

DAFTAR PUSTAKA

- [1] “Tegaltirto,” Global Solar Atlas. Diakses: 31 Mei 2023. [Daring]. Tersedia pada: <https://globalsolaratlas.info/map?c=-7.794483,110.461849,11&s=-7.794483,110.461849&m=site>
- [2] Z. G. Ennafs, “Analisis Life Cycle Cost dalam Rancangan Sistem Pembangkit Listrik Tenaga Surya pada Atap Bangunan FMIPA Universitas Gadjah Mada,” Skripsi, Universitas Gadjah Mada, Yogyakarta, 2022.
- [3] N. S. A. Widodo, “Studi Kelayakan Implementasi Sistem Pembangkit Listrik Tenaga Surya Berkapasitas 500 kWp di Kampus ITN Malang,” Universitas Gadjah Mada, Yogyakarta, 2022.
- [4] Y. A. Nugroho, “Analisis Tekno-Ekonomi Pembangkit Listrik Tenaga Surya (PLTS) di PT Pertamina (Persero) Unit Pengolahan IV Cilacap,” Skripsi, Institut Teknologi Surabaya, Surabaya, 2017.
- [5] T. T. E. Vo, H. Ko, J.-H. Huh, dan N. Park, “Overview of Solar Energy for Aquaculture: The Potential and Future Trends,” *Energies*, vol. 14, no. 21, hlm. 6923, Okt 2021, doi: 10.3390/en14216923.
- [6] B. Subramaniam, C. Antony, A. Uma, A. B, A. S, dan S. S. Lingam, “Application of Renewable Energy in Aquaculture,” *Aqua Int.*, hlm. 48–54, 2019.
- [7] I. S. Widharma, I. Sunaya, I. Sajayasa, dan I. Sangka, “Perancangan Plts Sebagai Sumber Energi Pemanas Kolam Pendederan Ikan Nila,” *J. Ilm. Vastuwidya*, vol. 3, no. 2, hlm. 38–44, Agu 2020, doi: 10.47532/jiv.v3i2.212.
- [8] R. Hendarti, W. Wangidjaja, dan L. Septiafani, “A study of solar energy for an aquaculture in Jakarta,” dalam *IOP Conference Series: Earth and Environmental Science*, IOP Conference Series: Earth and Environmental Science, Des 2018, hlm. 012096. doi: 10.1088/1755-1315/195/1/012096.
- [9] I. Prasetyaningsari, A. Setiawan, dan A. A. Setiawan, “Design Optimization of Solar Powered Aeration System for Fish Pond in Sleman Regency, Yogyakarta by HOMER Software,” *Energy Procedia*, vol. 32, hlm. 90–98, 2013, doi: 10.1016/j.egypro.2013.05.012.
- [10] N. Resti, “Perancangan Solar Home System (SHS) Berbasis Fotovoltaik Atap Tipe On-Grid dengan Baterai untuk Kebutuhan Listrik Rumah Tangga 900 VA di Kabupaten Kulon Progo,” Skripsi, Universitas Gadjah Mada, Yogyakarta, 2022.
- [11] K. Yonata, “Analisis Tekno-Ekonomi terhadap Desain Sistem PLTS pada Bangunan Komersial di Surabaya, Indonesia,” Skripsi, Institut Teknologi Surabaya, Surabaya, 2017.



- [12] R. H. Rukmana, *Ikan Mas Pembenihan dan Pembesaran*. Semarang: Aneka Ilmu, 2003.
- [13] M. Farchan dan M. Mulyono, *Dasar Dasar Budidaya Perikanan*. Jakarta: STP Press, 2011.
- [14] “Istilah Penting dan Komposisi Kolam Koi.” Diakses: 22 Oktober 2023. [Daring]. Tersedia pada: <https://www.kigoi.id/2020/04/istilah-penting-dan-komposisi-kolam-koi.html>
- [15] J. A. Duffie dan W. A. Beckman, *Solar Engineering of Thermal Processes*, 4th ed. John Wiley & Sons, 2013.
- [16] S. Kalogirou, *Solar energy engineering: processes and systems*. Burlington, MA: Elsevier/Academic Press, 2009.
