

# **The economics of fossil decarbonisation in industrial processes for a targeted policy design**

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## **Abstract-**

**Current industrial processes, especially those in the basic material sector, rely on fossil fuels and feedstock. Hence, transforming the industrial sector with low-emission processes for a climate-neutral economy implies profound changes. In this paper, I present a conceptual understanding of the economics of fossil decarbonisation by categorising modifications to currently used technologies and differentiating them based on their known and uncertain investment and operational costs. Based on various case studies, I show how different uncertainty dimensions, and the evaluation of uncertainties impact the business case for low-emission process modifications. These uncertainties must be addressed by an industrial policy that guides the transition of the industrial sector. Hence, this work may support policymakers and academia in evaluating and designing targeted policy solutions that guide the industry towards fossil decarbonisation.**

**Index Terms- Fossil decarbonisation, Policymakers, Industrial sector**

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