

英文要旨

論文題目 Japanese Coal Transition Reexamined: The Remains of Coal

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A coal transition has been gradually gaining ground in recent years. As climate change has now become a global concern, reducing the use of coal is one of the most predominant solutions to decrease the emission of carbon dioxide. Contrary to the conventional coal transition argument, this study analyzes the strategies required to achieve an equitable coal transition with a particular focus on the *remains* of coal.

Chapter 1 outlines key concepts relevant to the study. Coal transition is ideal for ensuring that existing environmental threats are alleviated without causing any harm to societies. There are two approaches to dealing with coal (1.1.). On the one hand, demand-side policies attempt to decrease the use of coal. On the other hand, supply-side policies support restricting the extraction. Both approaches are based on the political and economic perspective which assumes that taxes or trading systems can effectively reduce both/either demand and/or supply of coal. However, we would like to suggest that coal transition focuses only on a limited scope as far as a coal cycle is concerned. We define coal cycle as the entire life cycle of coal, which incorporates the processes of extraction, combustion, transportation, and consumption (1.2.). By introducing the coal cycle, the coal transition argument appears to focus only on two production processes, namely extraction (supply) and combustion (demand). Not to mention the importance of coal consumption (1.3.), emissions from coal are disregarded. Here, transition policy needs to be reexamined seriously. Section 1.4. observes that emissions from burning coal have been recognized from as early as the thirteenth century. But it was William Stanley Jevons that genuinely discusses the costs of coal emissions during the production process. The products jointly produced are not only goods but also workers' pain (disutility) and negative commodity (discommodity). Jevons can be recognized as the first person to

clarify the costs of coal emissions. Karl William Kapp further developed the concepts of social costs, which consist of damages to humans, environment, and society. Kapp also elaborates his own compensation principle that is based on human needs and requirements. Based on the above arguments, we introduce a concept of *remains* which is a complex set of tangible and intangible social, economic, and human factors of coal emissions (1.5.).

Chapter 2 illustrates a series of Japanese coal-related policies. It is imperative to evaluate the Japanese coal transition process, which has reduced coal production from as early as the 1950s. Sections 2.1 and 2.2 explicate the trends of Japanese coal mining policies. Although the Japanese coal transition policies implemented a variety of countermeasures to ease the problems of (a) workers, (b) regional economy, and (c) environment, it should be noted that there are remains that have been left behind (2.3.). The current situation shows that the Japanese coal transition policies face difficulties in two ways (2.4.). First, even if the supply (extraction) is reduced, the consumption is steadily increasing. Japan hugely relies on coal imports to meet its continuous demand. Imports exceeded the production level in 1970, and now Japan depends on 99.6% imported coal. We should reexamine whether this contradictory situation can be called a “just” transition. The Japanese coal transition is at a crossroads. Second, the remains are overlooked and left behind. For example, industrial accidents and occupational diseases cause pains and sufferings to former miners and their families, excessive support from the government lead mining companies and municipalities to fall into subsidy-dependent tendencies, and long-term and uncertain environmental destruction reduces residents’ well-being. These remains are accumulated and stored in former mining communities. It is impossible to achieve a sustainable coal transition as long as we ignore the remains.

Chapter 3 highlights problems related to the remains. A case study of the Omine Coalfield, Yamaguchi Prefecture, Japan, is examined. Section 3.1. follows the history of the Omine Coalfield. There are some similarities, which are consistent with the Japanese trends. Section 3.2. demonstrates that transition policies for (a) former miners, (b) economy, and (c) environment need to overcome the following post-mining obstacles. (a) The effectiveness of the reemployment system is doubtful. Many former miners could not find a job in local areas, so the former mining communities collapsed. Moreover, compensation for occupational diseases is not satisfactory. Patients still suffer from the disease with no compensation and their family members share the suffering of the diseases as well. (b) There is a compelling example of efforts to revitalize the local economy causing a huge dispute. The municipality decided to invite a prison to operate in the domain of the Private Finance Initiative (PFI). It was expected that the local economy would be revitalized by outsourcing the business to the local private

sectors. However, it turns out that the community is still dependent on the government for their budget. The effectiveness and stability of the PFI project remains unclear. (c) Although the shift from the coal industry to an alternative clean economy seems to have occurred successfully, it remains uncertain whether the transition is sustainable from the residents' perspective. The solar panels have been installed covering heritage sites, which results in erasing past memories. Moreover, anticipatory anxiety occurs in response to the degraded environment inflicted on the land and water. Based on testimonies of inhabitants, the Omine case study illuminates the fact that it is the residents who suffer the most.

Coal transition is expected to advance further. The solution to ensure sustainable coal transition must go beyond space and time. Concerning space, the coal transition should take a holistic approach, whereas when it comes to time, the coal transition should deal with problems for the present and the future. Sustainable coal transition should incorporate and account for the well-being and livelihood of residents. It is our duty not only to compensate those who suffer from remains but also to show the way forward for the transition.