- [17] S. A. Kalogirou, “Solar Thermal Systems: Components and Applications—Introduction,” dalam *Comprehensive Renewable Energy*, Elsevier, 2022, hlm. 1–25. doi: 10.1016/B978-0-12-819727-1.00001-7.
- [18] S. R. Wenham, M. E. Green, M. E. Watt, R. P. Corkish, dan A. B. Sproul, Ed., *Applied photovoltaics*, 3rd ed. London ; New York: Earthscan, 2012.
- [19] *Calculating Irradiance Based on Tilt Angle*, (2019). Diakses: 12 Mei 2023. [MOOCs]. Tersedia pada: <https://ocw.tudelft.nl/course-lectures/3-3-1-calculating-irradiance-based-on-tilt-angle/>
- [20] M. De Simón-Martín, M. Díez-Mediavilla, dan C. Alonso-Tristán, “Shadow-band radiometer measurement of diffuse solar irradiance: Calculation of geometrical and total correction factors,” *Sol. Energy*, vol. 139, hlm. 85–99, Des 2016, doi: 10.1016/j.solener.2016.09.026.
- [21] “Solar Radiation on a Tilted Surface | PVEducation,” PV Education. Diakses: 12 Mei 2023. [Daring]. Tersedia pada: <https://www.pveducation.org/pvcdrom/properties-of-sunlight/solar-radiation-on-a-tilted-surface>
- [22] P. Megantoro, M. A. Syahbani, I. H. Sukmawan, S. D. Perkasa, dan P. Vigneshwaran, “Effect of peak sun hour on energy productivity of solar photovoltaic power system,” *Bull. Electr. Eng. Inform.*, vol. 11, no. 5, hlm. 2442–2449, Okt 2022, doi: 10.11591/eei.v11i5.3962.
- [23] “Average Solar Radiation,” PV Education. Diakses: 14 Mei 2023. [Daring]. Tersedia pada: <https://www.pveducation.org/pvcdrom/properties-of-sunlight/average-solar-radiation>
- [24] M. R. Patel dan O. Beik, *Wind and solar power systems: design, analysis, and operation*, Third edition. Boca Raton: CRC Press, 2021.



- [25] G. N. Tiwari, A. Tiwari, dan Shyam, *Handbook of Solar Energy: Theory, Analysis and Applications*. dalam *Energy Systems in Electrical Engineering*. Singapore: Springer Singapore, 2016. doi: 10.1007/978-981-10-0807-8.
- [26] R. M. Eisberg dan R. Resnick, *Quantum physics of atoms, molecules, solids, nuclei, and particles*, 2nd ed. New York: Wiley, 1985.
- [27] R. Budiarto, “Pengantar Teknologi Energi Terbarukan: Pemanfaatan Energi Matahari.” Universitas Gadjah Mada, 2016.
- [28] “Photovoltaic Solar Cell Turns Photons into Electrons,” *Alternative Energy Tutorials*. Diakses: 17 Mei 2023. [Daring]. Tersedia pada: <https://www.alternative-energy-tutorials.com/photovoltaics/photovoltaics-turn-photons-into-electrons.html>
- [29] V. J. Chin, Z. Salam, dan K. Ishaque, “Cell modelling and model parameters estimation techniques for photovoltaic simulator application: A review,” *Appl. Energy*, vol. 154, hlm. 500–519, Sep 2015, doi: 10.1016/j.apenergy.2015.05.035.
- [30] F. A. Lindholm, J. G. Fossum, dan E. L. Burgess, “Application of the superposition principle to solar-cell analysis,” *IEEE Trans. Electron Devices*, vol. 26, no. 3, hlm. 165–171, 1979, doi: 10.1109/T-ED.1979.19400.
- [31] A. S. Anhar, I. D. Sara, dan R. H. Siregar, “Desain Prototype Sel Surya Terkonsentrasi Menggunakan Lensa Fresnel,” *J. Online Tek. Elektro*, vol. 2, no. 3, hlm. 1–7, 2017.
- [32] W. Xiao, *Photovoltaic power system: modelling, design and control*. Hoboken, NJ: John Wiley & Sons, 2017.
