



An overview on the carbon capture technologies with an approach of green coal production study

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ARTICLE INFO

Article history:

Received 21 March 2020

Received in revised form 1 April 2020

Accepted 2 April 2020

Available online 19 April 2020

Keywords:

Green Coal

Chemical Looping Combustion

Coal upgrade

Carbon capture system

performance analysis

Carbon control

ABSTRACT

Coal will still be a significant component of power generation for years to come, and carbon dioxide capture systems will be the essential feature of clean coal in the future. Those who promise to deliver low carbon dioxide capture costs are committed to the pipeline and future systems. So far, many methods of carbon dioxide capture have proved costly and energy-hungry based on coal system additives. Besides, it is continually moving other industries to effectively utilize the amount of carbon present in carbon dioxide and move toward carbon capture and reuse, which is marketed ready for carbon dioxide, but it has different requirements on product quality. This paper aims to review the methods of carbon capture technologies and develop an optimal method for the green coal combustion process using the Energy and Exergy Analysis. According to the results of this paper, the Chemical Looping Combustion is the most suitable method for this process, and with the coal, powerplants using CLC technologies, the Green Coal target can be made real.

1. Introduction

Climate change is one of the shreds of evidence of global warming, which is contributing to the global average global warming. This is due to the increase in greenhouse gas in the atmosphere. Carbon dioxide is a significant component of greenhouse gases. Industry processes are the leading cause of CO₂ influx [1]. It absorbs more than burning carbon oil. Greenhouse gas is also triggered by natural disasters such as agriculture and livelihoods. The mechanism of nature is the capture of CO₂ in the atmosphere to maintain the biosphere balance. Greenhouse gas emissions are on the rise compared to the early industrial revolution[2]. This is due to the use of fossil fuels, heat generation, logistics, and transportation. Coal is mainly used in the energy sector and consumes 70% of the Indian economy. India's economic growth is expected to accelerate to around 600,000 MW by one by 2030 [3]. Carbon dioxide emissions are reduced to reduce global warming. Nuclear energy, water energy, fossil fuels, coal require a lot of energy generation, but coal and

coal combustion technology efficiently and cleanly need to reduce CO₂ emissions. General Chat Chat Lounge Occupancy and storage technology is used to reduce greenhouse gas emissions by capturing CO₂ gas from the available levels [4].

Carbon capture and capture is a physical process that involves the capture and storage of CO₂. Carbon capture technology is used to reduce CO₂ emissions in the atmosphere. The CCS integrated system follows this process, absorbing CO₂ and separating it from other gases. Then they do this by cleaning, pressing, and moving the space. CO₂ is inserted into the geological surface of the reservoir or stored in the ocean[5]. This review focuses on the analysis, study, and evaluation of the importance of CCG technology to reduce global warming with economic implications for reducing GHG emissions. The primary purpose of CCS research with the energy sector is to understand the potential of these technologies. The power sector is used to clarify the conditions necessary for the creation of technology [6]. The purpose of CCS technology is as follows: It improves

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