



Call for papers

New approaches for transitions to low fossil carbon societies: promoting opportunities for effective development, diffusion and implementation of technologies, policies and strategies

Masachika Suzuki^{a,*}, Norichika Kanie^b, Masahiko Iguchi^c

^a Graduate School of Global Environmental Studies, Sophia University, Japan

^b Graduate School of Decision Science and Technology, Tokyo Institute of Technology, United Nations University, Japan

^c Graduate School of Decision Science and Technology, Tokyo Institute of Technology, Japan

The visions for and structure of the new international low fossil carbon technology governance are crucial for the success of future global climate governance structures, policies and procedures. With the establishment of the Climate Technology Center and Network (CTCN) in 2010 adopted in the Cancun and Durban agreements at the United Nations Framework Convention on Climate Change (UNFCCC), the preliminary institutional and financial architecture to promote development, diffusion and implementation of low fossil carbon technologies are being implemented (UNFCCC, 2011).

This Call for Papers (CfPs) for a Special Volume (SV) of the Journal of Cleaner Production (JCLP) focuses upon both international and domestic institutions designed to facilitate improved low fossil carbon technology governance. In particular, this CfPs editorial team invites papers from academics, political leaders, financial, marketing, industrial and NGO leaders to submit papers, which focus upon governance approaches designed to **facilitate the rapid and effective transition to post-fossil carbon societies**.

Prospective authors should address the challenges and opportunities for effectively making the transitions that are needed. Authors are invited to address the barriers and opportunities to making the urgently needed changes. One question is how do the current challenges and barriers prevent or slow-down the development and effective implementation of post-fossil carbon societal technologies? A related question is, what institutional frameworks and governance tools are needed to overcome current challenges to make the transition to post-fossil carbon societies? Additionally, what types of technologies and technology promoting governance approaches are needed to support the transition to life in post-fossil carbon societies? Finally, how can the new governance system(s) ensure global equity of access to the technologies, knowledge and funds to be able to implement the needed changes? This SV provides opportunities for scholars, practitioners and governmental officials to co-work in teams to develop and to test new concepts,

structures, policies, and strategies for low fossil carbon technology governance.

1. Topical areas

The Editorial Team (Team) of this SV invites authors to prepare and submit papers in the following topical areas related to low fossil carbon technology governance. The Team will accept review papers, research papers, case studies and other types of papers in one or more of the following areas:

- **International Technology Promotional Institutions.** Authors are invited to examine the status of current and evolving institutional frameworks designed to facilitate various low fossil carbon technology networks. How can the evolving CTCN become effective in catalyzing the co-working of these and future networks? What will be the form and methods of operation of effective institutional frameworks for low fossil carbon technology governance (Benioff et al., 2010)?
- **International Financial Institutions.** Authors are invited to examine the current and needed financial institutions, to properly support the low fossil carbon technology diffusion and widespread implementation. How large a fund is needed for effective low fossil carbon technology diffusion and widespread implementation? How can the gap between the existing funds and the yearly \$200 billion target be filled by 2020? What types of evaluation processes should be implemented for decisions on allocation of funds, for monitoring effectivity of the investments and for building upon successes for widespread implementation of those technologies, processes, and policies.
- **Actor Configurations:** In the context of the new governance mechanisms, what should be the roles of different actors such as: governments, the private sector, financial institutions, NGOs, academia and others? In order to develop better governance structures, authors are invited to document and evaluate the array of practices of actors for low fossil carbon technology diffusion? There is the potential to learn from the past but due to the fact that there is limited experience and certainly none with

* Corresponding author.

E-mail addresses: masasuzuki.maildepot@gmail.com (M. Suzuki), kanie@valdes.titech.ac.jp (N. Kanie), miguchi@valdes.titech.ac.jp (M. Iguchi).

regard to the new governance mechanisms that have not yet been envisioned, it is essential to learn from past successes and failures not only on low fossil carbon governance but also on other types of governance from which lessons can be derived.

