# Article information:

Novel process design and techno-economic simulation of methanol synthesis from blast furnace gas in an integrated steelworks CCUS system - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S2212982022003973>

# Article summary:

1. A novel process design and techno-economic performance assessment for methanol synthesis from Blast Furnace Gas (BFG) is presented.

2. Methanol production from BFG is economically attractive under certain conditions, with Levelized Cost of Methanol production (LCOMeOH) calculated to be 344.61 £/tonne-methanol.

3. Economic viability of the CCU(S) processes is highly dependent on the cost of the feedstock BFG.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article presents a novel process design and techno-economic simulation for methanol synthesis from Blast Furnace Gas (BFG) in an integrated steelworks CCUS system. The study evaluates the technical performance and economic viability of methanol production using BFG as a feedstock, based on direct CO2 hydrogenation at commercial scale. The article highlights that methanol production from BFG is economically attractive under certain conditions, with Levelized Cost of Methanol production (LCOMeOH) calculated to be 344.61 £/tonne-methanol.

However, the article has some potential biases and missing points of consideration. Firstly, the study only focuses on one specific technology for CCUS in the steel industry, which may not be representative of all possible options available. Secondly, the article does not provide a comprehensive analysis of the environmental impacts associated with methanol production from BFG or its potential risks. Thirdly, the study assumes that there will be sufficient market demand for methanol produced from BFG without providing evidence to support this claim.

Moreover, the article does not explore counterarguments or present both sides equally. For instance, it does not discuss potential challenges associated with scaling up this technology or its compatibility with existing infrastructure. Additionally, the study does not consider alternative uses for BFG or other by-product gases in the steel industry.

In conclusion, while the article provides valuable insights into a novel process design and techno-economic simulation for methanol synthesis from BFG in an integrated steelworks CCUS system, it has some potential biases and missing points of consideration that limit its overall credibility and usefulness. Further research is needed to fully evaluate the feasibility and sustainability of this technology in reducing CO2 emissions from the steel industry.

# Topics for further research:

* Environmental impacts of methanol production from Blast Furnace Gas
* Risks associated with methanol production from BFG
* Alternative uses for by-product gases in the steel industry
* Challenges of scaling up methanol production from BFG
* Compatibility of methanol production technology with existing infrastructure
* Market demand for methanol produced from BFG

# Report location:

<https://www.fullpicture.app/item/a882d8e6a87fc86e99e5f1f87768ca00>