- [33] M. J. Carvalho, P. Horta, J. F. Mendes, M. C. Pereira, dan W. M. Carbajal, “Incidence Angle Modifiers: A General Approach for Energy Calculations,” dalam *Proceedings of ISES World Congress 2007 (Vol. I – Vol. V)*, D. Y. Goswami dan Y. Zhao, Ed., Berlin, Heidelberg: Springer Berlin Heidelberg, 2008, hlm. 608–612. doi: 10.1007/978-3-540-75997-3_112.
- [34] “Array incidence loss (IAM),” *PVSyst*. Diakses: 22 Juni 2023. [Daring]. Tersedia pada: https://www.pvsyst.com/help/iam_loss.htm
- [35] M. R. Maghami, H. Hizam, C. Gomes, M. A. Radzi, M. I. Rezadad, dan S. Hajighorbani, “Power loss due to soiling on solar panel: A review,” *Renew. Sustain. Energy Rev.*, vol. 59, hlm. 1307–1316, Jun 2016, doi: 10.1016/j.rser.2016.01.044.
- [36] A. Luque dan S. Hegedus, Ed., *Handbook of photovoltaic science and engineering*, 2nd ed. Chichester, West Sussex, U.K: Wiley, 2011.
- [37] J. Lindroos dan H. Savin, “Review of light-induced degradation in crystalline silicon solar cells,” *Sol. Energy Mater. Sol. Cells*, vol. 147, hlm. 115–126, Apr 2016, doi: 10.1016/j.solmat.2015.11.047.



- [38] G. Cipriani, V. Di Dio, A. Marcotulli, dan R. Miceli, “Manufacturing tolerances effects on PV array energy production,” dalam *2014 International Conference on Renewable Energy Research and Application (ICRERA)*, Okt 2014, hlm. 952–957. doi: 10.1109/ICRERA.2014.7016526.
- [39] S. Dubey, J. N. Sarvaiya, dan B. Seshadri, “Temperature Dependent Photovoltaic (PV) Efficiency and Its Effect on PV Production in the World – A Review,” *Energy Procedia*, vol. 33, hlm. 311–321, 2013, doi: 10.1016/j.egypro.2013.05.072.
- [40] “Modeling Photovoltaic Module-Level Power Electronics in the System Advisor Model.” National Renewable Energy Laboratory, Juli 2015.
- [41] D. Jordan dan S. Kurtz, “Overview of Field Experience - Degradation Rates & Lifetimes,” *Natl. Renew. Energy Lab.*, 2015.
- [42] “Crystalline vs Thin Film Solar Panels,” Solaris. Diakses: 22 Juni 2023. [Daring]. Tersedia pada: <https://www.solaris-shop.com/blog/crystalline-vs-thin-film-solar-panels/>
- [43] A. Ameer, A. Berrada, K. Loudiyi, dan R. Adomatis, “Performance and energetic modeling of hybrid PV systems coupled with battery energy storage,” dalam *Hybrid Energy System Models*, Elsevier, 2021, hlm. 195–238. doi: 10.1016/B978-0-12-821403-9.00008-1.
- [44] “The components of any grid-connected solar power system ...” Diakses: 22 Juni 2023. [Daring]. Tersedia pada: <https://www.4shoresolarelectrical.com.au/blogs/Gold-Coast-Solar-Advice/The-components-of-any-gridconnected-solar-power-system-/>
- [45] A. Ghafoor dan A. Munir, “Design and economics analysis of an off-grid PV system for household electrification,” *Renew. Sustain. Energy Rev.*, vol. 42, hlm. 496–502, Feb 2015, doi: 10.1016/j.rser.2014.10.012.
- [46] G. Sasikumar dan S. Ayyappan, “Multi-criteria Decision Making for Solar Panel Selection Using Fuzzy Analytical Hierarchy Process and Technique for Order Preference by Similarity to ideal Solution (TOPSIS): An Empirical Study,” *J. Inst. Eng. India Ser. C*, vol. 100, no. 4, hlm. 707–715, Agu 2019, doi: 10.1007/s40032-019-00520-2.
- [47] M. Boxwell, *The Solar Electricity Handbook – A simple, practical guide to solar energy – designing and installing solar photovoltaic systems*, 14 ed. Birmingham, United Kingdom: Greenstream Publishing, 2021.