- **Private Sector Involvement:** The private sector holds the key to mainstreaming the implementation of low fossil carbon technologies. How can they be encouraged to move towards the rapid and effective transition to post-fossil carbon societies?
- **Technology Innovation: The diffusion of existing low fossil carbon technologies** is not good enough for making the urgently needed transition to post fossil carbon societies. Therefore, dramatically new technological, political, educational and ethical approaches must be envisioned, developed, tested and implemented to make the dramatic changes that are needed. In order to achieve them, numerous innovations are essential. How can the new governance systems effectively catalyze the development, testing, and implementing of the new approaches on local and on global scales within a relatively short time?
- **Promising Innovation Technologies and Tools:** What tools can be developed to foster creative innovations? What technologies are currently at the innovation stage, which could, if properly supported, result, in the near future, in achieving significant reductions of global greenhouse gas emissions?
- **Local Technologies:** The development and use of local technologies (rather than the technologies brought from abroad) is also essential for the long-term expansion of low fossil carbon technologies among developing countries. Authors are invited to prepare papers about successful technologies, products, policies, processes, strategies and educational programs, which can/are effectively promoting the development and implementation of locally/regionally developed local, low fossil carbon technologies? What are the conditions for success? How can they be replicated in other contexts?
- **Off-grid Technologies for Remote Areas:** Off-grid, small-scale technologies, tools processes, and policies may be more appropriate for small areas or villages. In fact, they may often bring greater environmental and social benefits to the local community. Authors are invited to document successful and unsuccessful cases of such technologies and to expound upon the lessons learned from the cases to accelerate diffusion of the technologies within other remote settings.
- **Social Conditions for Adopting Technologies:** A key for successful diffusion of low fossil carbon technologies is for societies to increase their social expectations for such technologies and/or to facilitate, through, education, peer pressure and other ways to help to effect behavioral changes in the development, testing and wide-spread usage of low fossil carbon technologies, processes, procedures and life-styles. Authors are invited to address what changes have been found to be successful and how to empower more and more people to engage in such transformative changes locally, regionally, nationally and globally.
- **Barriers to Effective Diffusion of Low Fossil Carbon Technologies:** Authors are invited to develop comparative case studies to address institutional, financial/economic, and technological barriers and to explore ways to overcome those barriers so that more rapid progress can be made in low fossil carbon technology innovation, diffusion and widespread implementation. The barriers may be classified into institutional, financial/economic, and technological barriers as follows (Ockwell et al., 2009; Painuly and Fenhann, 2002; UNEP Risk Centre on Energy Climate and Sustainable Development, 2011):
 - **Technological barriers** may involve lack of ownership, limited access to technology, lack of capacity, knowledge and

expertise on technologies, lack of standards, codes and verification, which negatively affects product quality and product acceptability, as well as lack of coordination among research groups, academic institutions and private industry.

- **Financial/economic barriers** may pertain to lack of financial resources and high production costs, lack of awareness and interest among financial institutions in the projects, lack of commercial viability, lack of financial institutions to support low fossil carbon technologies, limited size of markets, lack of liberalization and transparency.
- **Institutional barriers** may include lack of regulatory support, political instability, lack of stakeholder involvement in decision-making, lack of participation by local people, fossil fuel subsidies and lack of infrastructure to promote, regulate and support the transitions.
- **Social and cultural barriers** may include lack of information and consumer acceptance to low fossil carbon technologies as well as lack of capacity to assess, adopt and absorb new technologies and lack of knowledge of operations and maintenance.

Authors are invited to propose systematic ways of overcoming some or all of these and other barriers.

- **Opportunities for Effective Diffusion of Low Fossil Carbon Technologies:** The above-mentioned barriers may be turned into great opportunities both for paradigm shifts in greenhouse gas management and for new business developments. What are the approaches, roadmaps, and actual cases on ways to change the barriers into opportunities? What are the technologies that may help societies to leapfrog into new low fossil carbon societies? How can we generate and implement the win-win strategies between greenhouse gas emission reductions and new business development? Are there any opportunities for companies to obtain the “first-mover advantage” in developing new technologies, products, and tools in the market? What additional types of motivational support are needed to effect rapid and effective changes?
- **Necessary Monitoring Schemes and Mechanisms for the Transition to Low Fossil Carbon Technologies:** Authors are invited to examine existing monitoring schemes and mechanism or address completely new ones to monitor and ensure the success of the transitional path to innovate, diffuse and implement low fossil carbon technologies.

