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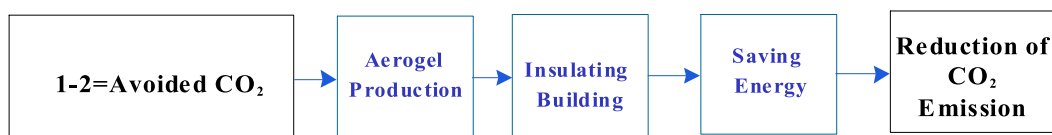
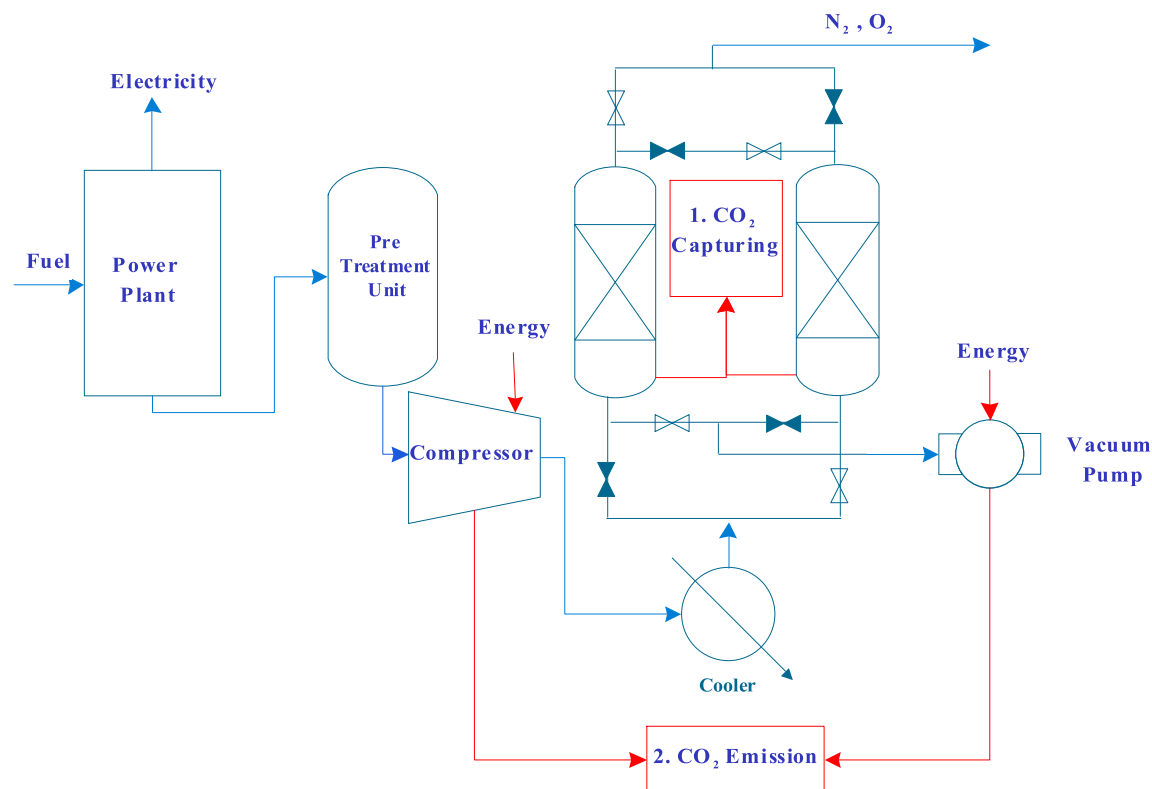


## A design procedure for the assessment of carbon capturing and utilization of flue gas from power plant using experimental data

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### Graphical abstract



### Highlights

- Appropriate operating pressure for pressure swing adsorption of CO<sub>2</sub> is determined
- Experimental data and conceptual design results are used for economic analysis
- Cost of avoided CO<sub>2</sub> and its ratio to total annualized cost are calculated
- CO<sub>2</sub> application in aerogel production is investigated
- Equivalent cost of saved energy is determined for a building using different insulators

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