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DAFTAR PUSTAKA

Adeyeye, K., Gallagher, J., McNabola, A., Ramos, H. M., & Coughlan, P. (2021). Socio-technical viability framework for micro hydropower in group water-energy schemes. *Energies*, *14*(14). https://doi.org/10.3390/en14144222

Alatas, M., Budiastuti, M. T. S., Gunawan, T., & Setyono, P. (2022). Spiral Cycle Micro-Hydro Community System Model for Sustainable Development in Yogyakarta, Indonesia. *Journal of Sustainability Science and Management*, *17*(9), 44–61. https://doi.org/10.46754/jssm.2022.09.004

Alatas, M., Susilowati, E., Sri Budiastuti, M. T., Gunawan, T., Setyono, P., & Sunarto. (2022). Horizontal Trash Rack Diverter Trash (HTDT) to Minimize Trash Clogging at the Intake of Micro-Hydro Power Plant. *International Journal of Sustainable Development and Planning*, *17*(6), 1713–1720. https://doi.org/10.18280/ijsdp.170604

Apichonnabutr, W., & Tiwary, A. (2018). Trade-offs between economic and environmental performance of an autonomous hybrid energy system using micro hydro. *Applied Energy*, *226*, 891–904. https://doi.org/10.1016/j.apenergy.2018.06.012

Badan Pusat Statistik. (2025). *Kapasitas Terpasang Berdasarkan Jenis Pembangkit Listrik*. https://www.bps.go.id/id/statistics-table/2/MzIxIzI=/kapasitas-terpasang-pln-menurut-jenis-pembangkit-listrik.html

Bhandari, R., Saptalena, L. G., & Kusch, W. (2018). Sustainability assessment of a micro hydropower plant in Nepal. *Energy, Sustainability and Society*, *8*(3). https://doi.org/10.1186/s13705-018-0147-2

BMKG. (2026). *Curah Hujan BPP Samigaluh Kab. Kulon Progo periode 2021-2025*.

Bracken, L. J., Bulkeley, H. A., & Maynard, C. M. (2014). Micro-hydro power in the UK: The role of communities in an emerging energy resource. *Energy Policy*, *68*, 92–101. https://doi.org/10.1016/j.enpol.2013.12.046

Copeland, S., Comes, T., Bach, S., Nagenborg, M., Schulte, Y., & Doorn, N. (2020). Measuring social resilience: Trade-offs, challenges and opportunities for indicator models in transforming societies. *International Journal of Disaster Risk Reduction*, *51*. https://doi.org/10.1016/j.ijdrr.2020.101799

Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, *18*(4), 598–606. https://doi.org/10.1016/j.gloenvcha.2008.07.013

Cutter, S. L., Burton, C. G., & Emrich, C. T. (2010). Disaster Resilience Indicators for Benchmarking Baseline Conditions. *Journal of Homeland Security and Emergency Management*, *7*(1). https://doi.org/10.2202/1547-7355.1732

Dahal, A. R. (2025). Socio-Economic Impact of Micro Hydro Plants in Bhimeshwar Municipality, Dolakha District, Nepal. *Historical Journal*, *16*(1), 1–9. https://doi.org/10.3126/hj.v16i1.76355

Devkota, J. U., Prajapati, C., Hada, B., & Singh, S. (2014). Principal Components Analysis of the Socioeconomic Conditions of Biogas Users-with Example from Nepal. Dalam *INTERNATIONAL JOURNAL of RENEWABLE ENERGY RESEARCH Jyoti U. Devkota et al* (Vol. 4, Nomor 3). https://www.researchgate.net/publication/281445887

Didik, H., Bambang, P. N., Asep, S., & Purwanto, Y. A. (2018). Sustainability Challenge of Micro Hydro Power Development in Indonesia. *IOP Conference Series: Earth and Environmental Science*, *147*(1). https://doi.org/10.1088/1755-1315/147/1/012031

Analisis Resiliensi Energi Di Pembangkit Listrik Tenaga Mikrohidro (PLTMH) Kedungrong, Kabupaten
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Dinas ESDM DIY. (2025). *Data Perancangan PLTMH Kedungrong*.

Dirjen EBTKE. (2024). *Laporan Kinerja*.

ERIA. (2023). *Energy Outlook and Energy-Saving Potential in East Asia 2023*.

