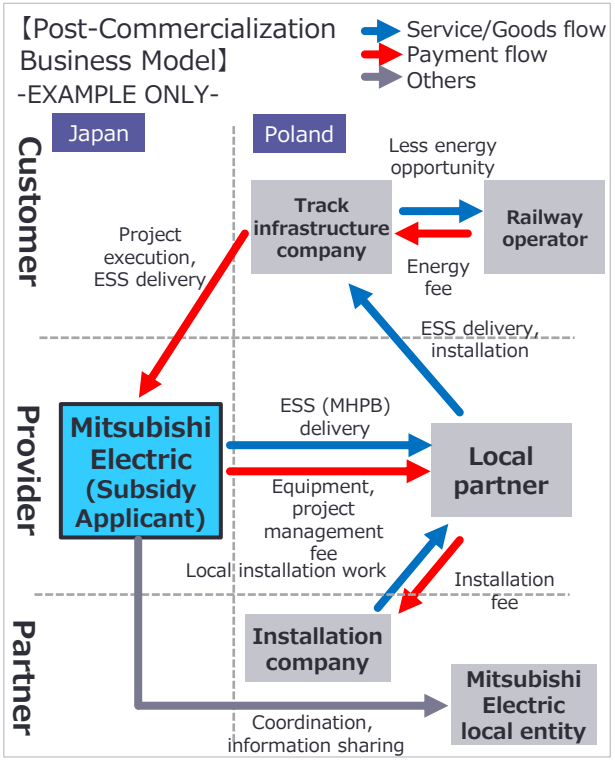
Business Plan Summary

Subsidies for Global South Future-Oriented Co-Creation Project（Ukrainian Reconstruction Support/Strengthening Cooperation with CEE Nations） in the FY2024 Supplementary Budget

Project Title	The Republic of Poland/Energy Management System utilizing ESS (Energy Storage System) in Krakow tram network
Company Name	Mitsubishi Electric Corporation
Company Size	SME / (Non-SME)
Project Type	Feasibility Study + Demonstration Project / (Demonstration Project)
Project Sector	①Information and Communications / ②Energy / (③Transportation) / ④Urban Infrastructure / ⑤Medical Care / ⑥Nursing and Healthcare / ⑦Agriculture and Food / ⑧Waste Management / ⑨Digital Platform / ⑩Other
Project Size	Total Project Expenses : 105.0 Million JPY / Total Expenses Eligible for Subsidization : 105.0 Million JPY / Subsidy Application : 52.5 Million JPY

Project Summary



【Objective】
- Total train operation power consumption reduction by storing and effectively using regenerative energy generated during railway operation. Collect and store even limited energy into ESS which enables peak shift of electricity by utilizing current feeding control technology.
- Minimize additional ground side equipment by introducing ESS installation, which enables budget allocation to other purposes such as newly built rolling stock procurement for passenger service upgrade.
- Maximize energy utilization efficiently, by diverting surplus regenerative energy to other uses.

【Project implementation contents and methods】
- To utilize “regenerative energy” generated by a train brake for other trains’ operation.
- To confirm that ESS installed on the ground contributes to voltage stabilization of the overhead catenary line system.
- To investigate stakeholders’ role (Railway operators, track management companies, electricity companies, station facility management companies and etc.) and related regulations.

【Main technologies/services】
- MHPB(Mitsubishi High Power Battery) collects and stores regenerative energy generated during braking. This energy is used for other trains acceleration/departure which enables total energy consumption is reduced.
- Investigate actual energy saving effect.

【Schedule】
- Planned duration: 3 years from grant approval

MHPB

Contribution to Ukrainian Reconstruction

- In Ukraine, where electricity infrastructure is severely damaged and power supply shortages is concerned, the introduction of ESS that utilizes energy storage technologies will contribute to reducing total electricity consumption in railway systems.
- Ukraine is also included in the extension of the EU’s Trans-European Transport Network (TEN-T) therefore the reconstruction is expected to be influenced by EU, based on railway netwok upgrade and passengers service improvement. The ESS proposed in this project and also energy management and microgrid solution which are our comprehensive blueprint solution are highly compatible with this concept. The achievements and experiences of this projects in neighboring countries, they can be easily introduced in the reconstruction of Ukraine.