

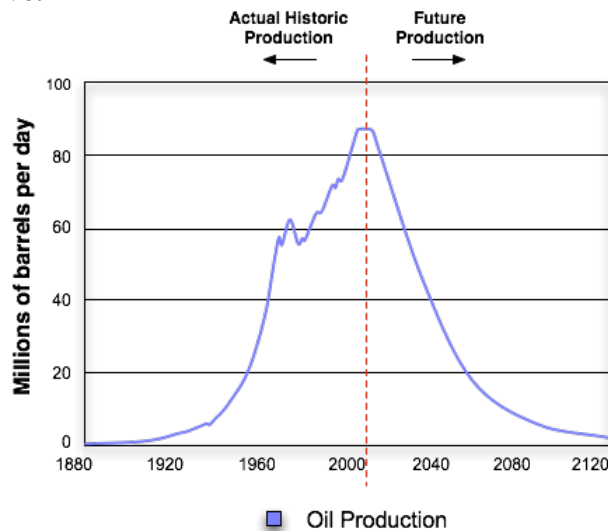
Around 20,000 oil spills are reported to the U.S. government in America each year, but each day there is a serious oil spill somewhere in the world which affects the life of birds, marine animals, and even humans. Oil contains chemicals that are poisonous to any kind of life that is exposed to it. According to Wikipedia,

“An oil is any neutral, nonpolar chemical substance that is a viscous liquid at ambient temperatures and is both hydrophobic and lipophilic. Oils have a high carbon and hydrogen content and are usually flammable and slippery.”

When an animal is exposed to it, it leads to negative outcomes. Marine animals like seabirds and otters are harmed because oil floats on the surface of the water. Otters die from hypothermia because of the lack of warmth they get when their fur is exposed to oil. Seabirds have feathers designed to repel water, but oil can damage them, leaving them in a vulnerable state.

There is also a difference between the types of oils that can be harmful. Light oils like Gasoline and Diesel are toxic. They can kill animals to the touch, set fire and explode and humans can be harmed by the fumes. Heavier oils like bunker oil can literally smother life. It can cause lung problems to animals like otters and seabirds. Unlike Gasoline or Diesel, heavy bunker oils can take years to erode. But then again, these effects depend on the setting they are in.

Oil is a major part of our economy and we rely on it heavily to survive. We use it daily and it is involved in almost everything we do. In America, we have reached a point called “Peak Oil,” which is an event based off of M. King Hubbert’s theory that the maximum extraction of petroleum will be reached and the production will go into terminal decline. Oil will become scarce and more expensive.



Why are we still paying for a dying resource? Why aren't we finding a new way to produce energy that can sustain us? Why do big companies like oil and gas industries ignore the fact that oil was going to be a limited resource and still have not done anything to help? We are literally throwing big money at companies that know oil is going to burn out. We humans are burning through our resources quickly and we have to find a new way to sustain ourselves before it is too late.

There has always been a question of who is to blame for these accidents. Do we blame the ship for a malfunction? Do we blame the company? Who or what do we blame for these life threatening accidents? On April 10th, 2010, the biggest oil spill event in history happened where

around 200 million gallons of oil was spilled into the Gulf of Mexico. Harry R. Weber from Fuel Fix claims that BP knew a blowout was possible, but did nothing to stop it. A blowout is when a mixture of water, mud and natural gas build up and surge through the drill pipes and explode into fire. The oil rig explosion in the BP oil spill killed 11 people and injured 17 others.



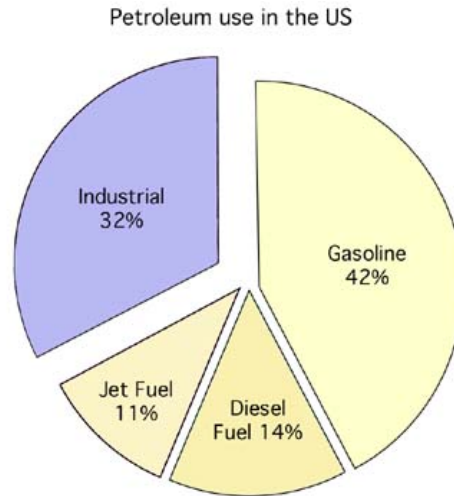
One of the biggest questions after the major incident was “who is to blame?” For the BP oil spill, people blamed the machinery but is that really the case? Who is at fault for all these oil spills that are happening today?

