

# Special Conference 2 on International Cooperation

Taking measures to decrease global  
dependency on fossil fuels



<b>Forum:</b>	Special Conference 2 on International Cooperation
<b>Issue:</b>	Taking measures to decrease global dependency on fossil fuels
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## Introduction

Fossil fuels are one of the most important resources of today's society, the global dependency on it increasing day by day. It is used in cars, heating our homes, airplanes, power electricity plants, medicine, cosmetics, plastics, and countless more products used in everyday life. It is used in almost everything we need and our demand for the products is increasing.

The oil market has tremendously increased over the past few years, accelerating the rate at which the supply is running out. Not only is the supply of fossil fuels running out, the environmental effects it has brought about global warming, with an increasing climate change and disastrous effects. This puts our global society in a risky predicament, in which we urgently need to find sustainable alternatives to fossil fuels, for our immediate sake, and for future generations to come.

## Definition of Key Terms

### Fossil fuels

Fossil fuels are fuels created within the earth's crust, over extended periods of time, due to the extreme pressure that fossilized plants, animals and other organisms are subjected to. Fossil fuels include fuels such as coal, oil, and natural gas.

### Global Warming

Global warming refers to the gradual increase in temperature of our planet, and its effect on our ecosystems.



## Greenhouse gases (GHG)

Greenhouse gasses are gasses found in our planets atmosphere, and produced by human industrialization and activity. These gasses trap and reflect radiation.

## Greenhouse effect

The greenhouse effect refers to the increased reflection of thermal energy back to earth. This occurs because the greenhouse gasses absorb and subsequently reflect back thermal energy towards earth, in turn increasing the planets temperature.

## Sustainable energy

“Sustainable energy is created through the use of non-exhaustible resources, which will not compromise the existence of future generations. Thus, many renewable energy sources such as solar or wind power are ideal, as they generate power through means of resources that will exist perpetually, but do not pollute whilst producing power.

## Ozone layer

The ozone layer is a name referring to the cloak of ozone in our atmosphere that surrounds our planet, resting approximately 15-30km above the earth’s surface. It protects earth from ultraviolet radiation, but is however being damaged by extreme pollution.

## Liquefied Natural Gas (LNG)

Liquefied natural gas is in essence natural gas, which has been cooled to decrease it volume, making it easier and more economical to store, transport, and produce energy with.

## General Overview

### Fossil fuels

Fossil fuel is currently the world’s primary energy source, it has fueled global economic development for the past century, however it is a finite source, and the amount left is minimal. Moreover, fossil fuels are the main source of greenhouse gas emissions, creating extreme environmental harm as a consequence of global warming. Fossil fuels are not only highly important in use, it is extremely valuable and very important in geopolitics.

## *Oil*

Oil is the primary resource for transportation; cars, airplanes, ships, all primarily run on oil. Most oil comes from underground reservoirs, and it is pumped up, the original product that it is created from is crude oil, which is then processed into gasoline, petroleum, pesticides and other products. The heavy reliance on oil for transportation creates difficulty in reducing the use in order of protecting the environment. There are two main environmental consequences that pose as a threat when looking at oil use and transport; the combustion of oils causes large amounts of greenhouse gases, however the threat of oil spills are extreme hazards as well. Not only does the use of oils when combusting create greenhouse gases, however the production of it does as well.

Heavier crude oils require high energy levels to process, and hence result in higher emissions and environmental degradation compared to regular oil. As the regular oil found underground is running out, producers are turning to crude oils, increasing the greenhouse gas emissions tremendously.

## *Coal*

Coal remains to be the primary generator of electricity in many countries across the world, like many fossil fuels, the combustion and production of it brings along environmental consequences. The combustion of coal releases toxic air pollutants that contribute to acid rain, such as sulfur dioxide, mercury and nitrogen oxide. Not only is the combustion dangerous to the environment, the mining of the coal often requires the removal of vegetation and soil. The wastes that come from the production in the mines often pollute and damage rivers and streams.

Not only does the production and combustion of coal have environmental consequences, it has been known for the hazards and dangers it brings to the laborers.

