

# Oils Sands and Liquefied Coal



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## What are Oil Sands?

Oil sand is a naturally occurring mixture of sand, clay or other minerals, water and bitumen, which is a heavy and extremely viscous oil that must be treated before it can be used by refineries to produce usable fuels such as gasoline and diesel.



# The goal for Oil Sands.

The most common uses of oil are for heating or fuel

The oil sands are a powerful source of energy. Moving us. Heating us. Creating jobs. Helping pay for public services. Energy from the oil sands happens because of the human energy and innovation that goes into it. People striving to do better while working to reduce impact on the environment.



# Social /environmental Consequences!

Cancer rates amongst the people that live downstream of the tailing ponds are reported to be far higher than 'normal', and there are a disproportionately large number of different types of cancer.

Tar sands development releases an inordinate amount of climate-warming greenhouse gases into the atmosphere.

Development also pollutes the land, air, and water with dangerous levels of toxic chemicals

# Economic consequences !

During our reasearch we found out that Oils Sands can impact the economy , not in a bad way but it benefits the economy.

Everybody relies on energy to live, and most of that energy comes from oil. It is uniquely positioned to provide an abundance of safe, secure energy.



# How does it work/function/operate?

There are many ways they extract the oil. One of those way is that they heat the oil sands in plans to seprate the sand and the Bitumen.

The Bitumen is heated by itself and is placed in drums were the excess carbon (that is in the form of petroleum coke) will be removed.

The superheated hydrocarbon vapours from the coke drums are sent to fractionators where vapour condenses into naphtha, kerosene and gas oil.]

The end product is synthetic crude oil. It is shipped by underground pipelines to refineries across North America to be refined into jet fuels, gasoline and other petroleum products.



# interruptions.

Protesters stormed an energy conference at the University of Utah on Tuesday, criticizing the university for holding a meeting that focused on tar sands development in the western United States. Shouting at a crowd of potential investors and researchers, protesters with the Utah Tar Sands Resistance said a tar sands project in Utah would destroy the state, temporarily halting discussion over oil development projects in Utah.

Extracting oil from the sand is more complicated than conventional oil recovery. It requires mining then a process that involves adding hot water to the soil to separate it from the oil.

## Economic Obstacles.

By July 2014, the world was awash in crude supplies, thanks in part to the oil-sands boom. In Europe and in China there was a decrease in the demand of oil and this made the profits or money to rise. Statistically a barrel of oil produced from oil sand is about \$65.00 but when it is below there is no way you will make a profit out of the oil.





# Negative Environmental impacts.

A 2013 report concluded that an accident related to the failure of one of the oil sands tailings ponds could have catastrophic impact in the aquatic ecosystem of the Mackenzie River Basin due to the size of these lakes and their proximity to the Athabasca River. Also, according to documents from the Canadian government, the tailings ponds are leaking into and contaminating groundwater.

One way that this problem can be resolved is by creating ways of managing tailgaitng.

oil sands produces three times more greenhouse gas emissions than a barrel of conventional oil. In 2004, oil sands production surpassed one million barrels per day; by 2015, oil sands production is expected to more than double to about 2.2 million barrels per day.

one way that this can be resolved is by fining the greenhouse gas emissions by a percentage.

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# Liquefied Coal?

Liquefied coal is coal in a liquid state



# Goal

The goal for liquid coal is to provide an alternative to conventional oil products

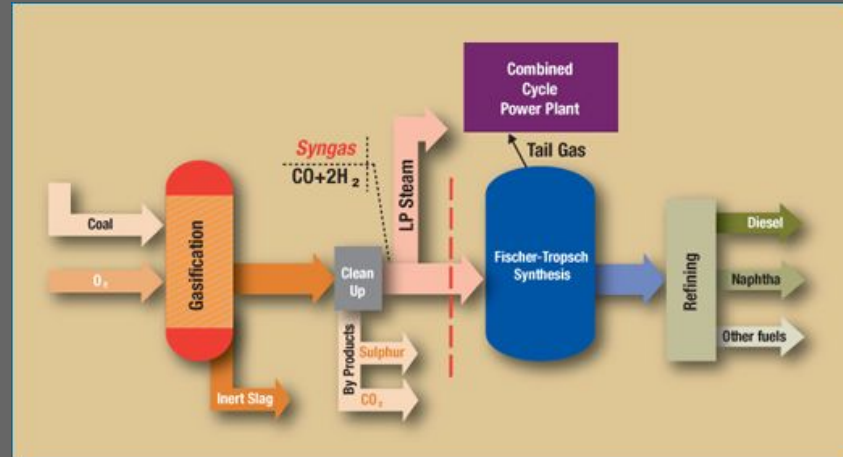


## Social, economic, and environmental consequences

The process can cause the destruction of many habitats and parks. This will also increase the amount of coal mining needed to make the liquified coal. Coal has always caused health issues but brings in a lot of money to the people running it all.

# How does it work/function/operate?

Coal first goes through the process of gasification. Once it's a gas it is then condensed over a catalyst which turns it into a liquid.



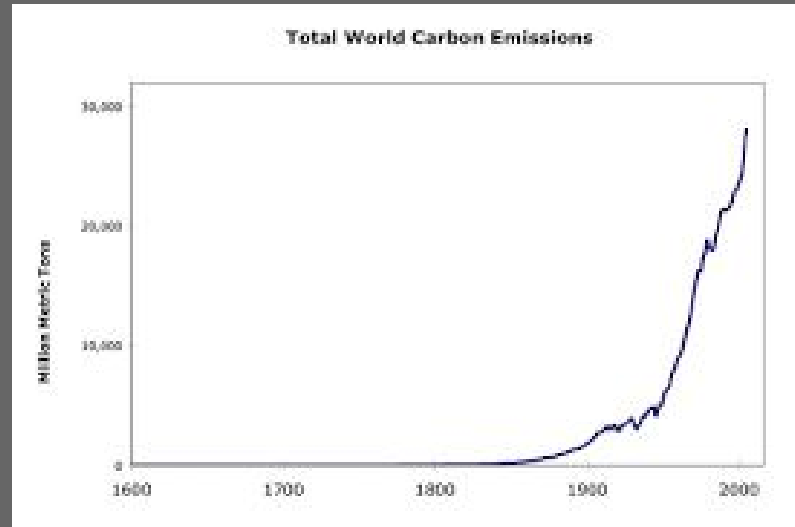
# Interruptions

Coal is affordable and widely available so not much interruptions occur.



# Political/economical obstacles

Due to the concerns of the CO<sub>2</sub> emissions the production of it hasn't been massive.





## Positive/negative environmental impacts

There isn't anything positive about this. It can become a substitute for other oils but with the consequence of almost doubling our CO2 problem currently. If this method is used it will cause more coal mining which harms wildlife and obviously people around the area.



# Citations

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