Preface

Indonesia's electricity demand will increase significantly, by about 4.5 times, from 2017 to 2040 under the business-as-usual scenario, according to the East Asia Summit Energy Outlook 2017 edition of the Economic Research Institute for ASEAN and East Asia. This increase will be realised not only in the big cities, such as Jakarta and Surabaya, but also on Indonesia's small and midsized islands. As Indonesia is also rich in coal and natural gas, given the global challenges posed by climate change, natural gas will become an increasingly interesting source of power generation for Indonesia.

Eastern Indonesia is made up of two big islands: Sulawesi and West Papua (former Irian Jaya), and several groups of very diverse smaller islands, such as the Maluku and Nusa Tenggara islands. Around 41 million people inhabited these parts in 2017, accounting for around 16% of Indonesia's total population. Eastern Indonesia has three natural gas production sites: Bontang, Donggi Senoro, and Tangguh, and one planned production site – Masela LNG Block. The potential of shifting power generation sources from diesel to natural gas using small-scale liquefied natural gas (LNG) carrier vessels in this area is promising.

This report proposes a strategy for delivering small-scale LNG carrier vessels from LNG production sites to LNG power generation plants in Eastern Indonesia based on a personal computer-based dynamic simulation model. According to projected LNG demand at LNG power plants, forecast based on electricity demand at each demand site in Eastern Indonesia, the model seeks feasible solutions for delivering LNG from the origin to a destination using a computer simulation approach. The major outcomes of the dynamic simulation model are necessary number of LNG ships, maximum capacity of LNG receiving tanks, and their costs, consisting of capital and operating costs.

This study had to use tentative assumptions due to lack of data and information, but provided many meaningful results. I hope this study report will help Indonesia adopt appropriate policies to reallocate LNG production sites for export use and domestic use.

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