## *Natural Gas*

Natural gas is one of the cleaner fossil fuel alternatives, that is commonly used for generating heating and electricity for buildings and in industrial processes. The fuel is mostly transported through pipelines, however recently the transport is increasing in the form of liquids (LNG). This is to meet the increasing demand worldwide for the natural gas.

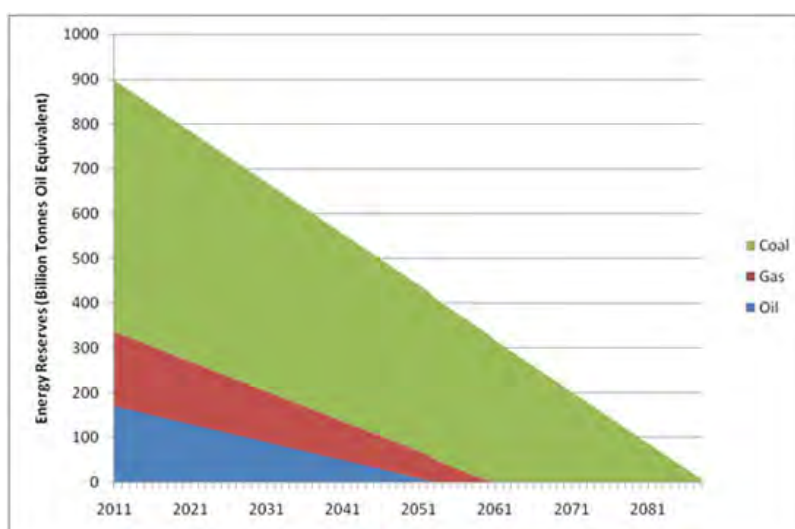
The combustion of natural gas is a lot cleaner when compared to coal and oil, due to close to zero acid rain pollutants. It releases approximately 30% less CO<sub>2</sub> than oil, and 43% less than coal. Natural gas however mostly consists of methane (CH<sub>4</sub>), which is created through decomposing waste in landfills and manure. Methane is a very potent greenhouse gas (20 times CO<sub>2</sub>), and hence natural gas is still considered a harmful fossil fuel.<sup>1</sup>

## Depletion of fossil fuels

Fossil fuels are very old sources of energy, as they originate from decayed plant and animal material over millions of years. In the past 20 centuries, the consumption of fossil fuels has increased immensely, leaving behind a lot of climate impacts and little fossil fuels. Due to the extensive time it takes for the production, once the fossil fuels we have available have been used, there will be none left for a long time. Hence it is said that fossil fuels are finite.

Crude oil reserves are running out at a 4 billion tonnes a year rate, it is therefore expected that by 2052, our oil reservoirs (that are known) will be gone. Gas is one of the fossil fuels that will last a little longer, however with decreasing oil, the dependency on gas will likely increase, and so the gas is expected to run out by 2060. Coal are thought to be sources that will last for another.<sup>2</sup> This data is based on a stable consumption of fossil fuels every year, which does not include the increasing rate.

Due to an increasing population size and an improving standard of living, the demand for fossil fuels keeps increasing. As fossil fuels are running out, the world increases its dependency on the fossil fuels that are still left, and hence these deplete at an accelerated rate. The depletion of fossil fuels is a cumulative accelerated rate, and it is only a matter of time until the world will have no more reservoirs to



<sup>1</sup> "Fossil Fuels." *Fossil Fuels*. N.p., n.d. Web. 15 June 2015. <<http://www.eesi.org/topics/fossil-fuels/description>>.

<sup>2</sup> *Central Intelligence Agency*. Central Intelligence Agency, n.d. Web. 15 June 2015.

<<https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html>>.



satisfy the required amount of fuel.

How long will it take exactly, is a question that is often asked. The graph above displays the amount of energy reserves per fossil fuel, and its depletion rate over the years.

Figure 1 Energy reserves per fossil fuel. Digital image. Ecotricity. N.p., n.d. Web. 19 Sept. 2015. <<https://www.ecotricity.co.uk/our-green-energy/energy-independence/the-end-of-fossil-fuels>>.

