

## DAFTAR PUSTAKA

- Abeth Novria Sonjaya, Dolar Marpaung, Sri Wiji Lestari, Nur Witdi Yanto, and Yeti Widyawati, "Potensi Energi Terbarukan di Sumatra Tahun 2020-2050 Menggunakan Long-range Energy Alternatives Planning System (LEAP)," *Jurnal Teknologi*, vol. 11, no. 1, pp. 36–57, Nov. 2023, doi: <https://doi.org/10.31479/jtek.v11i1.277>.
- A. H. A. El-Sayed, A. Khalil, and M. Yehia, "Modeling alternative scenarios for Egypt 2050 energy mix based on LEAP analysis," *Energy*, vol. 266, p. 126615, Mar. 2023, doi: <https://doi.org/10.1016/j.energy.2023.126615>.
- A. K. Awopone, A. F. Zobaa, and W. Banuenumah, "Techno-economic and environmental analysis of power generation expansion plan of Ghana," *Energy Policy*, vol. 104, pp. 13–22, May 2017, doi: <https://doi.org/10.1016/j.enpol.2017.01.034>.
- Asean Centre For Energy, "Opportunities and Challenges for CO2 Cross-Border Transportation in ASEAN to Advance CCS Towards a Net Zero Future," ASEAN Centre for Energy (ACE) and Japan Organization for Metals and Energy Security (JOGMEC), May 2024. Available: <https://aseanenergy.org/publications/opportunities-and-challenges-for-co2-transportation-in-asean/>
- Asean Centre For Energy, "The 8th ASEAN Energy Outlook," ASEAN Centre for Energy (ACE), Sep. 2024. Available: <https://aseanenergy.org/publications/the-8th-asean-energy-outlook/>
- Asian Development Bank (ADB), "Carbon Pricing For Energy Transition And Decarbonization," Nov. 2022. Available: <https://www.adb.org/publications/carbon-pricing-energy-transition-decarbonization>
- A. Subramanian, T. Gundersen, and T. Adams, "Modeling and Simulation of Energy Systems: A Review," *Processes*, vol. 6, no. 12, p. 238, Nov. 2018, doi: <https://doi.org/10.3390/pr6120238>.
- "An Energy Sector Roadmap to Net Zero Emissions in Indonesia," International Energy Agency, Sep. 2022.
- Badan Pusat Statistik Provinsi Sumatera Utara, "Pertumbuhan Ekonomi Sumatera Utara Triwulan IV-2023," Feb. 2024. Available: <https://sumut.bps.go.id/pressrelease/2024/02/05/1212/ekonomi-sumatera-utara-tahun-2023-tumbuh-sebesar-5-01-persen--c-to-c-.html>
- B. Gavurova, M. Rigelsky, and V. Ivankova, "Greenhouse Gas Emissions and Health in the Countries of the European Union," *Frontiers in Public Health*, vol. 9, no. 756652, Dec. 2021, doi: <https://doi.org/10.3389/fpubh.2021.756652>.