- [48] “On Grid Solar System (5kwp 10kwp),” indiamart.com. Diakses: 27 Juni 2023. [Daring]. Tersedia pada: <https://www.indiamart.com/proddetail/on-grid-solar-system-5kwp-10kwp-22193819197.html>



- [49] M. Dhimish dan S. Silvestre, “Estimating the impact of azimuth-angle variations on photovoltaic annual energy production,” *Clean Energy*, vol. 3, no. 1, hlm. 47–58, Feb 2019, doi: 10.1093/ce/zky022.
- [50] Tafara Mahachi dan A. J. Rix, “Energy yield analysis and evaluation of solar irradiance models for a utility scale solar PV plant in South Africa,” 2016, doi: 10.13140/RG.2.2.17960.72969.
- [51] J. G. Worden dan M. Zuercher-Martinson, “What Goes on Inside the Magic Box How Inverters Work,” 2009. [Daring]. Tersedia pada: <https://api.semanticscholar.org/CorpusID:14411759>
- [52] M. Fedkin dan J. A. Dutton, “PV--Grid connection,” e-Education Institute, College of Earth and Mineral Sciences, Penn State University. Diakses: 22 Juni 2023. [Daring]. Tersedia pada: <https://www.e-education.psu.edu/eme812/node/737>
- [53] M. A. Chaaban, “Commercial Solar Electric Systems,” e-Education Institute, College of Earth and Mineral Sciences, Penn State University. Diakses: 22 Juni 2023. [Daring]. Tersedia pada: <https://www.e-education.psu.edu/ae868/node/904>
- [54] C. Marcy, “Solar plants typically install more panel capacity relative to their inverter capacity,” U.S. Energy Information Administration. Diakses: 23 Juni 2023. [Daring]. Tersedia pada: <https://www.eia.gov/todayinenergy/detail.php?id=35372>
- [55] “Grid-Connected Solar PV Systems - Clean Energy Council Install and Supervise Guidelines for Accredited Installers Version 13.” Clean Energy Council, April 2019.
- [56] J. Good dan J. X. Johnson, “Impact of inverter loading ratio on solar photovoltaic system performance,” *Appl. Energy*, vol. 177, hlm. 475–486, 2016, doi: <https://doi.org/10.1016/j.apenergy.2016.05.134>.
- [57] “Solar plants typically install more panel capacity relative to their inverter capacity,” U.S. Energy Information Administration. Diakses: 12 Juni 2023. [Daring]. Tersedia pada: <https://www.eia.gov/todayinenergy/detail.php?id=35372>
- [58] M. Alonso Abella dan F. Chenlo, “Choosing the right inverter for grid-connected PV systems,” *Renew. Energy World*, vol. 7, hlm. 132–147, Jan 2004.
- [59] C. Li, “Comparative Performance Analysis of Grid-Connected PV Power Systems with Different PV Technologies in the Hot Summer and Cold Winter Zone,” *Int. J. Photoenergy*, vol. 2018, hlm. 1–9, Okt 2018, doi: 10.1155/2018/8307563.
- [60] “Standard IEC 61724: Photovoltaic system performance monitoring – Guidelines for measurement, data exchange and analysis.” 2017. [Daring]. Tersedia pada: <https://webstore.iec.ch/publication/33622>.



- [61] L. Fernández, “Average capacity factor for utility-scale solar PV systems worldwide from 2010 to 2021,” Statista. Diakses: 27 Juni 2023. [Daring]. Tersedia pada: <https://www.statista.com/statistics/799330/global-solar-pv-installation-cost-per-kilowatt/>
- [62] R. Kumar, C. S. Rajoria, A. Sharma, dan S. Suhag, “Design and simulation of standalone solar PV system using PVsyst Software: A case study,” *Mater. Today Proc.*, vol. 46, hlm. 5322–5328, 2021, doi: 10.1016/j.matpr.2020.08.785.
- [63] M. Gross, “What is PVsyst? Comprehensive Guide 2023,” Partner Engineering and Science, Inc. Diakses: 28 Juni 2023. [Daring]. Tersedia pada: <https://www.partneresi.com/resources/articles/what-is-pvsyst-comprehensive-guide-2023/>
- [64] J. Kneifel dan D. Webb, “Life cycle cost manual for the federal energy management program,” National Institute of Standards and Technology, Gaithersburg, MD, NIST HB 135-2020, Sep 2020. doi: 10.6028/NIST.HB.135-2020.
