become more reliant on fossil fuels, especially those with developing economies and nearby oil reserves, such as Singapore and India (worldatlas.com). The transition from fossil fuels to renewable energy will be more jarring for these countries because of their dependence on unsustainable energy sources.

**Energy Storage**

Optimizing green energy storage is essential to the transition from nonrenewable energy to cleaner types of energy. Allowing energy storage systems to unfold will help create a greener power grid

**Key Parties Involved:**

**United States:**

The United States is implementing new sources of renewable and clean energy, including nuclear. An increased budget has also been allocated for the energy transition from traditional sources of energy such as oil, coal, fossil fuels, and such to clean energy sources (NPR). The United States has reported, and from studies, it has been shown that the United States has the capacity to utilize existing resources for a decreasing amount of no­n-renewable energy. The current statistics show­ around 13–20%(CSS) of renewables currently utilized. With the United States integrating clean energy sources, it would set a great example of how it can be accomplished and inspire others to take in similar impacts on other member states as it is a P5 nation. This would demonstrate the capabilities that any nation could possess in implementing energy from replenishable resources.

**Russian Federation:**

The Russian Federation is taking a cautious and rather conservative approach. The country currently has the power and capabilities to implement sources of renewable energy, such as wind, solar, and hydro; however, it is currently relying on its fossil fuel reserves, mainly consisting of oil and natural gases, and using them as a source of economic income (Earth). Russia has taken minor or baby steps to move into renewable energy and set targets for renewable energy as a source to power the country; on the contrary, the main restrictive factor against Russia’s step into clean energy would be the revenue from exports, around 80%. There are also geopolitical considerations that have caused an increase in and growing demand for self-sufficiency in energy. Without completely neglecting the possibility of a change in stance on energy from replenishable resources due to global pressure, climate change persists as an issue (IEA). Under the circumstances, Russia’s policies aim to address the need to introduce an increase in clean energy and to replace fossil fuels, which would set an example for other nations dependent on oil exports that it could be accomplished on a large scale. Developments in technology during this process could not be neglected; if there is an increase, it could benefit other nations wishing to also implement clean energy as their primary source.

**Japan:**

Japan has increased its activity and presence by increasing the amount of renewable energy sources in the past few years. It has taken the FIT system into account to help accomplish the goal of increasing the percentage of renewable energy in its energy production (International Comparative Legal Guide). The country is focusing on solar, wind, nuclear, and hydroelectric power. Japan’s increase in these sources of energy also helps and falls with its desire to increase its sources of energy and the ability to produce energy. This is highly emphasized by the events of the Fukushima nuclear disaster in 2011 (METI), which caused changes to its policies on renewable energy. The government also admits that increasing the amount of energy comes at a high cost, thus introducing subsidies and incentives for the private sector to provide solutions to the public. Japan has had problems with integrating clean energy since the Fukushima nuclear disaster. Recovery from this event could demonstrate to other nations attempting to integrate clean energy that it is possible and very realistic, even if natural resources are limited. This would prove a milestone in the case that this sparks an increase in renewable energy if such impacts persist.

**Nigeria:**

Nigeria has demonstrated plans to increase the amount of renewable energy that is being utilized. With all member states, there is a need to diversify sources of energy and reduce reliance on fossil fuels; the same is true of Nigeria, which is especially important as the 6th largest exporter of fossil fuels in the world. The Nigerian government has activated projects to increase sources of clean energy; examples include the Rural Electrification Agency’s Solar Power Naijia Program (NEP), the Renewable Energy Master Plan (IEA), and such projects, all aiming to stimulate the development and adoption of energy from replenishable resources, including solar, wind, and hydroelectric power. Nigeria’s approach regarding the subject of renewables would demonstrate a shift towards a more sustainable path. Nigeria’s position as a Less Economically Developed Country (LEDC) (Felming, BioSidmartin) would also help to demonstrate to others that phasing away from fossil fuels into clean energy would be possible despite its low status in the economic world.

