



Committee: The Special Conference on Sustainable Development Goals

Question of: Affordable and Clean Energy (SDG7)

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Introduction:

Affordable and clean energy is one of the most important goals of sustainable development. The United Nations Development Programme reports that between 1990 and 2010, the number of people with access to electricity increased by 1.7 billion. As the population with access to electricity grows, so does the demand for cheap energy. 3 billion people (40% of the world's population), rely on polluting fuels for cooking. Energy is also the most substantial contributor to climate change, with 60% of global greenhouse emissions being energy related. If we adopt stronger efficiency standards, we could reduce the amount of energy consumed by buildings and industries by 14%. Polluting energy leads to an increase in greenhouse gas emissions which in turn speeds up the rate of climate change. This leads to an increase in global temperatures which has numerous detrimental effects on the planet. These include the destruction of habitats and thus the extinction of species, as well as sea levels rising which leads to flooding in low-lying countries. If energy is not also affordable, poorer countries will struggle to adhere to these new legislations. If they do abide by expensive energy, this can lead to further issues with their economy and could cripple them.

According to the Michigan State University Extension, 1 in 5 people lack access to modern electricity. The UN has previously stressed the need for energy, stating that "Electricity enables children to study after dark. It enables water to be pumped for crops, and foods and medicines to be refrigerated. Modern fuels for cooking and heating relieve women from the time-consuming drudgery and danger of traveling long distances to gather wood."

The SDG7 goal for affordable and clean energy has been define as "ensuring universal access to affordable electricity by 2030 mean[ing] investing in clean energy sources such as solar, wind and thermal." according the United Nations Development Programme's website and with 4 more deviations with similar targets set out.

The Issue:

Ensuring Universal Access

Target 7.1 of the SG7 as stated by the UN Environment website is to “ensure universal access to affordable, reliable and modern energy services.” by 2030. Though the achievement of finding cheap and renewable energy should be commended, it is not entirely beneficial if the whole world does not have access to it. The countries that use the least electricity per capita according to the Telegraph in 2016 are also some of the poorest countries in the world, such as Haiti and Ethiopia. Vast numbers of people in these LICs and others are not connected to an electricity grid, and so rely on primary energy sources such as animal dung. While this form of energy is cheap and plentiful, it is not always convenient or reliable. This is because these countries are either relying on animals or fuel wood, which are dependent on the number of animals one has or the weather respectively. According to the International Energy Agency women will save one hour per day when they do not need to collect fuelwood, thus freeing up a workforce equivalent to 80 million people. Ensuring universal access to highly sophisticated forms of clean energy is important so poorer countries have the ability to dedicate more time to developing their economy and education rather than trying to make basic resources.

While it is important for LICs to have access to these sources of energy, it is also very important that HICs have equal access to these clean renewable sources. The countries that emit the greatest amount of CO₂ per capita according to the same Telegraph report are Qatar in first place, with Latvia, Bahrain and the United Arab Emirates not far behind. These carbon dioxide emissions are a result of non-renewable forms of energy such as coal, natural gas and oil. If the United Nations wishes to create “modern” energy services, a key part of this is creating renewable forms of energy that are friendly to the planet

Some countries not excluding HICs are dependent on others for importing fuel. These prices are set by exporting countries. The countries that exports the most petroleum gas are Qatar, Norway and the United States, while those who export the most crude oil are Saudi Arabia, Russia, Iraq and Canada according to the World’s Top Exports website from 2018 (Saudi Arabia account for 15.9% of total crude oil exports). Not only are both of these sources fossil fuels which increase the rate of global warming, but the high rates at which exports are often set at cripple other countries’ economy. If the UN wishes to implement affordable energy services, we must also tackle the issue of the price of exported oil between member states.

Increasing Amount of Renewable Energy

Target 7.2 of the SG7 is to “by 2030, increase substantially the share of renewable energy in the global energy mix.” according to the UN Environment website. The use of renewable energy has significantly increased, with the amount of renewable energy used in transport activities almost tripling in 10 years to become 7.1% in 2016, according Eurostar. However, 7.1% of all energy in transport activities is still relatively low. Likewise, in 2016 17% of the energy consumed in the EU was renewable, which is on track for the 2020 target set in 2014 by the European Commission for 20%.

