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Rangga Ivan Nugraha, Dr. Ir. Jimmy Trio Putra, S.T., M.Eng., IPM
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DAFTAR PUSTAKA

[1] S. Rahman, S. Saha, M. E. Haque, S. N. Islam, M. T. Arif, M. Mosadeghy, and A. M. T. Oo, "A framework to assess voltage stability of power grids with high penetration of solar pv systems," *International Journal of Electrical Power & Energy Systems*, vol. 139, p. 107815, 2022.

[2] Intergovernmental Panel on Climate Change, "Climate change 2021: The physical science basis," Geneva, Switzerland, 2021.

[3] W. P. Sari, "Pathways to energy transition in indonesia," in *Addressing Global Issues with Collective and Concerted Actions*, W. Kumorotomo and M. Baiquni, Eds. Yogyakarta: Gadjah Mada University Press, 2022.

[4] International Energy Agency, "Net zero by 2050: A roadmap for the global energy sector," Paris, 2021, revised version, October 2021.

[5] I. E. Agency, "World energy outlook 2025," Paris, 2025, iEA flagship report.

[6] PT PLN (Persero), "Rencana usaha penyediaan tenaga listrik (ruptl) 2025–2034," Jakarta, 2024.

[7] J. Twidell, *Renewable Energy Resources*, fourth edition ed. New York: Routledge, 2021.

[8] K. Mertens, *Photovoltaics: Fundamentals, Technology and Practice*. Wiley, 2014.

[9] A. Priambodo, I. Setiawan *et al.*, "Energy yield of solar pv in 34 indonesian cities with respect to various roof pitches and orientations," *International Journal of Environmental Science and Technology*, 2024.

[10] Kunaifi, A. Reinders *et al.*, "Indonesia's vast solar energy potential," *Energies*, vol. 14, no. 17, p. 5424, 2021.

[11] M. Rumbayan and K. Nagasaka, "A comparative performance analysis of a 1 mw cis pv system and a 5 kw crystalline-si pv system under the tropical climate of indonesia," *International Journal of Technology*, 2022. [Online]. Available: https://ijtech.eng.ui.ac.id/article/view/3612

[12] A. El Hendouzi and A. Bourouhou, "Solar photovoltaic power forecasting," *Journal of Electrical and Computer Engineering*, 2020.

[13] I. Garniwa *et al.*, *Solar Power Plant (Solar PV) Technology, Industry, Local Content, and Risk Mitigation: Case Study in Indonesia*, 2025.

[14] T. Burton, D. Sharpe, N. Jenkins, and E. Bossanyi, *Wind Energy Handbook*. Wiley, 2001.

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[15] D. Puspitasari *et al.*, "Effectiveness of using wind power plants (PLTB) in coastal areas to support energy needs in national defense," *Jurnal Ilmu Pertahanan*, vol. 3, no. 1, 2024.

[16] N. A. Handayani and D. Ariyanti, "Wind energy in indonesia: Current status, potential, and future prospects," *International Journal of Engineering*, 2018. [Online]. Available: https://www.ije-pyc.org/IJE/article/download/37/20

[17] J. Suseno *et al.*, "The future of wind power plants in indonesia: Potential, challenges, and policies," *Sustainability*, vol. 17, no. 3, p. 1312, 2025.

[18] M. A. Hossain *et al.*, "Wind energy integration: Variability analysis and power system impact assessment," *International Journal of Electrical Power and Energy Systems*, 2020.

[19] H. Pramaditya *et al.*, "Short-term wind energy resource prediction using weather research forecasting model for a location in indonesia," *International Journal of Technology*, 2022. [Online]. Available: https://ijtech.eng.ui.ac.id/article/view/5803

[20] Asian Development Bank, *Handbook on Battery Energy Storage System*. Mandaluyong City, Philippines: Asian Development Bank, 2018.

[21] H. Hatta *et al.*, "A review of key functionalities of battery energy storage system in renewable energy integrated power systems," *Energy Storage*, 2021.