It can be seen from the graph that the expected year we run out of fossil fuels will be in 2088, however there are going to be new reserves found, which will extend the mark. The finding of new reserves is much harder, and the results are minimal. Looking at oil, 16/20 of the world's largest oil fields have reached their maximum production level.<sup>3</sup>

### Sustainable Energy

Sustainable energy is one of the options that could act as a solution to the environmental damage the fossil fuels have on our economy. Wind, solar and water energy are examples of widely available energy. Governments are highly recommending the use of sustainable energy, and subsidizing it largely to support this. Apart from the construction of the plant, there is no pollutant emissions that effect air or water, therefore it is considered the best option for replacing fossil fuels.

However, there are many disadvantages of sustainable energy, especially concerning costs and finances. The installment of a plant, whether domestic or government purposed, is high of cost, and only pays out after a couple of years. The subsidies and grants that governments are making costs a lot of money, and has resulted in many countries cutting back on the availability of this.

Moreover, sustainable energy, such as wind, has shown to be an unreliable energy source, on which the demand from developed countries cannot depend. Another issue that often rises when considering sustainable energy is the difficult of storing and transporting the energy. There is a lack of knowledge, development and hence use of sustainable energy, this issue is what stands in the way of replacing fossil fuels.<sup>4</sup>

### Economic market

The oil market is one of the largest trading and valuable markets today, with rising demands, and increasing value of oil. It has caused for some of the richest persona and

<sup>3</sup> "The End Of Fossil Fuels." - *Our Green Energy*. N.p., n.d. Web. 17 June 2015. <<https://www.ecotricity.co.uk/our-green-energy/energy-independence/the-end-of-fossil-fuels>>.

<sup>4</sup> "World Nuclear Association." *Sustainable Energy : Renewable Energy* . N.p., n.d. Web. 21 June 2015. <<http://www.world-nuclear.org/info/Energy-and-Environment/Sustainable-Energy/>>.

countries in today's world. Some of the largest multinational companies work engage in the fossil fuel production business.

Having to decrease the dependency and consumption on fossil fuels will lead to major economic changes, with a large market completely demolished. Many of the countries playing major roles in the oil market are developing countries, generating income from oil primarily.

## Major Parties Involved and Their Views

### United States of America

The USA is leading in the world's petroleum consumption, at an average of 19.05 million barrels per day (2014).<sup>5</sup> Their import and use therefore is the largest contributor to the global warming, and hence could be most influential in decreasing the dependency on fossil fuels in a demand change.

### Russia

Russia is the primary exporter of natural gas to Europe. Their national gas company, Gazprom is the main supplier to almost all European countries, and generates large incomes for the country. The dependency of Europe on Russia for gas supply was visible when the gas was cut off via Ukraine, the European Union reacted to the crisis as it being completely 'unacceptable'.<sup>6</sup>

### Saudi Arabia, Russia, Iran, Iraq, Nigeria

The top five exporters of oil, leading the market with the highest of 8,8 million barrels per day (Saudi Arabia). These are the five main countries who are in charge of and responsible for regulating the oil market.<sup>7</sup> Their supply of oil controls majority of the market, and therefore is of high influence in the dependency on fossil fuels.

### European Union (EU)

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<sup>5</sup> "U.S. Energy Information Administration - EIA - Independent Statistics and Analysis." *How Much Oil Is Consumed in the United States?* EIA, n.d. Web. 10 June 2015. <<http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6>>.

<sup>6</sup> Lea, Robert. "Europe Plunged into Energy Crisis as Russia Cuts off Gas Supply via Ukraine." *Mail Online*. Associated Newspapers, n.d. Web. 15 June 2015. <<http://www.dailymail.co.uk/news/article-1106382/Europe-plunged-energy-crisis-Russia-cuts-gas-supply-Ukraine.html>>.

<sup>7</sup> "List of Countries by Oil Export." *Wikipedia*. Wikimedia Foundation, n.d. Web. 22 June 2015. <[https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_oil\\_exports](https://en.wikipedia.org/wiki/List_of_countries_by_oil_exports)>.



The European Union is one of the main importers of oil, and a highly influential organization for the European countries. These are mostly developed countries, and hence large users of fossil fuels, their influence, politically and economically could lead to a large decrease in dependency on fossil fuels.