According to the International Renewable Energy Agency in 2016, the regions that produced the most renewable energy were Europe, North America and Asia. Overall the most popular form of renewable energy was hydroelectricity with a world total of 4049 TWh (terawatt hours) being generated that year. The least popular form was marine related electricity. Asia accounted for the most growth in renewable electricity in 2016 with 182 more TWh being generated than in 2015. Central America and the Caribbean released the least, with only 40 TWh being produced that year. This is important as big countries such as China and India have formerly been large offenders on producing large amounts of carbon dioxide. According to a Guardian article in December 2017 China was the world’s biggest emitter of greenhouse gases, but after a new trading system which limits the amount of carbon dioxide power plants can emit China is now widely seen as a leading country in developing renewable energy. However, in 2018 a Google whistle-blower accused Google of working with China to create a search engine that would give potential false air quality informal to the public. If the United Nations wishes to ensure that as much renewable energy as being declared by member states is produced, then we should also be vigilant as to how we monitor countries to ensure they abide by these rules without infringing on sovereignty.

Improving Energy Efficiency

Target 7.3 of SG7 is to “double the global rate of improvement in energy efficiency” by 2030. Some examples of this technology are light emitting diodes (also known as LEDs). In 2014, the Nobel Physics Prize was awarded to three researches who helped to develop these LEDs, as replacing basic bulbs with them will lead to a vast decline in electrical requirements for lighting. Thus, energy efficiency afflicts the population’s utility bill, but also the rate at which things can be done and a property’s value. In Britain, the cost of electricity specifically with lighting has declined by a factor of 3,000, largely due to efficiency improvements. This is key to helping other member states who are low income countries to provide sufficient energy for everyone in their population. The impacts of having sufficient lighting are vast. These include the ability to work after dark, which increases the level of education. Higher levels of education lead to more sector shifts which results in a higher qualified work

force which has a wide spread across the different sectors, especially in the service and tertiary ones. This leads to economic growth, which in turn leads to a more generally developed country.

However, improving energy efficiency does not reduce carbon emissions. In fact, lower energy costs often lead to increased consumption. This might result in more detrimental effects to our environment, which SG7 is currently trying to tackle. If member states wish to achieve the set goals, it is pivotal to ensure that the efficient energy is also a clean source.

[Enhancing International Cooperation to Facilitate Access to Research and Technology](#)

Target 7.a of SG7 as stated by UN Environment is “by 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and clearer fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.” In order to develop the technologies required for affordable but also efficient energy, as well as energy that each country can develop themselves so as to avoid export costs, member states must work together to share the resources required. One of the main issues with renewable energy is that it is not as efficient as fossil fuels, as it is often weather-dependent. In order to minimise this disadvantage, member states should develop research into advancing renewable energy sources before 2030. As there is a time limit set and these requirements are relatively substantial, it can be ascertained that international cooperation is necessary. However there may be some conflicts with regards to how much each member state can offer. While countries such as China have invested vast sums of money into funding research (reported that the country’s total investment in renewable records at \$126.6), it is not feasible to assume other member states with lower GDPs can afford to do the same. This raises the question of which countries have the best resources and researches to create something to be accessed by everyone, as certain member states struggle with economic and/or political stability that do not allow them to contribute.

It should also be noted that some member states may not be happy with parts of the scheme, as they would not benefit from them financially. Member states such as Saudi Arabia would lose an incredibly important source of national income, as importing oil is their largest export. However according to the head of the Renewable Energy Project Development Office in Saudi Arabia, Saudi is seeking an investment of up to \$7 billion throughout 2018 to build a significant amount of renewable energy capacity, as part of its larger plan to supply 10% of its power demand from renewable sources by 2023.



