

## Social Innovations as a business model for promoting Energy Transitions: A case-study for Gas Insulated Switchgears

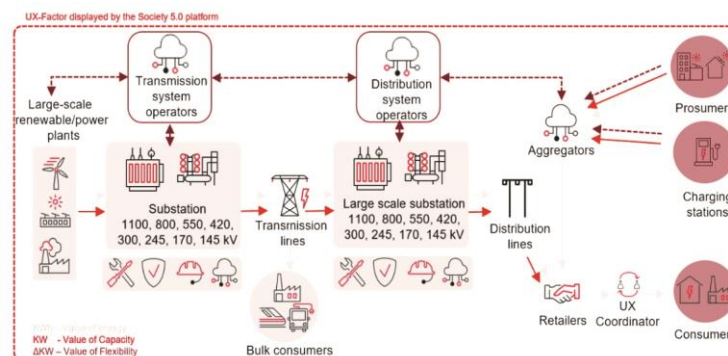
Social innovations in energy transitions support actor networks to co-create societal value in socio-technical transitions. The Japanese government provides an illustrative case with an action plan to develop a tool to integrate cyberspace with physical space in a platform for a human-centered society, denominated Smart Service Platform Society 5.0. This platform aims to foster a network of actors to co-create value and multiple services for the resolution of social problems, emerging in a context of sustainable transitions of energy systems.

Following decentralization, digitalization, and decarbonization trends, central electricity transmission, and distribution systems are evolving towards a “meshed structure” characterized by new flexibility requirements to support the integration of new renewable technologies. Existing technologies in the central grid, as Gas Insulated Switchgear, secure continuous operation offering flexibility to consumers. This functionality illustrates how technology-enabled business model innovation may enhance SIE and subsequently the formation of new markets for such technologies. This thesis uses a mixed-methods approach to understand how the platform promotes SIE and to develop a corresponding business model for GIS-based services. The long-term impact of the platform on the local energy market was evaluated through a system dynamic model, analyzing feedback loops created by co-creation efforts.



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Future energy grid supply chain proposed by the framework of Society 5.0. Where the price for electricity will evolve into a “UX” value” which includes power supplied KWh, supply capacity kW, supply-demand adjustments  $\Delta$ kW, and environmental constraints.