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A Holistic Approach to Energy Technology Evaluation in Thailand

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Abstract

The paper proposes a holistic approach to energy technology evaluation. Quantitative measures such as cost efficiency, contribution to GDP, national employment contribution, contribution for public revenue, contribution to rural economy, and environmental and health impacts are developed to compare alternative energy technologies with conventional coal-fired technology. A national objectives consistency score is developed to serve as the basis in energy technology evaluation the study shows that alternative energy technologies such as industrial biomass cogeneration, small hydro, wind and solar PV contribute more to GDP, national employment, public revenue and rural development than traditional large-scale coal fired power plant while at the same time reducing the impact on the environment and human health as well as reducing the dependence on imported fuels. Small hydro, wind and solar energy technologies however require strong support from the government due to high economic costs.

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