[22] E. Hossain *et al.*, "An investigation for battery energy storage system installation with renewable energy resources in distribution system by considering residential, commercial and industrial load models," *Journal of Energy Storage*, 2021.

[23] F. Diaz-Gonzalez *et al.*, "A review of battery energy storage systems for ancillary services in distribution grids: Current status, challenges and future directions," *Frontiers in Energy Research*, 2022.

[24] M. Faisal *et al.*, "Review of energy storage system technologies in microgrid applications: Issues and challenges," *IEEE Access*, 2018.

[25] M. Bragagni *et al.*, "Recharging the transition to low carbon economy: The role of battery energy storage systems," *Science Journal of Energy Engineering*, vol. 13, no. 1, 2025.

[26] N. Hiron, N. Busaeri, S. Sutisna, N. Nurmela, and A. Sambas, "Design of hybrid (pv-diesel) system for tourist island in karimunjawa indonesia," *Energies*, vol. 14, no. 24, p. 8311, 2021.

[27] L. F. Gaitán, J. D. Gómez, and E. Rivas-Trujillo, "Quasi-dynamic analysis of a local distribution system with distributed generation. study case: The ieee 13 nodes system," *TecnoLógicas*, vol. 22, no. 46, pp. 195–212, 2019.

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[28] J. Valdez, E. García, A. Águila, and D. Carrión, "Quasi-dynamic evaluation of high solar pv penetration effects on voltage stability and power quality in unbalanced distribution networks," *Energies*, vol. 18, p. 5809, 2025.

[29] S. B. M. A. and S. M. Sudhakaran, "Time-series quasi-dynamic load flow analysis with seasonal load variation to resolve energy nexus for a practical distribution network," *Energy Nexus*, vol. 11, p. 100234, 2023.

[30] L. F. Gaitán-Cubides, J. D. Gomez-Ariza, and E. Rivas-Trujillo, "Quasi-dynamic simulation for a colombian distribution network with integration of photovoltaic and battery energy storage systems as distributed generation," in *IEEE PES Innovative Smart Grid Technologies Conference Latin America (ISGT LA)*, 2025.

[31] N. Kumari, B. Tran, A. Sharma, and D. Alahakoon, "A comprehensive review on stability analysis of hybrid energy system," *Sensors*, vol. 25, no. 10, p. 2974, 2025.

[32] J. Valdez, E. García, A. Águila, and D. Carrión, "Quasi-dynamic evaluation of high solar pv penetration effects on voltage stability and power quality in unbalanced distribution networks," *Energies*, vol. 18, no. 21, p. 5809, 2025.

[33] T. Jeyaraj, A. Ponnusamy, and D. Selvaraj, "Hybrid renewable energy systems stability analysis through future advancement technique: A review," *Applied Energy*, vol. 383, p. 125355, 2025. [Online]. Available: https://doi.org/10.1016/j.apenergy.2025.125355

[34] L. F. Gaitán-Cubides, J. D. Gomez-Ariza, and E. Rivas-Trujillo, "Quasi-dynamic simulation for a colombian distribution network with integration of photovoltaic and battery energy storage systems as distributed generation," in *2025 IEEE PES Innovative Smart Grid Technologies Conference Latin America (ISGT LA)*. IEEE, 2025.

[35] X. Liang, H. Chai, and J. Ravishankar, "Analytical methods of voltage stability in renewable dominated power systems: A review," *Electricity*, vol. 3, no. 1, pp. 75–107, 2022.

[36] A. Tayyebi, D. Groß, A. Anta, F. Kupzog, and F. Dörfler, "Frequency stability of synchronous machines and grid-forming power converters," *arXiv preprint arXiv:2003.04715*, 2020. [Online]. Available: https://arxiv.org/abs/2003.04715

[37] J. Freytes, A. Rossé, V. Costan, and G. Prime, "Grid-forming control based on emulated synchronous condenser strategy compliant with challenging grid code requirements," *arXiv preprint arXiv:2303.00391*, 2024. [Online]. Available: https://arxiv.org/abs/2303.00391

[38] A. Banerji, D. Sen, A. K. Bera, D. Ray, D. Paul, A. Bhakat, and S. K. Biswas, "Microgrid: A review," *IEEE Conference*, 2011.

