

[ANALYSIS OF PV ROOFTOP RESIDENTIAL IN INDONESIA'S ELECTRICITY MARKET]

[Fajar Haryadi, PT PLN (Persero), +62 21 7973774, fajar.haryadi@pln.co.id]

[Shochrul Ajija, Faculty of Economics and Business, Airlangga University, +62 31 5033642, shochrul-r-a@feb.unair.ac.id]

[Dzikri Hakam, PT PLN (Persero), +62 21 7973774, dzikri@pln.co.id]

[Arionmaro Simaremare, PT PLN (Persero), +62 21 7973774, arionmaro@pln.co.id]

[Natalina Damanik, PT PLN (Persero), +62 21 7973774, natalina@pln.co.id]

[Harry Indrawan, PT PLN (Persero), +62 21 7973774, harry.indrawan@pln.co.id]

Overview

The PV rooftop user in Indonesia has been emerging since 2017. This phenomenon is triggered by the Indonesian government target to reach 23% of the energy mix in 2025, while the price of PV rooftop is decreasing year by year which led to disruptive energy resources (DER). To face the competitor and to be the market leader of rooftop PV in Indonesia, PLN has to get the data of the existing customer to understand the characteristic of them. With this data, PLN hopefully can formulate the next business plan in offering the rooftop PV to the potential customer in Indonesia.

Methods

The methods used in this research is by conducting an offline survey to several customers in 3 regions in Indonesia: DKI Jakarta, East Java, and Bali. Those regions were chosen due to the highest number of customer and the highest intensity of solar power. Another method is by setting up Focus Group Discussion to the existing customer.

Results

The result shows that 61.05% of customers are male while the average age is 44.36 years. The youngest and oldest age are respectively 19 and 72 years. The respondents mostly live within 5 km from the city center. More than one third have a salary around 700-1000 USD per month. Around half of the answerers have the power capacity of 2200 VA, 1300 VA, and 4400 VA. Surprisingly, about 48% of them choose PV rooftop because it is more economical than if they don't install it.

Conclusions

This paper suggests business development in PLN to make a strategic plan in offering rooftop PV to Indonesian market, and also for the next research to develop any model related to PV rooftop development in Indonesia as well as the world.

References

- Fotopoulos, Christos & Athanasios Krystallis, (2002), "Purchasing motives and profile of the Greekorganic consumer: a countrywide survey," *British Food Journal*, Vol. 104, No. 9, pp.730-765.
- Junaedi, M. S. (2005). Pengaruh kesadaran lingkungan pada niat beli produk hijau: Studi perilaku konsumen berwawasan lingkungan. *Benefit: Jurnal Manajemen dan Bisnis*, 9(2), 189-201.
- Junaedi, M. S. (2016). Analisis faktor demografi, akses media dan sumber informasi terhadap kepedulian dan kesadaran lingkungan konsumen: kajian pemasaran yang berwawasan sosial.
- Juan, T. S., Wirtz, J., Jung, K., & Keng, K. A. (2001). Singaporeans' attitudes towards work, pecuniary adherence, materialism, feminism, environmental consciousness, and media credibility. *Singapore Management Review*, 23(1), 59-59.
- Kumara, Nyoman, S. (2010). Pembangkit Listrik Tenaga Surya Skala Rumah Tangga Urban dan Ketersediaannya di Indonesia. *Jurnal Universitas Udayana*. Teknologi Elektro, 9, 1.
- Ling-Yee, L. (1997). Effect of collectivist orientation and ecological attitude on actual environmental commitment: The moderating role of consumer demographics and product involvement. *Journal of international consumer marketing*, 9(4), 31-53.
- Martin, B., & Simintiras, A. C. (1995). The impact of green product lines on the environment: does what they know

- affect how they feel?. *Marketing Intelligence & Planning*, 13(4), 16-23.
- Outhred, Hugh., & Retnanestri, Maria. (2015). Insight from the Experience with Solar Photovoltaic Systems in Australia and Indonesia. *Energy Procedia*, 65, 121-130.
- Sueyoshi, T., & Wang, D. (2017). Measuring scale efficiency and returns to scale on large commercial rooftop photovoltaic systems in California. *Energy Economics*, 65, 389-398.
- Spertino, F., Di Leo, P., & Cocina, V. (2013). Economic analysis of investment in the rooftop photovoltaic systems: A long-term research in the two main markets. *Renewable and Sustainable Energy Reviews*, 28, 531-540.
- Yam-Tang, Esther P.Y. & Ricky Y.K. Chan (1998), "Purchasing Behaviours and Perceptions of Environmentally Harmful Products," *Marketing Intelligence & Planning*, 16/6, pp. 365-362.
- Yudha, H. M., Dewi, T., Risma, P., & Oktarina, Y. (2018, March). Life cycle analysis for the feasibility of photovoltaic system application in Indonesia. In *IOP Conference Series: Earth and Environmental Science* (Vol. 124, No. 1, p. 012005). IOP Publishing.