We keep supporting these companies who keep destroying the earth to find more of a resource that is dying quickly. If spills are to be avoided, humans and the U.S. government need to start spending time looking for a new way to get a sustainable energy source. Right now we are simply supporting these massive incidents that are destroying our earth little by little. We need to transition to a different type of energy before we run out and we plunge back into the stone age.

First of all, what do we use oil and gas for? Here are a few items according to Eccos.us.

- Transportation Fuels (Gasoline, Diesel, Jet Fuel)
- Asphalt
- Military and defense
- Fertilizer
- Heating
- Feedstock
- Petrochemicals
- Plastics
- Polyurethanes
- Solvents
- Electrical generation

There are many more applications we use oil and gas for not mentioned above, but those are the most common we use daily in America. The Energy Information Administration (EIA) states that transportation uses 2.3 of oil we have in America. Larger cars like trucks and others use about 45% of our oil. America is a part of a global economy and we cannot entirely be energy independent. That does not mean that we should not stop to look for a new way to get our energy instead of importing it from all these foreign countries we have trading ties to. Down below is the usage of oil/petroleum in America.



Professor Chris Rhodes who is a writer and researcher says in the article “What Happens When the Oil Runs Out?” that the world supply of crude oil will not run out. At least not at any time soon. We simply will not be producing as much crude oil like petroleum. Not at the rate of 30 billion barrels per year. Studies over a 40 year period tells us that humans have started using twice as much coal, two and a half times as much oil and three times as much gas. Overall, three times as much energy now than 40 years ago.

This brings up the topic of oil spills. Not only we are using it excessively, but we are also spilling it in the oceans, as well as destroying the earth. On April 20th 2010, the BP Oil Spill occurred in the Gulf of Mexico. For 87 days, 205.8 million gallons of crude oil was spilled into the ocean and about 16,000 miles of coastline was destroyed. About 26 million gallons of oil covered the sea floor. A total of 800,000 dead birds and 1,000 dolphins were killed since the spill. Later on when it was capped in July 2010, there was still oil washing up on the shore. 8,000 and more dead animals had been reported 6 months after the BP oil spill. The economy went down as well. The Oyster harvest went down by 23%. The fisheries lost around 173 million dollars while tourism losses were about 691 million dollars. More than 30,000 people responded to the crisis. The cost for the entire BP spill is 29 billion dollars with a potential fine of 4,300 dollars per barrel.

Oil is destroying our oceans, land, and air. Oil extracting causes climate change as well which is one of the biggest problems today.

“According to the report, Preparing for a Changing Climate, rising levels of carbon dioxide and other heat-trapping gases in the atmosphere have warmed the Earth and are causing wide-ranging impacts, including rising sea levels; melting snow and ice; more extreme heat events, fires and drought; and more extreme storms, rainfall and floods.”

We need to slow down the carbon emissions if we want to prevent major climate change. Two thirds of extant fossil fuels have to stay in the earth and according to Sean McElwee, they would be called “stranded assets.” The stranded assets would be reserves that oil companies will never extract.

A senior analyst at 350.org, Brett Fleishman said that there is too much carbon in the fossil fuels to burn.

Now a gas flare, which is also known as a flare stack is a gas combustion device. It is used in industrial plants such as chemical plants, natural gas processing and petroleum refineries. It is also used at oil production sites like oil wells, offshore oil, gas wells and landfills. Flare

stacks are used for burning flammable gas that are released by pressure relief valves. They are mostly used during unplanned over-pressuring of plant equipment. Flaring and burning of gases from oil drilling is a major source of carbon dioxide being released into the atmosphere. There are many types of gases that can affect the atmosphere. Greenhouse gases, methane and carbon monoxide. These gases are lighter than air therefore they move up to the upper levels of the atmosphere. The sun heats the gases and the heat is trapped in the atmosphere which causes the rest of the Earth to heat up as well. This causes changes in weather patterns, melting of ice and glaciers and ocean temperatures to rise. Less and less of these gases are being converted back into Oxygen which puts humans and any creature that breathes into danger.

Fossil fuel combustions combined with cement production, flaring carbon dioxide emissions in 2010 have tripled. According to Wikipedia, "Extraction of Petroleum,"

" $2400 \times 10^6$  tons of carbon dioxide are emitted annually in this way and it amounts to about 1.2 per cent of the worldwide emissions of carbon dioxide."