- B. S. Koelbl, M. A. van den Broek, A. P. C. Faaij, and D. P. van Vuuren, "Uncertainty in Carbon Capture and Storage (CCS) deployment projections: a cross-model comparison exercise," *Climatic Change*, vol. 123, no. 3–4, pp. 461–476, Feb. 2014, doi: <https://doi.org/10.1007/s10584-013-1050-7>.
- "Bagaimana listrik bisa sampai ke rumah kita ?," *pdkb.id*, Jun. 25, 2020. <https://pdkb.id/read/89/bagaimana-listrik-bisa--sampai-ke-rumah-kita-.html>
- C. Böhringer and T. F. Rutherford, "Combining bottom-up and top-down," *Energy Economics*, vol. 30, no. 2, pp. 574–596, Mar. 2008, doi: 10.1016/j.eneco.2007.03.004.
- C. Defeuilley, "Energy transition and the future(s) of the electricity sector," *Utilities Policy*, vol. 57, pp. 97–105, Apr. 2019, doi: <https://doi.org/10.1016/j.jup.2019.03.002>.
- C. G. Heaps, "LEAP: The Low Emissions Analysis Platform," [Software version: 2020.1.112], Stockholm Environment Institute, Somerville, MA, USA, 2022.
- Climate Watch, "Greenhouse Gas (GHG) Emissions | Climate Watch," [www.climatewatchdata.org](http://www.climatewatchdata.org). Available : [https://www.climatewatchdata.org/ghg-emissions?end\\_year=2021&source=GCP&start\\_year=1960](https://www.climatewatchdata.org/ghg-emissions?end_year=2021&source=GCP&start_year=1960)
- Dewan Energi Nasional , "Laporan Analisis Neraca Energi Nasional 2023," Jan. 2024. Available: <https://den.go.id/publikasi/Neraca-Energi#>
- Dewan Energi Nasional, "Outlook Energi Indonesia 2023," Jan. 2024. Available: <https://den.go.id/publikasi/Outlook-Energi-Indonesia>
- Ditjen Dukcapil Kemendagri, *DUKCAPIL.KEMENDAGRI.GO.ID*. <https://dukcapil.kemendagri.go.id/page/read/data-kependudukan>
- D. Lestari, A. P Samosir, and M. Sujai, *Transisi Energi: Suatu Kebijakan, Implementasi, dan Pendanaan*. Gramedia Pustaka Utama (GPU), 2020.
- D. Schlissel, "Boundary Dam 3 Coal Plant Achieves Goal of Capturing 4 Million Metric Tons of CO2 But Reaches the Goal Two Years Late ," Institute for Energy Economics and Financial Analysis (IEEFA), Apr. 2021.
- Ember Climate, "Global Electricity Review 2023," Apr. 2023. Available: <https://ember-climate.org/insights/research/global-electricity-review-2023/#supporting-material>
- E. S. Rubin, J. E. Davison, and H. J. Herzog, "The cost of CO2 capture and storage," *International Journal of Greenhouse Gas Control*, vol. 40, pp. 378–400, Sep. 2015, doi: <https://doi.org/10.1016/j.ijggc.2015.05.018>.
- "Global Status of CCS 2021," Global CCS Institute, Oct. 2021. Available: <https://www.globalccsinstitute.com/resources/publications-reports-research/global-status-of-ccs-2021/>
- H. Farzaneh, *Energy Systems Modeling: Principles and Applications*. Springer, 2019.



Kementerian Energi dan Sumber Daya Mineral and Danish Energy Agency, "Technology Data for the Indonesian Power Sector," Mar. 2024.