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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[39] Z. Shuai, Y. Sun, Z. J. Shen, W. Tian, C. Tu, Y. Li, and X. Yin, "Microgrid stability: Classification and a review," *Renewable and Sustainable Energy Reviews*, 2016.

[40] F. Porté-Agel, M. Bastankhah, and S. Shamsoddin, "Wind-turbine and wind-farm flows: A review," *Boundary-Layer Meteorology*, vol. 174, pp. 1–59, 2019.

[41] J. F. Manwell, J. G. McGowan, and A. L. Rogers, *Wind Energy Explained: Theory, Design and Application*, 2nd ed. John Wiley & Sons, 2009.

[42] F. Bilendo, A. Meyer, H. Badihi, N. Lu, P. Cambron, and B. Jiang, "Applications and modeling techniques of wind turbine power curve for wind farms—a review," *Energies*, vol. 16, no. 1, p. 180, 2023. [Online]. Available: https://doi.org/10.3390/en16010180

[43] R. A. M. Lameirinhas, J. P. N. Torres, and J. P. de Melo Cunha, "A photovoltaic technology review: History, fundamentals and applications," *Energies*, vol. 15, p. 1823, 2022.

[44] Q. Hassan, M. Jaszczur, and E. Przenzak, "Mathematical model for the power generation from arbitrarily oriented photovoltaic panel," *E3S Web of Conferences*, vol. 14, p. 01028, 2017.

[45] A. P. Dobos, "Pvwatts version 1 technical reference," National Renewable Energy Laboratory (NREL), Golden, Colorado, USA, Tech. Rep. NREL/TP-6A20-60272, 2013. [Online]. Available: https://www.nrel.gov/docs/fy14osti/60272.pdf

[46] J. Mitali, S. Dhinakaran, and A. A. Mohamad, "Energy storage systems: A review," *Energy Storage and Saving*, vol. 1, pp. 166–216, 2022.

[47] Energy Systems Integration Group, "Grid-forming technology in energy systems integration," Energy Systems Integration Group (ESIG), Tech. Rep., 2022.

[48] J. Freytes, A. Rossé, V. Costan, and G. Prime, "Grid-forming control based on emulated synchronous condenser strategy compliant with challenging grid code requirements," *arXiv preprint arXiv:2303.00391*, 2024. [Online]. Available: https://arxiv.org/abs/2303.00391

[49] M. Albadi, *Power Flow Analysis*. London, UK: IntechOpen, 2019, available online.

[50] P. Kundur, *Power System Stability and Control*. McGraw-Hill, 1994.

[51] Tumiran, L. M. Putranto, R. Irnawan, Sarjiya, C. F. Nugraha, A. Priyanto, and I. Savitri, "Power system planning assessment for optimizing renewable energy integration in the maluku electricity system," *Sustainability*, vol. 14, no. 14, p. 8436, 2022.

[52] Tumiran, L. M. Putranto, R. Irnawan, Sarjiya, A. Priyanto, S. Isnandar, and I. Savitri, "Transmission expansion planning for the optimization of renewable energy integration in the sulawesi electricity system," *Sustainability*, vol. 13, no. 18, p. 10477, 2021.

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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[53] K. E. dan Sumber Daya Mineral Republik Indonesia, "Peraturan menteri esdm no. 20 tahun 2020 tentang grid code," Kementerian ESDM, Tech. Rep., 2020.

[54] PT PLN (Persero), "SPLN T6.001:2013 Tegangan-Tegangan Standar," PT PLN (Persero), Jakarta Selatan, Indonesia, Lampiran Keputusan Direksi PT PLN (Persero) 391.K/DIR/2013, 2013.

[55] Central Electricity Authority, *Electricity Distribution Network Planning Criteria*, Ministry of Power, Government of India, New Delhi, India, 2023.