Please note: The topical areas, which authors may address for this SV are not limited to those referred to in the foregoing list. The Team welcomes papers about new technologies, innovative concepts, policies, strategies and training programs that may effectively and equitably help us make the urgently needed transitions to post-fossil carbon societies.

2. Coverage/target audience

This SV of the JCLP was designed to engage academics, policy-makers, corporate leaders, environmental NGOs and other practitioners in developing manuscripts, which address the visions, testing and promoting of new governance structures, which will provide fundamental, holistic, multi-disciplinary guidance for effecting low fossil carbon technology governance. The manuscripts could be based upon original research, comprehensive literature reviews, theoretical frameworks, empirical case studies, or notes on original research or on new techniques and technologies from the field. Book reviews and editorials are also welcome.

3. Schedule

Authors are encouraged to develop and submit extended abstracts as the first step of a two-step process of full paper development. Authors with questions or preliminary proposals for papers are encouraged to communicate with the editors and co-editors by e-mail to: miguchi@valdes.titech.ac.jp

Submission Timetable and Deadlines

- Call for papers: April 7, 2014
- Submission of extended abstracts of 400–500 words by July 15, 2014 to Dr. Iguchi (Email: miguchi@valdes.titech.ac.jp)
- Abstract submitters will receive responses from the Editorial Team by August 15, 2014.
- Authors submit their peer-review ready paper to Elsevier via the EES System by December 1, 2014.

4. Formats and procedures

Full papers are invited for potential publication in this SV of the JCLP. Submissions should be between 4000 and 5000 words for in-depth case studies, 6000 and 8000 words for full scientific papers based upon theoretical and empirical foundations, and 9000 and 12,000 words for comprehensive, integrative reviews. All submissions should be developed based upon the editorial guidelines provided in the instructions for authors for the Journal of Cleaner Production, which can be accessed from the website: http://www.elsevier.com/wps/find/journaldescription.cws_home/30440/authorinstructions.

Upon receipt of the completed documents, a minimum of three to five independent reviewers will be invited to provide peer reviews for each document. Upon receipt and acceptance of the author's revised documents, all will be published in this SV of the Journal of Cleaner Production.

Articles must be written in English. Authors with limitations in command of written English are recommended to send their papers to a **'Native English Science Editor,'** before the first submission because poorly written documents can compromise the decisions during the review process. The authors should resubmit

the final version of their document to a to ensure top quality of English for all documents of this SV.

Editorial and advisory board:

Donald Huisingsh, Ph.D.
University of Tennessee
E-mail: donaldhuisingsh@comcast.net
Tobias Schmidt, Ph.D.
ETH Zurich
Email: tobiasschmidt@ethz.ch
Joern Huenteler
ETH Zurich
Email: joernhuenteler@gmail.com
Heleen de Coninck, Ph.D.
Radboud Universiteit
Email: h.deconinck@science.ru.nl

Authors may also confer with the Editor-in-Chief of the Journal of Cleaner Production:

Professor Donald Huisingsh, Ph.D.
University of Tennessee
E-mail: donaldhuisingsh@comcast.net

References

- Benioff, R., de Coninck, H., et al., 2010. Strengthening Clean Energy Technology Cooperation under the UNFCCC: Steps toward Implementation National Renewable Energy Laboratory.
- Ockwell, D., et al., 2009. UK-India Collaborative Study on the Transfer of Low Carbon Technology: Phase II Final Report.
- Painuly, J.P., Fenhann, J.V., 2002. Implementation of Renewable Energy Technologies – Opportunities and Barriers UNEP Collaborating Centre on Energy and Environment, Risø National Laboratory, Roskilde.
- UNEP Risø Centre on Energy, Climate and Sustainable Development, 2011. Diffusion of Renewable Energy Technologies: Case Studies of Enabling Frameworks in Developing Countries UNEP Collaborating Centre on Energy and Environment, Risø National Laboratory, Roskilde, Denmark.
- UNFCCC, 2011. Report of the Conference of the Parties on its Sixteenth Session, Held in Cancun from 29 November to 10 December 2010. Addendum, Part Two: Action taken by the Conference of the Parties at its Sixteenth Session, FCCC/CP/2010/7/Add.1.