Masterarbeit im Interdisziplinären Fernstudium Umweltwissenschaften

Titel: *Decarbonising India's Hard-to-Abate Sectors: The Role of Circular Economy Solutions and Resource Efficiency in Achieving India's Climate Objectives.*

This thesis explores the role of circular economy solutions and resource efficiency in decarbonising India's hard-to-abate sectors—steel, cement, aluminium, and plastics—collectively accounting for approximately 18 to 20 per cent of the nation's greenhouse gas emissions. It investigates production processes and decarbonisation challenges in both global and Indian contexts, highlighting the climatic and economic benefits of CES under various carbon pricing mechanisms, including the EU Carbon Border Adjustment Mechanism and India's Carbon Market. By quantifying emissions reductions and converting them into financial savings, the study illustrates how CES and resource efficiency can counterbalance the rising business costs associated with carbon pricing, ensure global competitiveness, and contribute to India's climate goals. The thesis underscores the critical need for enabling policies, advanced technologies, and targeted investments to scale CES and resource efficiency, facilitating deep decarbonisation and sustainable development in India.