Gasser, P., Lustenberger, P., Cinelli, M., Kim, W., Spada, M., Burgherr, P., Hirschberg, S., Stojadinovic, B., & Sun, T. Y. (2019). A review on resilience assessment of energy systems. Dalam *Sustainable and Resilient Infrastructure* (Vol. 6, Nomor 5, hlm. 273–299). Taylor and Francis Ltd. https://doi.org/10.1080/23789689.2019.1610600

Gautam, M., Poudel, B., & Alam, S. (2023). *Hydropower Resilience Database for Assessing Microgrid Formation Capability and Enhancing Power Grid Resilience*. http://www.inl.gov

Ghazali, A., Tjakraatmadja, J. H., Sunarti, S., & Pratiwi, E. Y. D. (2021). Resident-based Learning Model for Sustainable Resident Participation in Municipal Solid Waste Management Program. *Global Journal of Environmental Science and Management*, *7*(4), 599–624. https://doi.org/10.22034/gjesm.2021.04.08

Google Earth Pro. (2026). *Google Earth Pro V 7.3.6*. 2026.

Gu, D., Dillard, M., Gerst, M., & Loerzel, J. (2023). Validating Commonly Used Indicators for Community Resilience Measurement. *Natural Hazards Review*, *24*(2). https://doi.org/10.1061/nhrefo.nheng-1642

Güngör, M., & Elburz, Z. (2024). Beyond boundaries: What makes a community resilient? A Systematic Review. Dalam *International Journal of Disaster Risk Reduction* (Vol. 108). Elsevier Ltd. https://doi.org/10.1016/j.ijdrr.2024.104552

Holling, C. S. (1973). *Resilience and Stability of Ecological Systems*.

International Energy Agency. (2023). *Renewables 2023: Analysis and Forecast to 2028*. www.iea.org

Isa, M. A., Sudjono, P., Sato, T., Onda, N., Endo, I., Takada, A., Muntalif, B. S., & Ide, J. (2021). Assessing the sustainable development of micro-hydro power plants in an isolated traditional village west java, indonesia. *Energies*, *14*(20). https://doi.org/10.3390/en14206456

Janta, P., Leeraphun, N., Thapmanee, K., Niyomna, P., Sintuya, H., Setthapun, W., Maneechot, P., Sriprapakhan, P., Chollacoop, N., & Silva, K. (2024). Energy resilience assessment: Incorporating consideration of recoverability and adaptability in risk assessment of energy infrastructure. *Energy for Sustainable Development*, *81*. https://doi.org/10.1016/j.esd.2024.101506

Janta, P., Silva, K., Takata, T., Narukawa, T., & Chollacoop, N. (2025). Adaptive Resilience Curve: Examining Adaptability for Resilient Energy Infrastructure. *Energies*, *18*(18). https://doi.org/10.3390/en18184966

Jitnupong, B., Charoensuk, J., Bundasak, S., Somritjinda, S., Silabumrungrad, N., & Suraseing, J. (2026). Detection and Classification of Floating Waste on Water Surfaces Using YOLO-Based Algorithms. *Proceedings of Engineering and Technology Innovation*, *33*, 106–119. https://doi.org/10.46604/peti.2026.16023

John Fletcher, A. F. S. W. D. G. (2017). *Tourism: Principles & Practice*.

Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2024). Siaran Pers Nomor: 62.Pers/04/SJI/2024. *KEMENTERIAN ENERGI DAN SUMBER DAYA MINERAL REPUBLIK INDONESIA*. https://www.esdm.go.id/id/media-center/arsip-berita/kinerja-subsektor-ebtke-2023-dan-program-2024-diverifikasi-produk-bbn-dan-peningkatan-kapasitas-pembangkit-ebt

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Analisis Resiliensi Energi Di Pembangkit Listrik Tenaga Mikrohidro (PLTMH) Kedungrong, Kabupaten Kulon Progo, Yogyakarta
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Kementerian ESDM. (2022). *Laporan Kinerja Kementerian Energi dan Sumber Daya Mineral*.

Kementerian ESDM. (2025). *Media Center*. https://www.esdm.go.id/en/media-center/news-archives/semester-i-tahun-2025-kapasitas-terpasang-pembangkit-meningkat-44-gw

Khalid, R., Basit, A., Sohail, M., Ahmad, T., & Muhammad, N. (2024a). Community energy and socio-technical infrastructure resilience: analysis of mini/micro hydro power projects in Khyber Pakhtunkhwa, Pakistan. *Environmental Research: Infrastructure and Sustainability*, *4*(3). https://doi.org/10.1088/2634-4505/ad7886

Khalid, R., Basit, A., Sohail, M., Ahmad, T., & Muhammad, N. (2024b). Community energy and socio-technical infrastructure resilience: analysis of mini/micro hydro power projects in Khyber Pakhtunkhwa, Pakistan. *Environmental Research: Infrastructure and Sustainability*, *4*(3). https://doi.org/10.1088/2634-4505/ad7886

KMTI. (2026). *Laporan Keuangan Periode 2025-2026*.

