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Development of policy strategy for carbon capture and storage; Case study based in Japan

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The central aim of the Paris Agreement has been to strengthen the global response to the threat of climate change by restricting the rise in global temperature in this century to less than 2 °C over pre-industrial levels. To achieve this target, an ambitious carbon capture and storage (CCS) growth path will be required, with many projects needed globally by 2050 (Beck et al 2011). Asia is one of the few regions that has an increasing proportion of coal in its primary energy mix until the year 2040 (IEA, 2014). To limit the resulting increase in greenhouse gas (GHG) emissions, development of a policy strategy on CCS, based on specifications for coal storage sites and the regional energy mix, is strongly required. However, most Asian countries, including Japan, have not yet fulfilled this requirement. Ingelson et al (2010) focused on the most serious risks associated with CO2 injection and long-term storage, particularly the risk of leakage, which refers to the possibility of CO2 escaping from the storage site. Several analyses have acknowledged that these potential risks cannot be managed without clarification of responsibility for maintenance, monitoring, and leakage prevention in CO2 storage at the closure of the site as well as post-closure (Finch et al 2009). This paper examines the legal and socio-economic aspects of CCS technologies through a comparative study of the current law and policies of Japan and countries that have developed and an analysis of economic models of CCS lifecycle. This paper also proposes a comprehensive policy strategy for commercial CCS deployment, while addressing issues associated with ensuring effective long-term stewardship of CO2 storage sites, including those related to the protection of public health, safety, and the environment. Finally, the paper discusses the pathways to deep decarbonization using large-scale CCS based on the proposed policy strategy.

Biography

Eiji Komatsu is a Senior Researcher at the Centre for Environmental Law, Meiji University, Japan.He graduated with a PhD in field of Environmental Science from the University of Tsukuba Graduate School of Life and Environmental Sciences, and has experience of regulatoryscience as NIES fellow in National Institute for Environmental Studies, Japan. This study is an importantnationally funded project which is supported by the Environment Research and Technology Development Fund (2-1603) of the Environmental Restoration and Conservation Agency.

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