

## Preface

The Economic Research Institute for ASEAN and East Asia (ERIA) has since 2016 had an excellent and close relationship with the Government of Brunei Darussalam and has been providing expertise in the efforts to improve, preserve, and protect Brunei's natural and built environment. Part of the collaboration has entailed a series of studies of the Temburong District Ecotown Projects which identified several potentials and implications of the projects, especially in the field of energy. Temburong district is known as Brunei's 'green jewel' with its flowing hills, lush flora, and babbling streams, and is home to large expanses of unspoiled rainforests and rich varieties of rare flora and fauna. The district is becoming more attractive due to the easy access from Bandar Seri Begawan with the opening of Temburong Bridge on 17 March 2020, positioning Temburong to be a good example of a successful ecotown or smart city in the Association of Southeast Asian Nations (ASEAN).

Phase 1 of the Temburong Ecotown study conducted in 2016–2017 reviewed energy technologies related to ecotowns or smart cities and contributed to promoting energy efficiency and conservation (EEC), clean transport, and variable renewable energy (vRE) with smart-grid technologies. Phase 2 sought to identify the best mix of existing diesel power generation, new solar/PV power generation, and new battery storage capacity. It applied a simulation approach on an hourly basis solar radiation data and hourly basis future electricity demand in Temburong district. Phase 3 featured a master plan for Temburong ecotown development in collaboration with Nikken Sekkei Civil Engineering Ltd., which touched on the urban design of Temburong district.

Phase 4 conducted in 2019–2020 and set out in this report focused on saving energy in commercial buildings, creating a clean electricity supply, and creating cleaner transport systems. Three concrete and applicable aspects to support Temburong's ecotown development are provided in the report – first, preparation of energy efficiency guidelines for commercial buildings (both new buildings and retrofitting) in Temburong district; second, clean electricity supply to Temburong district applying smart-grid technology; and third, a proposal for a smart transport system for the district. In addition, an overall road map for the development of an ecotown in the district was included. This study has been the result of close cooperation with the Ministry of Energy (ME) Brunei Darussalam and ERIA is looking forward to discussing further steps based on the study results.

Building on this good momentum, the development of Temburong ecotown must be carefully monitored and managed to ensure the right balance of development and preservation of natural assets, local culture, as well as the rural character of the district. It is of the utmost importance that the development benefits the local population in maintaining inclusiveness, generation of new jobs, and income growth. Hence, ERIA looks forward to building on the Temburong Eco Town Masterplan based on all of our previous studies with greater focus on industries and sectors that can be globally competitive and on economic activities that ensure inclusiveness of the district's residents.

A handwritten signature in black ink, appearing to read 'H. Nishimura'. The signature is stylized and cursive.

Professor Hidetoshi Nishimura

President, Economic Research Institute for ASEAN and East Asia

## Acknowledgements

This report was developed by a joint working group comprising teams from Brunei Darussalam and the Economic Research Institute for ASEAN and East Asia (ERIA). The Brunei Darussalam team consisted of staff of the Ministry of Energy, Brunei Darussalam, line ministries such as the Ministry of Development and the Ministry of Transportation and Information, and the Temburong District Development Authority. The ERIA team was composed of researchers of its energy unit, energy efficiency experts from Malaysia, TEPCO Power Grid (TEPCO PG) Incorporated, and Japan Engineering Management (JEM), Incorporated. We would like to thank the members of the working group for their excellent work and contributions.

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