Acting on Climate
#LHLowCarbonTransition

WestKuste 100: Capturing CO_2 to Decarbonize Cement Production and Transforming it into a Product

What is the challenge?

CO_2 occurs naturally during cement production due to raw materials used – limestone and chalk. In order to achieve climate goals, timely large-scale implementations of breakthrough technologies like carbon capture and utilization (CCU) by early adopters are needed.

What if CO2 from cement production becomes a valuable raw material for synthetizing methanol?

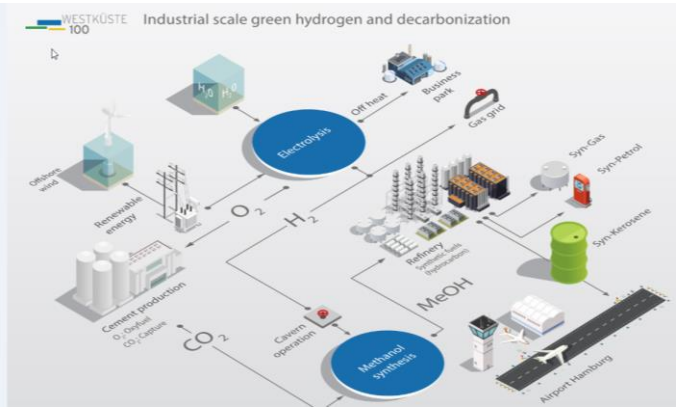
Key figures

100% reduction in CO_2 emissions, an annual saving of approx. 1 million tons of CO_2
The surplus oxygen (O_2) from the hydrogen production will be fed into the cement plant's combustion process, resulting in a concomitant savings of 60% of the current NOx emissions.

Our solution

The Lägerdorf cement plant in Germany is to host a feasibility study in the context of investment preparation for the conversion to an oxyfuel process. The study is intended to deliver reliable assumptions concerning the technical and economic feasibility to capture and separate 100% of the CO_2 emissions and drastically reduce NOx emissions (= closing material loops, drastically reducing emissions with CO_2 becoming a valuable raw material for synthesizing methanol).

The surplus oxygen (O_2) arising from the hydrogen production (by 100% green power) will be fed into the cement plant's combustion process, resulting in concomitant savings of 60% of the current NOx emissions. The high-purity carbon dioxide (CO_2) will be captured and in turn used as a raw material in industrial-scale methanol production (100% reduction in CO_2 emissions, an annual saving of approx. 1 million tons)., This is a major and innovative development milestone towards significantly lower-emission cement production.



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