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The Factors Used in Policy Decision Making for Promoting Direct Steam Generation Parabolic Trough Technology in Thai Food Industry

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Abstract

Direct steam generation from boilers is the most common technique, currently applied in Thailand food industry. To reduce its fossil fuel consumption and GHG emission, industry is focusing on the development of renewable energy technologies, and direct steam generation from parabolic trough is one of them. This study discusses decision making factors for promoting the use of direct steam generation in industrial heat process by parabolic trough technology. The factors were evaluated and applied by using literature review, personal communication with key personnel and questionnaires. The Analytic Network Process (ANP) was applied to suggest a ranking scale for the factors to be used in drafting their weights. The considered main factors were technology, economics, social, environmental and political. The results suggest that the financial mechanism, investment cost, technological maturity, reliability, safety and environmental gains can be used in decision making for the promotion of renewable energies in Thai food industry.

References

Information on http://www.industry.go.th

Ibrahim Iskin, Tugrul Daim, Gulgun Kayakutlu, Mehmet Altuntas, Exploring renewable energy pricing with Analyt conomics. 34 (2012) 8

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P. Aragonés-Beltrán, F. Chaparro-González, J. P. Pastor Ferrando, M. García-Melón, Selection of Photovoltaic Solar Power Plant Investment Projects-An ANP Approach. International Journal of Environmental, Chemical, Ecological, Geological and Geophysical Engineering. 2 (2008) 128-136. [6] Hakyeon Lee, Hyeonju Seol, Nakhwan Sung, Yoo S. Hong, Yongtae Park, An analytic network process approach to measuring design change impacts in modular products. Journal of Engineering Design. 21 (2010) 75-91.

Kai-Ying Chen,Wan-Ting Wu, Applying analytic network process in Logistics service provider selection- A case study of the Industry Investing in Southeast Asia. International Journal of Electronic Business Management. 9 (2011) 24-36.

G.T.R. Lin, Chih-Chieh Lin, Chu-Mei Liu, Mei-Ju Chou, A hybrid MCDM method to evaluate Supply-Chain development strategies. Pak. J. Statist. 29 (2013) 733-744.

G. Thangamani, Technology Selection for Product Innovation Using ANP-A case study. International Journal of Innovation, Management and Technology. 3 (2012) 560-565.

Salman Ahmad, Razman Mat Tahar, Selection of renewable energy sources for sustainable development of electricity generation system using AHP: A case of Malaysia. Renewable Energy. 63 (2014) 458-466. [11] Marco Cannemi, Monica Garcia Melon, Pablo Aragones Beltran, Tomas Gomez Navarro,Modeling decision making as a support tool for policy making on renewable energy development. Energy Policy. 67 (2014) 127-137.

Pi-Fang Hsu, Min-Hua Kuo, Applying the ANP Model for Selecting the Optimal Full-service Advertising Agency. International Journal of Operations Research. 8 (2011) 48-58.

Asadallah Najafi, ANP approach for selecting strategies influencing the productivity of knowledge women workers. African Journal of Business Management. 7 (2013) 4168-4179.

Vinoth Selva Bruce, K. Venkataraman, B.Vijaya Ramnath, Comparative analysis of AHP and ANP model for Lean Production System Justification. Applied Mechanics and Materials. 591 (2014) 197-201.

Reza Sheikhrabori , Mohsen Akbarpoor Shirazi, Reza Jahanbin, Project Portfolio Selection in electrical company based on the ANP and data Envelopment Analysis. Researcher 4 (2012) 31-41.

Mehmet Kabak , Metin Dagdeviren. Prioritization of renewable energy sources for Turkey by using a hybrid MCDM methodology. Energy Conversion and Management. 79 (2014) 25-33.

Ozgur Demirtas, Evaluating the Best Renewable Energy Technology for Sustainable Energy Planning. Internation

Sukulpat Kl ethod for an Urban R) 126-141.

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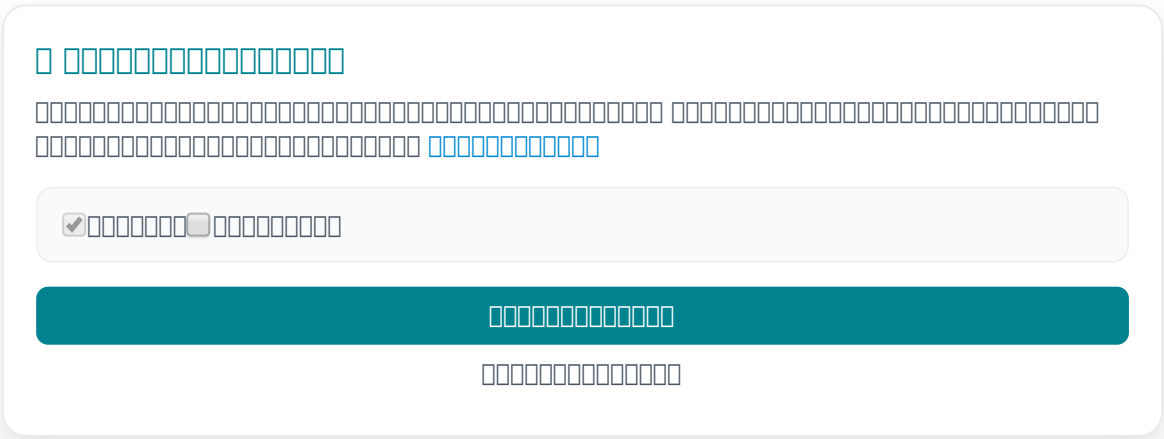
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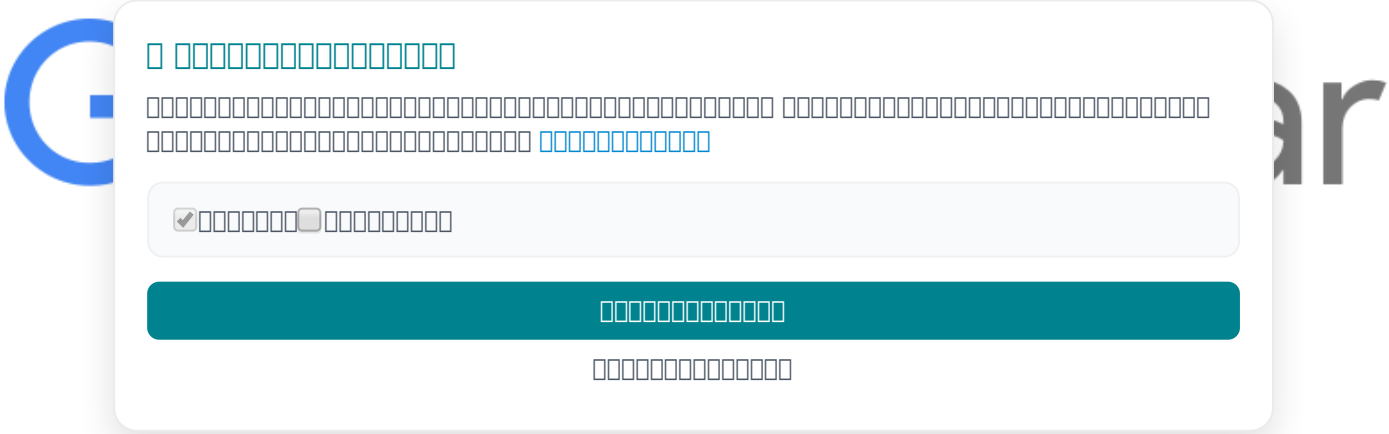
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