

ABSTRACT

Electricity distribution in archipelagic regions such as Kepulauan Seribu presents unique and persistent challenges that distinguish it from mainland areas. Despite being technically connected to the national electricity grid through submarine cables from the Jakarta mainland, the islands continue to face issues in terms of distribution consistency, reliability of infrastructure, and responsiveness to service disruptions. These problems are particularly concerning considering that Kepulauan Seribu is administratively part of the capital city of Indonesia, yet still faces gaps in infrastructure delivery. The situation is further complicated by seasonal weather impacts and logistical constraints, which can interrupt electricity provision and creating the disparity between reported electrification rates and actual user experiences. These conditions raise critical questions about the fairness and adequacy of electricity planning in small island regions.

This study seeks to explore how electricity infrastructure distributed in Kepulauan Seribu and compares it to Jakarta Mainland, focusing on spatial distribution, user satisfaction, and service governance. The study applies spatial mapping to identify infrastructure layouts, while field surveys and interviews with local communities offer insights into everyday realities of electricity use. Document analysis supports the research by examining planning frameworks and policy documents to understand the institutional approach to electricity service delivery. A gap analysis is conducted to compare the number of substations and electricity users between the archipelago and the mainland, highlighting differences in infrastructure reach and accessibility. By using both qualitative and quantitative data, the study offers a comprehensive overview of how electricity is experienced, governed, and perceived across these two contrasting contexts.

Findings indicate that while basic access to electricity has been achieved in Kepulauan Seribu, several operational and governance issues remain. The frequency of power outages, although relatively manageable, still affects routine household activities, economic productivity, and public services. The higher substation-to-customer ratio in the islands, compared to Jakarta Mainland, reflects a spatial necessity rather than a planning advantage, showing how dispersed geographies require different infrastructural strategies. Furthermore, while most residents report satisfactory access and awareness of complaint mechanisms, renewable energy initiatives remain limited in scale and integration. These findings underscore the importance of designing electricity infrastructure that is not only technically functional but also resilient, participatory, and tailored to the unique spatial constraints of archipelagic areas.

Keywords: *Kepulauan Seribu, island infrastructure, electricity distribution*