

The Disruptive Potential of the Chinese Battery Value Chain: A Comparison of BEV and PHEV Developments

Stephane HEIM*, Kyoto University, heim.stephane.6s@kyoto-u.ac.jp

KAKITANI Kosuke, Toyota Motor Corporation

LEE Jaeho*, Hiroshima City Univeristy, lee-j@hiroshima-cu.ac.jp

SHIOJI Hiromi, Kagoshima Prefectural College

*corresponding authors

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The development of new energy vehicles (NEV) and the battery manufacturing is a central topic in regard to the greening and the disrupting forces that might affect the worldwide automotive industry. In 2020, China is the first market and production base of NEVs, with more than 230 companies producing batteries, and a 60% share of worldwide lithium-ion battery production. There is no doubt that in the coming decades, China will become the leading actor in the development of battery and NEV manufacturing. Several clusters emerged in China, among which, the Pearl River Delta is, if not the strongest, one of the strongest ones. It covers all segments of new energy vehicles (batteries, vehicles production, battery management system, etc.), with strong players such as BYD Battery, EVE Lithium Energy, Yineng Electronics, Desay Blue Micro New Energy, E-Power Energy, Battery new Material, Xinwngda, Haopeng technology, Yinghe technology, and Kedali for instance. The innovation capabilities of these firms will trigger new developments in the battery value chain, and in turn might disrupt the current organization of the automotive supply chain.

Based on an extensive empirical research covering several Chinese battery suppliers in the Pearl River Delta and Panasonic in China and Japan, this paper addresses the question of the vertical disintegration process entailed by the development of these suppliers in the Li-ion supply chain. It aims at comparing the organization of the BEV and PHEV supply chains, their cost structures, transaction relations, and technological requirements, in order to assess in the end the current disruptive potential of the Chinese battery supply chain.