- [65] S. A. Ross, R. Westerfield, dan B. D. Jordan, *Fundamentals of corporate finance*, Thirteenth edition. dalam The McGraw Hill Education series in finance, insurance, and real estate. New York: McGraw Hill, 2022.
- [66] D. A. Santiari, “Studi Pemanfaatan Pembangkit Listrik Tenaga Surya Sebagai Catu Daya Tambahan Pada Industri Perhotelan Di Nusa Lembongan Bali,” Thesis, Universitas Udayana, Jimbaran, Bali, 2011.
- [67] S. Raikar dan S. Adamson, “Renewable energy finance in the international context,” dalam *Renewable Energy Finance*, Elsevier, 2020, hlm. 185–220. doi: 10.1016/B978-0-12-816441-9.00013-1.
- [68] J. K. Yates, *Engineering economics*. Boca Raton London New York: CRC Press Taylor & Francis Group, 2017.
- [69] J. Fernando, “Net Present Value (NPV): What It Means and Steps to Calculate It,” Investopedia. Diakses: 3 Juli 2023. [Daring]. Tersedia pada: <https://www.investopedia.com/terms/n/npv.asp>
- [70] R. Barbosa, B. Escobar, V. M. Sánchez, dan J. Ortégón, “Effects of the size and cost reduction on a discounted payback period and levelized cost of energy of a zero-export photovoltaic system with green hydrogen storage,” *Heliyon*, vol. 9, no. 6, hlm. e16707, Jun 2023, doi: 10.1016/j.heliyon.2023.e16707.
- [71] G. Reniers, L. Talarico, dan N. Paltrinieri, “Cost-Benefit Analysis of Safety Measures,” dalam *Dynamic Risk Analysis in the Chemical and Petroleum Industry*, Elsevier, 2016, hlm. 195–205. doi: 10.1016/B978-0-12-803765-2.00016-0.



- [72] “Suku Bunga Kredit Rupiah Menurut Kelompok Bank 2023,” Badan Pusat Statistik. Diakses: 7 Juli 2023. [Daring]. Tersedia pada: <https://www.bps.go.id/indicator/13/383/1/suku-bunga-kredit-rupiah-menurut-kelompok-bank.html>
- [73] “Data Inflasi,” Bank Sentral Republik Indonesia. Diakses: 7 Juli 2023. [Daring]. Tersedia pada: <https://www.bi.go.id/id/statistik/indikator/data-inflasi.aspx>
- [74] <https://solaranalytica.com>, “Tier-1 Solar Panels List 2022 (Q1, Q2, Q3, Q4).” Diakses: 4 Juni 2023. [Daring]. Tersedia pada: <https://solaranalytica.com/tier-1-solar-panels/>
- [75] E. Walker, “The Best Solar Panel Companies & Manufacturers | EnergySage,” EnergySage Blog. Diakses: 4 Juni 2023. [Daring]. Tersedia pada: <https://news.energysage.com/best-solar-panel-manufacturers-usa/>
- [76] M. Lewis, “These are the top 10 solar manufacturers of 2021,” Electrek. Diakses: 4 Juni 2023. [Daring]. Tersedia pada: <https://electrek.co/2021/11/03/top-10-solar-manufacturers-of-2021/>
- [77] “What are Tier 1 Solar Panels? - Naked Solar,” Naked Solar. Diakses: 8 Juli 2023. [Daring]. Tersedia pada: <https://naked solar.co.uk/what-are-tier-1-solar-panels/>
- [78] D. Werdiono, “ITN Malang Punya PLTS Berkapasitas 500 kWp,” [kompas.id](https://www.kompas.id). Diakses: 12 Juli 2023. [Daring]. Tersedia pada: <https://www.kompas.id/baca/ilmu-pengetahuan-teknologi/2022/03/23/itn-malang-punya-plts-berkapasitas-500-kwp>
- [79] D. Thevenard dan S. Pelland, “Estimating the uncertainty in long-term photovoltaic yield predictions,” *Sol. Energy*, vol. 91, hlm. 432–445, Mei 2013, doi: 10.1016/j.solener.2011.05.006.
- [80] “Pembiayaan Pembangkit Listrik Tenaga Surya.” Lembaga Pembangunan Internasional Amerika Serikat (USAID), 2016.