Oil is causing damage to our earth and for our planet to survive the destruction which is being wrought upon it, and for the good of the whole human race, we simply must find an alternate source of energy as soon as possible.

Although there are several alternatives to Oil: Nuclear Power or Renewable energy (Solar, Wind, Hydropower, Biomass and Biofuel, Geothermal Energy), these energies are either not economically viable for many countries or not advanced enough (as in the case of Nuclear Energy with it's use of the inefficient but cheap, "Light Water Reactors"), which are outdated in today's world.

Nuclear reactors produce just under 20% of the electricity in the USA. There are over 400 power reactors in the world (about 100 of these are in the USA). They produce base-load electricity 24/7 without emitting pollutants (including CO<sub>2</sub>) into the atmosphere. They do, however, create radioactive nuclear waste which must be stored carefully.

There are two fundamental nuclear processes considered for energy production: fission and fusion.

- Fission is the energetic splitting of large atoms such as Uranium or Plutonium into two smaller atoms, called fission products.
- Fusion is the combining of two small atoms such as Hydrogen or Helium to produce heavier atoms and energy.

Nuclear energy is the greatest alternative that we have to oil right now, since switching to completely clean energy is years away yet. And its residues are normally stored somewhere (This isn't the best solution but it is better than pumping it into the air we breathe like fossil fuels) Nuclear disasters have caused a great many deaths, as with the Chernobyl disaster and Fukushima, but it is nothing compared to the countless cases of cancer that airborne residues cause everyday)

Another point is that Nuclear Energy is less harmful to the environment **in terms of climate change** than fossil fuels.

A new sort of nuclear reactor is being planned, it is called a "Thorium reactor" and it is estimated that 1 tonne of Thorium provides the same amount of energy as 3.500.000 tonnes of coal.

Nuclear Energy is not a good long term solution, but it is the "lesser of two evils" In short, Oil is an unpredictable, unclean, diminishing and expensive resource that we cannot abide to live on. We have to make changes before it is too late.

## Works Cited

"Oil Spills: Sad But True." *Kidzworld*. N.p., n.d. Web. 22 Apr. 2015.

"Oil." *Wikipedia*. Wikimedia Foundation, n.d. Web. 22 Apr. 2015.

"How Oil Harms Animals and Plants in Marine Environments | Response.restoration.noaa.gov." *How Oil Harms Animals and Plants in Marine Environments | Response.restoration.noaa.gov*. N.p., n.d. Web. 22 Apr. 2015.

"What Is Oil Used For?" *Eccos*. N.p., 03 Feb. 2015. Web. 22 Apr. 2015.

"Peak Oil." *Wikipedia*. Wikimedia Foundation, n.d. Web. 22 Apr. 2015.

"Brief History." *OPEC* . N.p., n.d. Web. 22 Apr. 2015.

"Why Do so Many Oil Spills Happen?" *The Christian Science Monitor*. The Christian Science Monitor, n.d. Web. 22 Apr. 2015.

"Nuclear Energy Explained: How Does It Work? 1/3." *YouTube*. YouTube, n.d. Web. 04 May 2015.

"Clean Energy." *Union of Concerned Scientists*. N.p., n.d. Web. 04 May 2015

"The Oil Industry Is Not Only Hurting the Environment - It's a Bad Investment, Too." *The Oil Industry Is Not Only Hurting the Environment - It's a Bad Investment, Too*. N.p., 09 Apr. 2014. Web. 04 May 2015.

"Extraction of Petroleum." *Wikipedia*. Wikimedia Foundation, n.d. Web. 04 May 2015.

"What Happens When the Oil Runs Out?" *OilPrice.com*. N.p., Mon. July 2013. Web. 04 May 2015.

"Policies Should Match U.S. Status as an "energy Superpower"" *The Bakken Magazine* -. N.p., n.d. Web. 04 May 2015.

"Infrequently Asked Questions about Gas and Oil." *Infrequently Asked Questions about Gas and Oil*. N.p., n.d. Web. 04 May 2015.

"3 Reasons Why Nuclear Energy Is Awesome! 3/3" *Youtube*. Youtube, n.d Web. 04 May 2015

Wearden, Graeme. "Deepwater Horizon Worker Claims Oil Rig Leaking Weeks before Explosion." *Theguardian.com*. N.p., Mon Apr. 2010. Web. Wed Apr. 2015.

Weisman, Alan. *The World without Us*. New York: Thomas Dunne /St. Martin's, 2007. Print.