

## Optimal Wheat Straw to Bioethanol Supply Chain Models

**Authors :** Abdul Halim Abdul Razik, Ali Elkamel, Leonardo Simon

**Abstract :** Wheat straw is one of the alternative feedstocks that may be utilized for bioethanol production especially when sustainability criteria are the major concerns. To increase market competitiveness, optimal supply chain plays an important role since wheat straw is a seasonal agricultural residue. In designing the supply chain optimization model, economic profitability of the thermochemical and biochemical conversion routes options were considered. It was found that torrefied pelletization with gasification route to be the most profitable option to produce bioethanol from the lignocellulosic source of wheat straw.

**Keywords :** bio-ethanol, optimization, supply chain, wheat straw

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