



EDITORIAL

Editorial: Advancing Global Pathways to Net Zero

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ABSTRACT

The accelerating impacts of climate change and the growing urgency to limit global warming have placed decarbonisation at the centre of international policy, technological innovation, and economic transformation. Achieving a net zero carbon future requires coordinated action across energy systems, industrial processes, transport, urban infrastructure, and societal behaviour. Global Decarbonisation (GD) is established as an international peer reviewed open access journal dedicated to advancing research that supports this transition. This editorial outlines the journal's scope, interdisciplinary focus, and commitment to publishing high quality research that contributes to the development of practical pathways toward a low carbon global economy.

KEYWORDS Decarbonisation, Net zero transition, Low carbon technologies, Renewable energy systems, Carbon capture utilisation and storage

1. Introduction

The global effort to reduce greenhouse gas emissions represents one of the most significant technological and policy challenges of the twenty first century. Governments, industries, and research institutions worldwide are increasingly focused on strategies that enable deep reductions in carbon emissions while maintaining economic growth and energy security.

Achieving these goals requires advances across multiple domains, including renewable energy deployment, electrification of transport, improvements in energy efficiency, carbon capture technologies, and the development of circular and resource efficient economic systems. At the same time, the transition toward a low carbon future must also address questions of governance, financing, social acceptance, and equitable development.

Global Decarbonisation is established to support these efforts by providing a dedicated scholarly platform for research that advances the understanding and implementation of decarbonisation strategies. The journal aims to publish work that not only contributes to theoretical knowledge but also offers practical insights for policymakers, industries, and communities seeking to reduce carbon emissions and build climate resilient systems.

2. Scope and interdisciplinary focus

Decarbonisation is inherently interdisciplinary, requiring collaboration between engineers, scientists, economists, policymakers, and industry practitioners. Reflecting this complexity, Global

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Decarbonisation welcomes contributions that examine both technological innovation and the broader economic, environmental, and societal dimensions of the low carbon transition.

Key areas of interest include but are not limited to:

- Zero carbon technologies and innovations that reduce emissions across sectors
- Renewable energy development and integration into energy systems
- Energy efficiency in buildings, transport, and industrial processes
- Carbon capture, utilisation, and storage (CCUS)
- Sustainable urban development and low carbon city planning
- Policy frameworks and governance mechanisms for decarbonisation
- Economic instruments and financial strategies supporting net zero transitions
- Social and behavioural dimensions of the low carbon transition
- Circular economy approaches and resource efficiency
- Decarbonisation of transport systems and heavy industries

By addressing both established and emerging approaches, the journal aims to support innovation across the full spectrum of decarbonisation strategies, from fundamental research and system modelling to real world implementation and policy evaluation.

3. Editorial principles and publishing approach

Global Decarbonisation is committed to maintaining high standards of academic quality, research integrity, and transparency. All submissions undergo rigorous peer review to ensure originality, methodological rigour, and relevance to the global decarbonisation agenda.

The journal places particular emphasis on research that demonstrates clear implications for policy development, technological deployment, and system level transformation. Contributions that provide evidence based insights into scalable and practical solutions are especially encouraged.

As an open access journal, Global Decarbonisation seeks to ensure that research findings are widely accessible to the global community. By removing barriers to access, the journal aims to support the dissemination of knowledge that can inform decision making across academia, government, industry, and civil society.

4. Looking ahead

The transition to a low carbon global economy will require sustained innovation, interdisciplinary collaboration, and informed policy development. Through the publication of high quality research and critical analysis, Global Decarbonisation aims to contribute to the growing body of knowledge that supports this transformation.

Future issues will feature studies that explore emerging technologies, evaluate decarbonisation strategies across sectors, and examine the broader societal implications of the net zero transition. The journal also seeks to promote dialogue between researchers and practitioners working to translate research findings into real world impact.

The editorial team invites researchers, policymakers, and industry experts from around the world to contribute their work and participate in advancing the global transition toward a sustainable and net zero carbon future.

HOW TO CITE THIS ARTICLE

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