Koirala, B. P., Koliou, E., Friege, J., Hakvoort, R. A., & Herder, P. M. (2016). Energetic communities for community energy: A review of key issues and trends shaping integrated community energy systems. Dalam *Renewable and Sustainable Energy Reviews* (Vol. 56, hlm. 722–744). Elsevier Ltd. https://doi.org/10.1016/j.rser.2015.11.080

López-González, A., Ferrer-Martí, L., & Domenech, B. (2019). Long-term sustainability assessment of micro-hydro projects: Case studies from Venezuela. *Energy Policy*, *131*, 120–130. https://doi.org/10.1016/j.enpol.2019.04.030

Maher, P., Smith, N. P. A., & Williams, A. A. (2003). Assessment of pico hydro as an option for off-grid electrification in Kenya. *Renewable Energy*, *28*(9), 1357–1369. https://doi.org/10.1016/S0960-1481(02)00216-1

Marion, A. (2005). *Models of hyporheic contamination by non reactive solutes, metals and colloids*.

McMillen, H., Campbell, L. K., Svendsen, E. S., & Reynolds, R. (2016). Recognizing stewardship practices as indicators of social resilience: In living memorials and in a community garden. *Sustainability (Switzerland)*, *8*(8). https://doi.org/10.3390/su8080775

Mehmet Kanoglu, Yunus A. Cengel, & John M. Cimbala. (2020). *Fundamentals and Applications of Renewable Energy*.

Mishra, S., Anderson, K., Miller, B., Boyer, K., & Warren, A. (2020). *Microgrid Resilience: A holistic approach for assessing threats, identifying vulnerabilities, and designing corresponding mitigation strategies*.

Moreno, R., Panteli, M., Mancarella, P., Rudnick, H., Lagos, T., Navarro, A., Ordonez, F., & Araneda, J. C. (2020). From Reliability to Resilience: Planning the Grid against the Extremes. *IEEE Power and Energy Magazine*, *18*(4), 41–53. https://doi.org/10.1109/MPE.2020.2985439

Ofosu, R. A., Normanyo, E., Kaberere, K. K., Kamau, S. I., & Otu, E. K. (2022). Design of an Electronic Load Controller for Micro Hydro Power Plant Using Fuzzy-PI Controller. *Cogent Engineering*, *9*(1). https://doi.org/10.1080/23311916.2022.2057115

Okazaki, E. (2008). A community-based tourism model: Its conception and use. *Journal of Sustainable Tourism*, *16*(5), 511–529. https://doi.org/10.1080/09669580802159594

Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. Dalam *Science* (Vol. 325, Nomor 5939, hlm. 419–422). https://doi.org/10.1126/science.1172133

UNIVERSITAS GADJAH MADA
Analisis Resiliensi Energi Di Pembangkit Listrik Tenaga Mikrohidro (PLTMH) Kedungrong, Kabupaten Kulon Progo, Yogyakarta
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Paish, O. (2002). Small hydro power: technology and current status. Dalam *Renewable and Sustainable Energy Reviews* (Vol. 6). www.elsevier.com/locate/rser

Perham, R. E. (1988). *Elements of floating-debris control systems*.

Philip Kotler, G. M. A. (2017). *Principles of Marketing*.

Poudel, B., Maley, J., Parton, K., & Morrison, M. (2021). Factors influencing the sustainability of micro-hydro schemes in Nepal. *Renewable and Sustainable Energy Reviews*, *151*. https://doi.org/10.1016/j.rser.2021.111544

Rajib Shaw, Kampanart Silva, & Nuwong Chollacoop. (2024). *Energy, Sustainability and Resilience: A Futuristic Vision from Asia*.

Rizki Yusfiq Firdaus, Dr. R. B. ST. , M. T. ; Ir. K. S. M. T. , M. Sc. (2017). *Evaluasi Kinerja Pembangkit Listrik Tenaga Mikrohidro (Studi Kasus Pltmh Kedungrong, Desa Purwoharjo, Kecamatan Samigaluh, Kabupaten Kulon Progo)*.