- K. Handayani, I. Overland, B. Suryadi, and R. Vakulchuk, "Integrating 100% renewable energy into electricity systems: A net-zero analysis for Cambodia, Laos, and Myanmar," *Energy Reports*, vol. 10, pp. 4849–4869, Nov. 2023, doi: <https://doi.org/10.1016/j.egyr.2023.11.005>.
- K. Handayani and P. Anugrah, "Assessing the implications of net-zero emissions pathways: An analysis of the Indonesian power sector," *2021 International Conference on Technology and Policy in Energy and Electric Power (ICT-PEP)*, vol. 96, pp. 270–275, Sep. 2021, doi: <https://doi.org/10.1109/ict-pep53949.2021.9600954>.
- K. Handayani, P. Anugrah, F. Goembira, I. Overland, B. Suryadi, and A. Swandaru, "Moving beyond the NDCs: ASEAN pathways to a net-zero emissions power sector in 2050," *Applied Energy*, vol. 311, p. 118580, Apr. 2022, doi: <https://doi.org/10.1016/j.apenergy.2022.118580>.
- K. Handayani, T. Filatova, Y. Krozer, and P. Anugrah, "Seeking for a climate change mitigation and adaptation nexus: Analysis of a long-term power system expansion," *Applied Energy*, vol. 262, p. 114485, Mar. 2020, doi: <https://doi.org/10.1016/j.apenergy.2019.114485>.
- K. Novak Mavar, N. Gaurina-Međimurec, and L. Hrnčević, "Significance of Enhanced Oil Recovery in Carbon Dioxide Emission Reduction," *Sustainability*, vol. 13, no. 4, p. 1800, Feb. 2021, doi: <https://doi.org/10.3390/su13041800>.
- M. Bui *et al.*, "Carbon capture and storage (CCS): the way forward," *Energy & Environmental Science*, vol. 11, no. 5, pp. 1062–1176, 2018, doi: [10.1039/c7ee02342a](https://doi.org/10.1039/c7ee02342a).
- M. E. Boot-Handford *et al.*, "Carbon capture and storage update," *Energy Environ. Sci.*, vol. 7, no. 1, pp. 130–189, 2014, doi: <https://doi.org/10.1039/c3ee42350f>.
- Menteri Energi dan Sumber Daya Mineral Republik Indonesia, *Keputusan Menteri Energi dan Sumber Daya Mineral No. 22 Tahun 2019 Tentang Pedoman Penyelenggaraan Inventarisasi dan Mitigasi Gas Rumah Kaca Bidang Energi*. 2019.
- Menteri Energi dan Sumber Daya Mineral Republik Indonesia, *Keputusan Menteri Energi dan Sumber Daya Mineral Nomor 143 K/20/MEM/2019 Tentang Rencana Umum Ketenagalistrikan Nasional (RUKN) Tahun 2019-2038*. 2019.
- Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia, *Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.15/MENLHK/SETJEN/KUM.1/4/2019 Tentang Baku Mutu Emisi Pembangkit Listrik Tenaga Termal*. 2019.
- M. Lackner, B. Sajjadi, and W.-Y. Chen, Eds., *Handbook of Climate Change Mitigation and Adaptation*, 3rd ed. Cham, Switzerland: Springer Nature Switzerland AG, 2022, pp. 3047-3086. doi: [10.1007/978-3-030-72579-2](https://doi.org/10.1007/978-3-030-72579-2).

- M. Z. Jacobson, *Air pollution and global warming : history, science and solutions*. Cambridge, Uk: Cambridge University Press, 2012.
- P. Christi, “Does Indonesia’s Carbon Tax Have the Power to Trigger a Sustainable Market Shift?,” *SEADS*, Jun. 14, 2022. <https://seads.adb.org/solutions/does-indonesias-carbon-tax-have-power-trigger-sustainable-market-shift>
- Pemerintah Republik Indonesia, *Enhanced Nationally Determined Contributions (NDCs) Republic of Indonesia*, 2022.
- Pemerintah Provinsi Sumatera Utara, *Peraturan Daerah Sumatera Utara Nomor 4 Tahun 2022 tentang Rencana Umum Energi Daerah Provinsi Sumatera Utara Tahun 2022-2050*. 2022.
- Pemerintah Republik Indonesia, *Undang-Undang Republik Indonesia Nomor 7 Tahun 2021 Tentang Harmonisasi Peraturan Perpajakan*, 2021.
- “Pemerintah Kejar Tingkatkan Bauran EBT,” *ESDM*, Jan. 18, 2024. <https://www.esdm.go.id/en/media-center/news-archives/pemerintah-kejar-tingkatkan-bauran-ebt>
- “Power Systems in Transition,” International Energy Agency, Oct. 2020. Available: <https://www.iea.org/reports/power-systems-in-transition>
- Presiden Republik Indonesia, *Peraturan Pemerintah Republik Indonesia Nomor 79 Tahun 2014 Tentang Kebijakan Energi Nasional*. 2014.
- Presiden Republik Indonesia, *Peraturan Presiden Nomor 112 Tahun 2022 tentang Percepatan Pengembangan Energi Terbarukan Untuk Penyediaan Tenaga Listrik*. 2022.
- Presiden Republik Indonesia, *Undang-Undang Republik Indonesia Nomor 30 Tahun 2007 Tentang Energi*. 2007.
- Presiden Republik Indonesia, *Undang-Undang Republik Indonesia Nomor 30 Tahun 2009 Tentang Ketenagalistrikan*. 2009.
- Presiden Republik Indonesia, *Undang-Undang Republik Indonesia Nomor 16 Tahun 2016 Tentang Pengesahan Paris Agreement to the United Nations Framework Convention on Climate Change*. 2016.
- Presiden Republik Indonesia, *Peraturan Presiden Republik Indonesia Nomor 22 Tahun 2017 Tentang Rencana Umum Energi Nasional (RUEN)*. 2017.
- Presiden Republik Indonesia, *Peraturan Presiden Republik Indonesia Nomor 98 Tahun 2021 Tentang Penyelenggaraan Nilai Ekonomi Karbon untuk Pencapaian Target Kontribusi yang Ditetapkan Secara Nasional dan Pengendalian Emisi Gas Rumah Kaca dalam Pembangunan Nasional*, 2021.
- PT PLN (Persero), “Rencana Usaha Penyediaan Tenaga Listrik 2021-2030 ,” 2021.
- Sigi Syah Wibowo, *Analisa Sistem Tenaga*. UPT Percetakan dan Penerbitan Polinema, 2018.

