

CARBON CAPTURE

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ABSTRACT: In recent years, carbon capture has been proposed as a potential method to reuse as liquid fuel for air craft industries. The carbon emissions are increasing due to increase in use of gas, coal fired power station to take care of energy need. Here we review the carbon capturing technologies used by “carbon engineering” which is a Canadian – based company other topics include working of a carbon capturing technology. Finally, we discuss the economic and legal aspects of carbon capture



I. INTRODUCTION

Carbon dioxide is a colorless, naturally occurring gas that is released after people and animal inhale oxygen. It is a green house gas , which in turn creates the “ the green house effect” carbon dioxide is not a harmful gas , but the abundance of it cause climate change . The increased use of electricity , transportation and deforestation have result in increased emission of carbon dioxide , which in turn raise the earth temperature and contributes to climate change. Liquid fuel is expected to be one of the largest contributors of carbon dioxide by 2050. In 2017, china is emitted the highest amount of carbon dioxide in the world, followed by the United States

YEARS	EMISSIONS IN (MILLION METRIC TONS)
2017	36,153.26
2007	30,880.15
1997	23,915.33
1987	20,912.41
1977	18,355.44
1967	12,431.01
1957	8,317.28
1947	5,100.29
1937	4429.78
1917	3499.12
1897	1612.16

II. METHODOLOGY

The carbon engineering DAC system integrates two main Cycle. The first cycle is the absorption of CO₂ from the atmosphere in a device called “air contractor “using an alkaline hydroxide solution. The second cycle regenerates the capture liquid used in the air contractor and deliver pure CO₂ as an end product. These cycles operate in tandem continuously produce a concentrated stream of CO₂ gas as an output .the captured CO₂ can be used for enhanced oil recovery. Carbon engineering air to fuel process can produce fuels such as gasoline, diesel or jet using inputs of atmospheric CO₂ water and renewable electricity such as for solar PV .this approach helps in delivering clean fuel compatible with existing engines. The carbon engineering was founded in 2009 by David Keith which is now a board of member as well as professor of public policy and applied physics at Harvard University. In 2015, the carbon engineering started their operations and pilot plant is located in Squamish, British Columbia, Canada. The data obtained

from the David Keith and carbon engineering publish a manuscript on June 7, 2018 which represent that CO₂ can be captured at a cost of 94 to 233 USD per ton depending upon financial assumptions, energy cost and specific choice of inputs and outputs. Both DAC and air to fuel technologies are proven at pilot plant. But individual facility can be built to capture 1 million ton of CO₂ per year. Over 9500 of carbon engineering capture plants is needed to offset annual CO₂ Emissions which is estimated 2 billion vehicles by 2035 which include medium and heavy trucks. In May 2019, carbon engineering partnered with Oxy low carbon ventures to design large capacity plant to capture 500,000 metric tons of CO₂ from the atmosphere. Construction of the plant expected to begin in 2021 and become operational within two years and located in the Permian basin.



Hence to eliminate carbon abundance from the atmosphere all the countries should contribute their time to solve such problems so that we can able to live in a healthy and clean environment

IV. CONCLUSION

In this research paper, we talk about technology of capturing carbon so that it can be used as cleaner fuel which reduce the CO₂ emission (which is green house gas) this fuel can be used for air craft in upcoming decades. The cost of installation is quite high due to heavy equipment but it proven effective so that it can be made in large scale also.

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