Roege, P. E., Collier, Z. A., Mancillas, J., McDonagh, J. A., & Linkov, I. (2014). Metrics for energy resilience. *Energy Policy*, *72*, 249–256. https://doi.org/10.1016/j.enpol.2014.04.012

S Pokhrel, Parajuli, P., & Adhikary, B. (2012). *Design and Performance of Lab Fabricated Induction Generator Controller*.

Safitri, I. A., Sulaiman, M., & Budiarto, R. (2024). Assessing Potential Energy Sustainability Of Micro-Hydropower System Through A Sustainable Indicator Approach. *Journal of Environmental Science and Sustainable Development*, *7*(2), 640–656. https://doi.org/10.7454/jessd.v7i2.1256

Sarma, G., & Zabaniotou, A. (2021). Understanding Vulnerabilities of Renewable Energy Systems For Building Their Resilience to Climate Change Hazards: Key Concepts And Assessment Approaches. *Renewable Energy and Environmental Sustainability*, *6*, 35. https://doi.org/10.1051/rees/2021035

Sekretariat Negara Republik Indonesia. (2017). *Peraturan Presiden Republik Indonesia Nomor 22 Tahun 2017 tentang Rencana Umum Energi Nasional (RUEN)*.

Shailendra Kumar Rai; O. P. Rahi; Sunil Kumar. (2015). *Implementation of Electronic Load Controller for Control of Micro Hydro Power Plant*.

Singh, B., Mwthy, S. S., & Gupta, S. (2003). *An Improved Electronic Load Controller for Self-Excited Induction Generator in Micro-Hydel Applications*.

Sovacool, B. K. ., & Dworkin, M. H. . (2014). *Global energy justice : problems, principles, and practices*. Cambridge University Press.

Stout, S., Lee, N., Cox, S., Elsworth, J., & Leisch, J. (2019). *Power Sector Resilience Planning Guidebook: A Self-Guided Reference for Practitioners*. https://www.nrel.gov/resilience-planning-roadmap/.

Sunarti, S., Zebua, R. S. Y., Tjakraatmadja, J. H., Ghazali, A., Rahardyan, B., Koeswinarno, K., Suradi, S., Nurhayu, N., & Ansyah, R. H. A. (2023). Social learning activities to improve community engagement in waste management program. *Global Journal of Environmental Science and Management*, *9*(3), 403–426. https://doi.org/10.22035/gjesm.2023.03.04

Sunil Singh; Murari Lal Azad; Atul Kumar. (2016). *Electronic load controllers for self excited induction generator*. IEEE.

Tilden F. (1977). *Interpreting Our Heritage (3rd ed.)*.

Ting, D. S.-K., & Vaselbehagh, A. (2024). *Brightening Tomorrow Together 2024*.

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Toniolo, H. (2014). The effects of surface debris diversion devices on river hydrodynamic conditions and implications for in-stream hydrokinetic development. *Water (Switzerland)*, *6*(8), 2164–2174. https://doi.org/10.3390/w6082164

Tyler, R. N. (2011). *River Debris: Causes, Impacts, and Mitigation Techniques Prepared for Ocean Renewable Power Company By the Alaska Center for Energy and Power*.

Umar, M., & Hussain, A. (2015). Micro hydro power: A source of sustainable energy in rural communities: Economic and environmental perspectives. *Pakistan Development Review*, *54*(4), 487–504. https://doi.org/10.30541/v54i4i-iipp.487-505

Utomo, T., Shidiq, M., Hasanah, R. N., Martineac, C., & Ardhenta, L. (2022). Design of Electrical Load Controller Using Microcontroller for Micro Hydroelectric in Andungbiru, Probolinggo, East Java, Indonesia. *2022 FORTEI-International Conference on Electrical Engineering, FORTEI-ICEE 2022 - Proceeding*, 66–71. https://doi.org/10.1109/FORTEI-ICEE57243.2022.9972961

Vaidya, R. A., Molden, D. J., Shrestha, A. B., Wagle, N., & Tortajada, C. (2021). The role of hydropower in South Asia's energy future. *International Journal of Water Resources Development*, *37*(3), 367–391. https://doi.org/10.1080/07900627.2021.1875809

Vinti, G., & Vaccari, M. (2022). Solid Waste Management in Rural Communities of Developing Countries: An Overview of Challenges and Opportunities. Dalam *Clean Technologies* (Vol. 4, Nomor 4, hlm. 1138–1151). MDPI. https://doi.org/10.3390/cleantechnol4040069

Walker, G., & Devine-Wright, P. (2008). Community renewable energy: What should it mean? *Energy Policy*, *36*(2), 497–500. https://doi.org/10.1016/j.enpol.2007.10.019