**Timeline of Events:**

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| **Time of the Event** | **Description of the Event** |
| **September 30, 1882** | **Construction of the First Source of Sustainable Energy**The first ever sight of energy from a replenishable source, hydroelectricity, was demonstrated on this day through the Vulcan Street plant. This invention came with Edison creating low-resistance generators to power low-resistance light bulbs; the hydro-power generator was a successor to steam-powered plants, which turned out to have a high operating cost. After the success of this plant, hydroelectricity was widely supported and pushed for in North America. 50 projects were announced; then, at the end of the century, 40% of total electricity in the United States had to be credited to hydropower. (Vulcan Street Plant) |
| **1970s** | **1970s Energy Crisis** In the early 1970s, fuel consumption around the world rose at an alarming rate. In response to this growth at a spurting rate, the Organization of Arab Petroleum Countries (OAPEC) had decreased amounts of exported oil to western countries, causing an energy crisis. The prices of oil in western countries remained spiked, with one of the greatest shortages of all time. This fuel shortage also damaged the car manufacturing industry in the United States, and there was a trend toward relying on and purchasing Japanese cars due to lower fuel consumption. In European countries, there were restrictions placed on traveling on vehicles that predominately relied on gas, as well as heating in houses. In 1974, the oil ban was lifted; however, prices still stayed high, and policies were passed on resorting to other sources of energy until the mid-eighties, after fuel prices collapsed. (1970s Energy Crisis: Causes, Effects, OAPEC) |
| **Dec. 1–Dec. 10, 1997** | **COP 3** The aim of COP 3 was to ensure that industrialized nations at the time could go through a transition to limit and reduce greenhouse gas emissions while aligning with individual targets (Anup, Global Issues). The results of this conference laid the groundwork for the following conferences, including COP 6 Part 2, COP 7, and COP 11/MOP 1. COP3 By binding the Kyoto Protocol with multiple parties, it has decreased carbon dioxide emissions, which are still proceeding today, and the number of those that have been ratified has increased. However, during this process, the US opposed the Kyoto Protocol as there were not going to be ramifications against India and China as they would increase their emissions, despite ignoring their per capita emissions. This treaty was not passed without opposition from superpowers (Laming, Good Energy); however, it still benefits policies to attack climate change. |
| **2008** |  **September 15, 2008, Financial Crisis** The Global Financial Crisis was the biggest economic crisis in scale and in detrimental effects since the Great Depression of 1929 (Convery, Intereconomics). This financial crisis caused severe drops in greenhouse gas emissions, causing a wave of thought regarding whether economic growth can be at par with greenhouse gas emissions. However, the trend of greenhouse gas emissions decreasing could not be sustained with the recovery of the economy. Events such as the Global Financial Crisis do not benefit sustainable development and should not be seen as a beneficiary trend to implement clean energy sources; on the contrary, GFC made industries realize how much it takes for the energy sector to run, and a balance could help implement more sources of sustainable energy and help decrease greenhouse gas emissions. |
| **2015**  | **COP 21**Since COP3, COP 21 has become one of the largest and most influential events about climate change, with proper action taken. COP 21 addresses factors of legally binding climate change policies, financial aid to developing countries, and demonstrated the ability for action to have been taken (France Diplomacy). The Paris Agreement details the increasing demand for renewable energy sources as well as the increasing surface temperatures. (Simeonova, UN ECE) It details methods to implement energy sources that are efficient on a grand scale and renewable as well. COP 21 also addresses the requirement of permanent institutions to address and discover new and clean forms of energy. Also addressing trends in INDC emissions and regarding emissions. |

**Key Previous Attempt to Resolve the Issue**

**Spanish Solar Bubble**

Failed attempts at largely introducing renewable energy as a usable replacement include the failure of the Spain Solar Bubble from 2008–12. The Spanish government utilized an enormous amount of funding under the FIT system to benefit and stimulate the development of solar energy (Rio, Mir-Artigues). This was not only to provide energy but also to expand the capabilities of solar energy development. The policy that the government had introduced was not able to sustain itself and was not able to keep up in the solar energy sector. It was largely unsustainable due to the failure to account for the costs, which skyrocketed. The system was not flexible at all, causing unforeseen impacts on the currency system at the time, with the euro outweighing the USD. The cost also dropped so that solar energy production systems would be cheaper in USD, causing an imbalance in the market (Rio, Mir-Artigues). This demonstrated the effects of poor planning as well as policies that ultimately caused a failure in what could have been a beneficial and effective initiative. The Spanish Solar Bubble incident also demonstrated to those involved in renewable energy that it is necessary for third-party organizations to monitor and pace such initiatives.

**Possible Solutions**

**An Immediate Change:**

“Don’t be afraid to give up the good to go for the great"—John D. Rockefeller So put, change is inevitable as time moves on. Rockefeller made his fortune based on the oil industry and was the largest stakeholder in the Standard Oil Company (Wikipedia). There is no irony in the fact that he made his fortune based on oil, as the same type of revolution could be accomplished with renewable energy. Rockefeller made his mark and fortune based on the technique of a monopoly, which proved extremely efficient and effective in producing oil. A similar approach could be taken to create opportunities for an increase in renewable energy sources. Rockefeller’s approach included asserting control over the entire process of oil refining. Member states can take actions like this when implementing an action plan (History). However, without a source of funding, there would be no action taken. Thus, a solution would have to account for all those factors.

From past cases, such as the Spanish Solar Bubble, it can be discovered that there wasn’t enough control over the process and the prices; even with lots of funding, there was no control. From my observations, MEDCs (more economically developed countries) have the capability to implement clean energy without support. However, a more pressing matter would be the regulation of exports of fossil fuels and the mitigation of the economic effects. If action has been taken to regulate exports, how can there be the certainty that there won’t be another economic or financial crisis such as the one in 2008. These effects can be mitigated by the utilization of organizations such as the OEPC and the IMF, then adjusting the degree of taxation as necessary to maintain a balance. The tax revenue should be utilized to benefit LEDCs’ installation of renewable energy sources, while the allocation should continue to be monitored with caution.

**Ensuring a Smooth Transition Economically**

Green energy is heavily economically disadvantaged – fossil fuel and oil-using energy corporations such as Chevron and Exxon Mobil hold a strong monopoly in the energy market (greenpeace.com). These non-sustainable companies made a combined profit of $200 billion in 2022, and they are forecasted to reach $158 billion by the end of this year (reuters.com). Green energy only takes up 26% of the energy economy (knowablemagazine.com).

However, the price of renewable energy has been steadily decreasing since about 2010. As of 2023, solar power is a third cheaper per megawatt-hour than coal (The Guardian). This steady decline in price means that sustainable energy sources are available as an economically viable choice for more countries, especially those with subpar economies. The cheaper price means that it will be easier for them to install various new methods of energy generation. Take South Africa, a great example of what a smooth transition from fossil fuels to renewable energy should look like. A lot of the countries’ coal power plants are scheduled for decommission in the next two decades, which means that many jobs will be lost (as well as a lot of energy that could’ve been generated). This means that if the coal plants are replaced by sustainable energy over these years, South Africa could ideally have 70 to 80 percent of its energy generated by renewables instead of its current 10% (knowablemagazine.com). To make the process of moving into renewable energy easier a monitoring agency could be implemented to make sure the delegation of funding to compensate for the economic situation would be beneficiary.

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