### Small Island Developing States (SIDS)

SIDS are very dependent on fossil fuels for electricity and transport, they are considered “energy deficient in conventional energy and have limitless potential for renewable energy,” (Freundel Stuart, Prime Minister Barbados). Economically, this would free up to 30% of the Gross Domestic Product (GDP), and environmentally would benefit as well. Tonga is one of the SIDS which is looking into becoming carbon-free producer of electricity.

### Timeline of Events

Date	Description of event
September, 2000	Millenium Development Goal 7 set
May, 2012	Speech (Ban Ki-moon) on SIDS <sup>8</sup>
2014	SIDS Accelerated Modalities of Action - Conference
June, 2015	2015: Time for global action (UN Campaign) <sup>9</sup>
December, 2015	Paris UN Climate Change Conference <sup>10</sup>

### UN involvement, Relevant Resolutions, Treaties and Events

The United Nations has looked mainly into setting goals for countries to work on and achieve. Such as the Millennium Development Goal 7<sup>11</sup>, to “Integrate the principles of sustainable development into country policies and programs and reverse the loss of

<sup>8</sup> "Reducing Dependence on Fossil Fuels Essential for Sustainable Progress in Small Island Developing States." *UNDP*. N.p., n.d. Web. 22 June 2015. <<http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2012/05/07/reducing-dependence-on-fossil-fuels-essential-for-sustainable-progress-in-small-island-developing-states.html>>.

<sup>9</sup> "United Nations 2015: Time for Global Action." *UN News Center*. UN, n.d. Web. 22 June 2015. <<http://www.un.org/sustainabledevelopment/>>.

<sup>10</sup> "COP21 - United Nations Conference on Climate Change." *COP21 - United Nations Conference on Climate Change*. N.p., n.d. Web. 22 June 2015. <<http://www.cop21.gouv.fr/en>>.

<sup>11</sup> "United Nations Millennium Development Goals." *UN News Center*. UN, n.d. Web. 22 June 2015. <<http://www.un.org/millenniumgoals/environ.shtml>>.





environmental resources.” Another example of this is the upcoming conference on climate change in Paris (COP21), with the aim of combating climate change effectively and boosting the transition towards resilient, low carbon societies and economies.

The conference in 2015 based on renewable energy in SIDS was successful in creating agreements and suggestions to countries on how to set this up.

Moreover, the resolution adopted by the General Assembly on 27<sup>th</sup> July 2012 from the Rio Conference (A/RES/66/288) was also successful in laying out a base for the adoption of sustainable energy forms in all countries. <sup>12</sup>

## Evaluation of Previous Attempts to Resolve the Issue

The numerous resolutions that have been brought out and the conferences that have been held have shown to carry a lot of support amongst nations. However the demand for fossil fuels has not decreased drastically enough for it to have a positive effect on the climate change and global warming effects it has shown to have.

The UN has set numerous goals, on many occasions, however no defining action has been taken to limit the emissions of greenhouse gases, nor to implement wide ranged sustainable energy.

Several countries have shown to have implemented widespread renewable energy infrastructure, such as Denmark, UK, Scotland, Germany and Ireland.<sup>13</sup> However this will not be enough to decrease the global dependency on fossil fuels, and majorly eradicate the use of fossil fuels.

## Possible Solutions

A possible solution would be to focus mainly on the adoption of sustainable energy forms, on a national and household basis. This would require governments to look at the best form of incentives or subsidies for this to be encouraged, without causing economical stress.

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<sup>12</sup> "Energy .. Sustainable Development Knowledge Platform." *Energy .. Sustainable Development Knowledge Platform*. N.p., n.d. Web. 22 June 2015. <<https://sustainabledevelopment.un.org/topics/energy/decisions>>.

<sup>13</sup> "5 Countries Leading the Way Toward 100% Renewable Energy." *EcoWatch*. N.p., 09 Jan. 2015. Web. 22 June 2015. <<http://ecowatch.com/2015/01/09/countries-leading-way-renewable-energy/>>.



Moreover, a complete report and research to the dependency of the world on fossil fuels and the future of fossil fuels would assist in making decisions and looking at how to handle the situation.

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