Expand Infrastructure and Upgrade Technology in Developed Countries

Target 7.b of SG7 is to “by 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.” As the majority of countries who lack suffice amounts of energy are less developed countries, it is important to consider them when trying to create a sustainable world for everyone. Poorly developed countries tend to have weak infrastructure, often owing to armed conflict that results in the destruction of numerous buildings such as Afghanistan. Historical problems also lead to weak infrastructure such as Cambodia, when groups like the Khmer Rouge severely disrupted the country’s development, leaving Cambodia with a weak economy and infrastructure. In member states like Haiti where natural hazards are a serious threat, a vast amount of government funds are dedicated towards rebuilding destroyed facilities and health care for those affected. The total damage of the Haiti 2010 earthquake according to the University of North Carolina was an estimated total of \$7.8 billion. Impacts like this cripples the country’s economy, and leave them unable to afford resources to develop sustainable energy services or to have the required technology to do so.

Landlocked countries also naturally struggle, as they are not located near to the sea which has ports which allows them to trade more easily. Export costs of fuels also tend to be higher as they have to travel further inland. It is also important to ensure that each country is treated in accordance to their respective programmes of support, as some countries may require more aid and the UN cannot be expected to waste its resources on countries who do not greatly need it.

Technology is also an important item to develop, as often times less developed countries’ have very menial means of acquiring energy which can be both damaging to the environment and taxing to the citizens to acquire it.

Key States Involved

China

Previously one of the world’s largest polluters, but is currently considered one of the pioneering countries in creating clean and renewable energy.

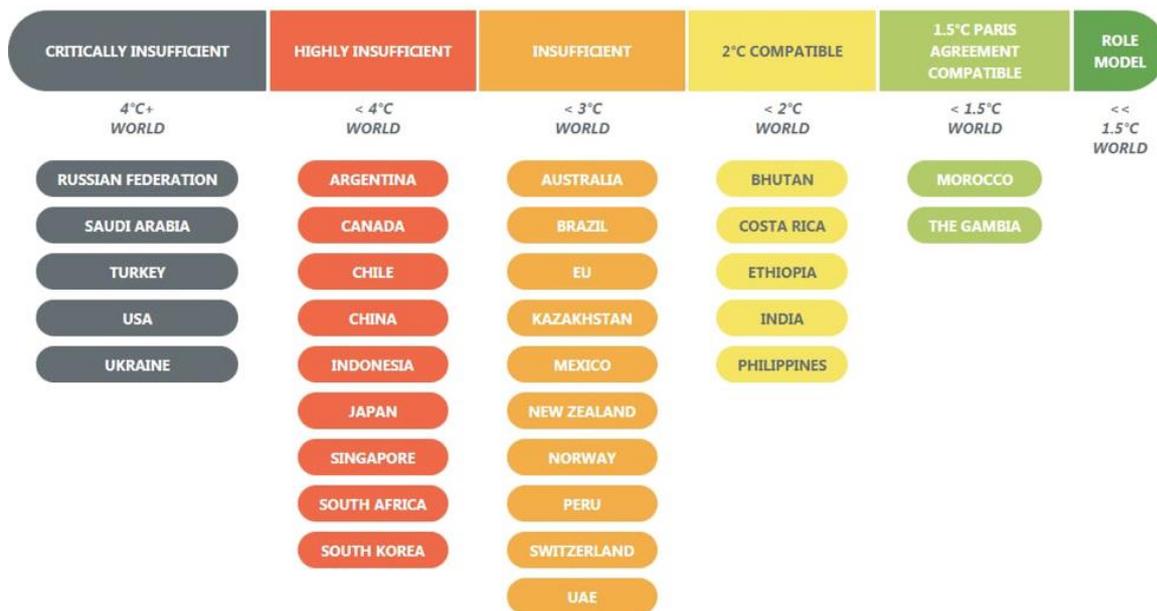
Saudi Arabia

World’s largest exporter of oil, so any forms of renewable energy that would replace this would be problematic.

United States of America

Under Obama’s presidency about 10% of the total US energy consumption was renewable and the country was beginning to shift its focus towards renewable sources of energy. However, President Trump announced in 2017 that the USA would withdraw from the Paris agreement, though as of yet the USA is still bound to the agreement.

