

## Preface

By 2025, Indonesia aims to increase its renewable energy share to 23% in line with its commitment made during the COP 21 conference on climate change in Paris in 2015 to reduce its greenhouse gas emissions. Using bioenergy is one of the strategies to meet that target.

To do so, Indonesia needs to develop its industry of biofuels, biomass, and their related feedstock, such as palm oil and wood pellets. President Joko Widodo, for instance, has reiterated recently that Indonesia would like to focus more on processing palm oil into higher-value derivatives and products, such as biodiesel and green diesel for both domestic use and export. Wood pellets and wood chips for power generation have also been seriously considered as amongst the most important bioenergy resources and have entered into the long-term development plan of the forestry industry.

In the transport sector, the 2014 biodiesel blend mandate following the Ministry of Energy and Mineral Resources' regulation has been implemented with an increasing blending rate of 10% in 2014, known as 'B10', to 20% (B20) in 2016 and 30% (B30) in December 2019; this has made Indonesia the world frontrunner in the usage of biodiesel in transportation. Indonesia also has a lot of potential to produce bioethanol as transport fuel. The inability to implement the planned 5% blending mandate for bioethanol in gasoline shows some difficulties and challenges in creating a financing mechanism that stimulates the market.

The use of bioenergy in transportation is only the initial step. In power generation, the Ministry of Energy and Mineral Resources has identified that bioenergy's potential might reach as high as 32.6 GW, though only around 1.95 GW of biomass-fired plants' capacity has been installed. Co-firing, by converting a certain amount of the country's existing 18 GW coal-fired power plants to accommodate 5%–10% biomass, i.e. wood pellets and wood chips, is certainly one feasible solution to increase the use of bioenergy.

This report is based first on the solid analysis of biomass's supply and demand potential for the energy sector in Indonesia to 2040. Second, biomass-based power generation in Japan is analysed in relation to biomass development in Indonesia. Following this, a wood pellet business model in Indonesia is elaborated. Finally, an analysis of opportunities and challenges of biomass development for the energy sector in Indonesia and a set of recommended strategies to increase biomass use for energy sector in Indonesia are given.

ERIA will continue to support bioenergy industry policies and planning in Indonesia.



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## Acknowledgements

This report was developed by a working group consisting of an ERIA team and an IEEJ team. The IEEJ team, led by Mr. Yoshiaki Shibata, oversaw analysing biomass power generation and wood pellets in Japan (chapter 4).

On behalf of the working group, I would like to acknowledge the excellent contribution of several experts who have dedicated their time to give lectures in a series of workshops:

- Mr Ir Djoko Winarno, Head of the Indonesian Biomass Energy Society (MEBI)
- Mr Dr Untung Murdyatmo, Chairman of the Association of Denatured Alcohol and Ethanol (ASENDO)
- Mr Indra Chandra Setiawan, S.T., M.T, Project Deputy General Manager, Toyota Daihatsu Engineering & Manufacturing – Thailand
- Mr Yoshinobu Kusano, Executive Advisor, RENOVA
- Dr Kazuyuki Murakami, Team Leader, JCOAL
- Ms Cecilya Laksmiwati Malik, Independent Energy Consultant for ERIA

Special thanks are delivered to ERIA team, which consists of Mr Shigeru Kimura (Special Advisor on Energy Affairs), Dr Han Phoumin (Senior Energy Economist), Dr Alloysius Joko Purwanto (Energy Economist), and Ms Dian Lutfiana (Research Associate).

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September 2021