P04 / Hidden Challenges Arose from Dynamic Interactions along the Way to Sustainable Energy Transitions

Topic : GLOBAL WARMING, SDG, ENVIRONMENT, ENERGY AND POLICY

Chair : Paul Jo (HAIC at Arizona State University)

Second Chair : Ju-Ying Yang (Valdosta State University)

GENERAL OBJECTIVES, RESEARCH QUESTIONS AND SCIENTIFIC RELEVANCE

Recently, with more frequent climate calamities caused by climate change, the need for a sustainable energy transition is greater than ever. However, sustainable energy transitions cannot be a simple and short-term shift to renewable energy sources, but require “long-term and complex reconfigurations of technology, policy, infrastructure, scientific knowledge and social and cultural practices to sustainable ends” (Baker et al., 2014, p. 4). As many actors, such as governments and civic organizations, get involved in this move, it becomes harder to align their goals and agree on the best way to achieve energy transitions. Furthermore, “carbon lock-in” hinders pivotal changes even when reaching an agreement among various actors (Unruh, 2000).

Given this nature of energy transitions, it is evident that dynamic interactions and conflicts among various actors and factors are involved in the transition process, making it more complex to realize. For example, technocrats in governments (actors) have usually sought to find an efficient way to transition based on a top-down approach while civil actors prefer a democratic way based on a bottom-up approach. In doing so, certain factors, such as democratic procedures, not only enhance social acceptance of renewable energy policies but also reveal conflicting interests among various groups (Baldwin et al., 2018; Knudsen et al., 2015). In addition, certain regulations generated in the past for the incumbent could impede energy transitions by amplifying conflicts during the process. Another example shows that governments could deal with challenges through interaction, such as policy learning from others (Etheredge, 1981; Etheredge & Short, 1983).

Therefore, it is imperative to explore interactions and conflicts among various actors and factors during energy transitions in order for the transition processes to be not only effective but also democratic. However, the literature on energy transitions has focused more on causational and static assessments rather than dynamic interplay among actors and factors and their repercussions. (Kern & Markard, 2016; Kern & Smith, 2008; Pidgeon et al., 2014; Rasch & Köhne, 2016; Verbong & Geels, 2007). This **onsite** panel thus aims to answer this research question: *How do various agents deal with challenges and tensions caused by dynamic interactions between actors and factors during energy transitions?* Dealing with this overarching question can contribute to understanding the complexities of energy transitions and facilitate a more just and effective energy transition, which is one of the most urgent tasks for humanity.

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CALL FOR PAPERS

We welcome research papers focusing on various challenges caused by dynamic interactions of actors and factors in energy transitions, which should be addressed to move toward a sustainable energy system. Not surprisingly, renewable energy projects have provoked severe social conflicts even when the public generally support these projects (Knudsen et al., 2015). In this sense, it is imperative to explain how various actors deal with these conflicts while diverse interactions accelerate or delay the achievement of sustainable communities. This panel thus calls for papers that include, but not limited to answer the question: how could critical junctures open a window of opportunity to address tensions resulting from the “carbon lock-in” (Pierson, 2000; Unruh, 2000) or how could deliberation or negotiation frame interactions among various actors, thus opening a pathway to a renewable energy transition (Metze & Dodge, 2016).

In sum, in order to have a better understanding of diverse challenges caused by dynamic interactions between actors and factors in energy transition processes, we aim to provide the platform for discussion through this panel addressing: 1) Theoretically, how do various theories, for example, civic engagement or path dependence, conceptualize dynamic interactions during energy transitions? 2) How do various factors contribute to (or delay) achieving sustainable goals by addressing (or amplifying) conflicts caused by energy transitions? 3) What challenges do various actors have along the way of energy transitions and how do they deal with it? 4) Can they achieve a just energy transition? And if so, how?

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Session 1

Wednesday, June 28th 08:00 to 10:00 (KHS251)

(Virtual) Dynamics of South Korean environmental governance

DaEun Son (Korea University)

Timing and institutional voids as critical implementation barriers for sustainable energy transition: the case of blue energy at the Afsluitdijk, the Netherlands

Ferry Van Kann (University of Groningen)

Stefan Verweij (University of Groningen)

Analyzing energy transitions beyond the incumbent-challenger divide. The case of Chile (2016-2023).

Antoine Maillet (Universidad de Chile)

The Equifinality of Transitioning to Renewable Energy: A Comparative Case Study of Four Texas Municipalities

Ju-Ying Yang (Valdosta State University)

Literature Review on Three Types of Public Engagement in Energy Transitions

Paul Jo (HAIC at Arizona State University)