Countries Who Are Not Part of the Paris Agreement:



A graphic from the Climate Action Tracker shows the efforts of the world's larger greenhouse gas producers to reduce those emissions in accord with the Paris climate agreement.

Russia, Turkey, Iran, San Marino, and Colombia.

Key Events

Event/Date	Explanation
2014: Nobel Prize in Physics	Award jointly to Isamu Akasaki, Hiroshi Amano and Shuji Nakamura for “the invention of efficient blue light-emitting diodes which has enabled bright and energy-saving white light sources.” Important advance in the development of clean and efficient energy.
January 2015: Significant Job Growth	The International Renewable Energy Agency announced that more than 7.7 million people were employed by the renewable energy industries, showing a significant shift into the investment of renewable energy sources. The Solar Foundation also announced that there are 75% more solar jobs than US coal jobs.
March 2015: Global Clean Energy Investments Reach \$2 Trillion	According to a report released by the United Nations Environment Programme the \$275 billion spent in 2014 on renewable technologies such as wind and solar reversed a two-year dip in investments and thus brought in a record 103 GW of clean-energy power generation. Important to show world interest in renewable energy.
June 2015: Pope Francis releases Encyclical on the Environment	This open letter shapes Catholic teaching globally and advised humanity to “care for our common home” and labelled the root causes of the challenges of our time: climate change and poverty. This letter has had a vast impact on influencing multiple countries to invest in renewable energy sources and reduce their emissions.
December 2015: Paris Agreement	UNFCCC reached agreement to combat climate change with goals to keep global temperature rise well below 2 degrees Celsius, to increase the ability of countries to deal with the impacts of climate change and for rich countries to help poor countries by providing climate finance to adapt to climate change according to the United Nations Climate Change website.

<p>1 January 2016: Sustainable Development Goals</p>	<p>Paris Agreement on climate change entered into force on Sustainable Goal 7 which was focused on Clean and Affordable Energy.</p>
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Previous Attempts to Solve the Issue

The UNFCCC (1992)

Created in 1992 as main forum for debate on international action relating climate change.

Key ideas (as stated by the Committee on Climate Change):

- reducing greenhouse gas emissions
- adapting to climate change
- reporting of national emissions
- financing of climate action in developing countries

Kyoto Protocol (1997)

Set target for 37 industrialised countries to reduce their emissions by average of 5% below 1990 levels. UK committed to 12.5% reduction of greenhouse gas emissions. Overall, the 37 countries reduced global emissions by over 10%.

Developments in LED lighting

Significant advances made in developing light-emitting diodes which allowed for much more efficient blue light, as evidence of Nobel Physics Prize in 2014.

Climate Change Act (2008)

In 2008 UK government set targets to reduce UK greenhouse gas emissions by at least 80% of 1990 levels by 2050. It also establishes framework for the reduction of emissions and establishes preparations for the risks associated with climate change.

Paris Agreement (2015)

160 UNFCCC parties made voluntary pledges to reduce emissions including China who had previously been the world's largest CO2 emitter.

Possible Solutions

- Incentivise Development of Better-Priced Alternatives:

Many of the quality products which can provide sufficient fuel are too expensive without large-scale financing. Targeted policies and interventions such as grant funding should be directed to less developed countries to enable the market.

- Use Mobile Technology

Allows people to buy units of power even if they do not have a bank account or cannot to pay for solar panels upfront. Most people in less developed countries already have a mobile phone and those who do not only require one within a family. Landlocked areas also do not have to pay as much for energy as kerosene does not have to be transported a long distance.

- Establish Community Organisations

Often times communities do not have energy because there are numerous communities spread over a wide perimeter. In order to work out power demand, identify sites to set up power grids and to find the correct people to manage and operate schemes, it is important to set up community organisations to ensure efficiency.

- Advocate for better regulation and more collaboration

Governments should provide support to businesses which make clean energy products that are also affordable in order to incentivise others to join in this practice. Other examples of support could be financial aid through investment.

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