

Press Release [Bandung, February 2024]

Repower Initiative and Institut Teknologi Bandung Collaborate on a Research Project on Coal Repowering in Indonesia

Repower Initiative, a program established by Quantified Carbon, with the ambition to repower coal power plants with clean heat sources, proudly announces a partnership with Institut Teknologi Bandung (ITB), the leading technical university in Indonesia. With this partnership, ITB will explore the feasibility of repowering Indonesian coal-fired power plants with low-carbon sources of energy, including nuclear reactors.

Indonesia's Net Zero Future

Indonesia, ranked as the world fifth-largest coal power producer, is facing a significant challenge in transitioning towards a zero-carbon future. With an estimated economic development, averaging between 5.2-6.0% from now until 2060, a 5X surge in energy use per capita compared to current levels is estimated. Addressing this increased demand responsibly is crucial. ^{1,2,3}

The Repower Initiative and ITB will partner up to explore the opportunity of making Indonesia one of the leaders in repowering coal-fired plants with carbon-free energy. Repowering is a solution that can help replace fossil fuels but retain and re-use power plant infrastructure. Repowering can remove emissions, save money, and help ensure a just transition.

Dr. Ir. Retno G. Dewi, MEnvEngSc of ITB will lend her expertise to this undertaking, building on Repower Initiative existing partnerships and knowledge with industry, academics & financial institutions in Poland, South Korea, Indonesia and China.

Joining the team is Dr. Nanang Hariyanto, Associate Professor at the Electrical Engineering Department of ITB. He's a leading expert in electrical power systems in Indonesia. Bob S. Effendi who has been working in the energy sector for almost three decades ranging from oil/gas services to coal mining then nuclear will also join the team.

Research Objectives and Goals

The collaborative research project between Repower Initiative and ITB aims to evaluate the feasibility and impact of repowering Indonesia's coal-fired plants with nuclear reactors.

An economic analysis will investigate the financial viability of repowering, focusing especially on investment protection and job retention. The project also places a significant emphasis on the environmental impact, assessing potential emission reductions and overall environmental benefits. The goals involve disseminating information about feasibility of repowering by using carbon-free technologies, particularly nuclear reactors as substitutes for coal firing boilers, to contribute to informed decision-making in the transition to sustainable energy.

Bob S. Effendi, project manager of the Repower Initiative in Indonesia, underscores the project's significance, stating:

"Our approach proposes not only a technological solution, but it also ensures that the transition towards cleaner energy sources is economically viable and environmentally sustainable".

Staffan Qvist, Managing Director of Quantified Carbon, expresses his enthusiasm for the partnership: "We are very happy that ITB and Dr. Retno's team are joining the Repower Initiative, and we look forward to starting our collaboration. Together, we aim to accelerate the transition of coal

infrastructure to carbon-free electricity, fostering sustainable solutions for a cleaner and greener energy future."

Sources

1. Carbon Tracker Initiative Country Profiles – Power and Utilities. Updated last in June 2022 (policy) and October 2022 (data). <https://countryprofiles.carbontracker.org/IndonesiaCoal>
2. National Energy Policy In Indonesia and it's Alignment to Sustainable Development Goals (SDG7) and Paris Agreement (NDC). Ministry of Energy and Mineral Resources. Workshop of National Expert SDG Tool for Energy Planning (NEXSTEP)., Bangkok, March 19th 2019.
3. Handbook of energy and economic statistics of indonesia 2022. Center for Data and Information on Energy and Mineral Resources, Ministry of Energy and Mineral Resources.

ITB Team

Bob S. Effendi has been working in the energy sector for almost three decades ranging from oil/gas services to coal mining then nuclear. He was a member of The Indonesian Chambers of Commerce (KADIN) and The National Committee of Economic and Industries (KEIN), attached to the President of Indonesia Office which has put nuclear power as priority agenda to push to the government. Currently, he is the Director of Operation at PT. ThorCon Power Indonesia, the first nuclear company in Indonesia and Director of PT Xpert Synergy Solution, a clean energy consulting company.

Dr Retno G. Dewi is an Associate Professor at Chemical Engineering Department of Institut Teknologi Bandung. Head of ITB Center for Energy Policy and consultant to the National Energy Council. Responsible for Development of Energy Transition Scenarios for Net Zero Emissions 2060 and Update National Energy Policy (KEN). Currently member of KNIWEC (World Energy Council – Indonesia National Committee).

Dr. Nanang Hariyanto is an Associate Professor at Electrical Engineering Department of Institut Teknologi Bandung. He is considered as one of the leading expert in electrical power system in Indonesia and a consultant to The Minister of Energy and Electricity Utility Company (PLN). He is responsible in making the energy modelling for the revised Electricity General Plan (2025 – 2050).

About the Repower Initiative

Repower is a global non-profit initiative led by Quantified Carbon dedicated to the repowering of coal power plants. Repower receives philanthropic funding from Founders Pledge, fuelling our mission to accelerate the transition to clean heat sources. <https://www.repower.world/>

About Quantified Carbon

Quantified carbon is an international consultancy firm dedicated to supporting decarbonization of energy systems and industrial processes. Quantified Carbon provides help with complex problem solving, modelling and optimisation for industrial transitions, energy systems and bespoke analysis. With each project inching closer to a more sustainable future. www.quantifiedcarbon.com

About Institut Teknologi Bandung (ITB)

Institut Teknologi Bandung is the first technical university in Indonesia, founded on March 2, 1959 in West Java, with a mission to serve science and technology to develop the nation.

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