

Preface

Indonesia has announced achieving carbon neutrality in its energy sector by 2060. Thus, it will need zero-emission technologies such as hydrogen and carbon capture, utilisation, and storage. But first, Indonesia has to reduce energy consumption in its final sectors: industry, transport, and residential and commercial. The country's energy consumption, especially electricity, has been increasing rapidly in the past few decades, and the industry sector is the second-largest energy consumer. Thus, promoting energy efficiency and conservation is a priority energy policy in the industry sector. The sector consumes two types of energy: heat and electricity. Therefore, if factories need heat and electricity for their production activity, a cogeneration system (CGS) should be appropriate due to its high thermal efficiency. This is because CGS recovers heat, which is waste to air.

Due to this background, this project studies the CGS potential of Indonesia's industry sector, referring to the experience of Japan and Malaysia in terms of CGS installation in their industry sector.

Indonesia's industry sector is equipped with an auto-generation system called 'gen-sen' due to the unstable public utility service of the Perusahaan Listrik Negara, a state-owned company tasked with the country's energy needs. Thus, when factories want to shift from an auto-generation system to a cogeneration one, they will attach a heat recovery system by applying a heat exchange system. But they do not need the heat recovery system if they need only electricity. Consequently, a CGS works well for factories that demand electricity and heat. Then, information on sub-industry sectors, such as chemicals and machines, is useful for Indonesia to seek the CGS potential of its industry sector.

I hope this report will contribute to the increase of CGS in the industry sector and result in significant energy savings for Indonesia.

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Acknowledgement

This report was developed by the Economic Research Institute for ASEAN and East Asia (ERIA), Japanese and Malaysian experts in cogeneration systems (CGSs), and Indonesian energy experts. The Japanese CGS expert introduced 33 samples of the CGS system across Japan's sub-industry sectors. Malaysian CGS experts presented 24 samples of the CGS system across Malaysia's sub-industry sectors. We especially acknowledge Shigeru Kimura, Special Advisor on Energy Affairs to the ERIA President, who initiated and led this CGS project. In addition, special thanks to the ERIA publication team led by Stefan Wesiak for their great contribution to improving the quality of this report.

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