- S. P. Kanugrahan, D. F. Hakam, and H. Nugraha, "Techno-Economic Analysis of Indonesia Power Generation Expansion to Achieve Economic Sustainability and Net Zero Carbon 2050," *Sustainability*, vol. 14, no. 15, p. 9038, Jul. 2022, doi: <https://doi.org/10.3390/su14159038>.
- S. Ulina, S. Hasan, E. Warman, and Y. Tri Nugraha, "Analisis Potensi Energi Baru dan Terbarukan Di Sumatera Utara Sampai Tahun 2028 Menggunakan Software LEAP," *RELE (Rekayasa Elektrikal dan Energi) : Jurnal Teknik Elektro*, vol. 5, no. 1, Jul. 2022, doi: <https://doi.org/10.30596/rele.v5i1.10786>.
- S. Zhang, L. Liu, L. Zhang, Y. Zhuang, and J. Du, "An optimization model for carbon capture utilization and storage supply chain: A case study in Northeastern China," *Applied Energy*, vol. 231, pp. 194–206, Dec. 2018, doi: <https://doi.org/10.1016/j.apenergy.2018.09.129>.
- United Nations Framework Convention on Climate Change, "Paris Agreement," Dec. 2015.
- Vaclav Smil, *Energy Transitions: History, Requirements, Prospects*. Santa Barbara, CA: Praeger, 2010.
- Vaclav Smil, *Energy Transitions : Global and National Perspectives*. Santa Barbara, California: Praeger, An Imprint Of Abc-Clio, Llc, 2017.
- V. Wambui, F. Njoka, J. Muguthu, and P. Ndwali, "Scenario analysis of electricity pathways in Kenya using Low Emissions Analysis Platform and the Next Energy Modeling system for optimization," *Renewable and Sustainable Energy Reviews*, vol. 168, p. 112871, Oct. 2022, doi: <https://doi.org/10.1016/j.rser.2022.112871>.
- Y. Ayuketah, S. Gyamfi, F. A. Diawuo, and A. S. Dagoumas, "Power generation expansion pathways: A policy analysis of the Cameroon power system," *Energy Strategy Reviews*, vol. 44, p. 101004, Nov. 2022, doi: <https://doi.org/10.1016/j.esr.2022.101004>.
- Z. Ren, S. Zhang, H. Liu, R. Huang, H. Wang, and L. Pu, "The feasibility and policy engagements in achieving net zero emission in China's power sector by 2050: A LEAP-REP model analysis," *Energy conversion and management*, vol. 304, pp. 118230–118230, Mar. 2024, doi: <https://doi.org/10.1016/j.enconman.2024.118230>.