

DAFTAR PUSTAKA

- Abrar, I., Arora, T., & Khandelwal, R. (2023). Bioalcohols as An Alternative Fuel for Transportation: Cradle to Grave Analysis. *Fuel Processing Technology*, 242, 107646. <https://doi.org/10.1016/j.fuproc.2022.107646>
- Akorede, M. F., Hizam, H., Ab Kadir, M. Z. A., Aris, I., & Buba, S. D. (2012). Mitigating The Anthropogenic Global Warming in The Electric Power Industry. *Renewable and Sustainable Energy Reviews*, 16(5), 2747–2761. <https://doi.org/10.1016/j.rser.2012.02.037>
- Albert Yansen, Danny Indra Satya, Thom Deutmar Londo Doaly, & Dokman Marulitua Situmorang. (2021). Limbah Ampas Kopi sebagai Alternatif Bahan Bakar Industri untuk Menggantikan Penggunaan Batubar. *Seminar Nasional TREN Technology of Renewable Energy and Development*, 1(1).
- Andrew, R. M. (2018). Global CO₂ Emissions From Cement Production. *Earth System Science Data*, 10(1), 195–217. <https://doi.org/10.5194/essd-10-195-2018>
- Arena, U. (2012). Process and Technological Aspects of Municipal Solid Waste Gasification. A Review. *Waste Management*, 32(4), 625–639. <https://doi.org/10.1016/j.wasman.2011.09.025>
- Baidya, R., Ghosh, S. K., & Parlikar, U. V. (2016). Co-processing of Industrial Waste in Cement Kiln – A Robust System for Material and Energy Recovery. *Procedia Environmental Sciences*, 31, 309–317. <https://doi.org/10.1016/j.proenv.2016.02.041>
- Barbhuiya, S., Bhusan Das, B., & Adak, D. (2024). Roadmap to A Net-Zero Carbon Cement Sector: Strategies, innovations and policy imperatives. In *Journal of Environmental Management* (Vol. 359). Academic Press. <https://doi.org/10.1016/j.jenvman.2024.121052>
- Bazaraa, M. S., & Jarvis, J. J. (2011). *Linear Programming and Network Flows* (3rd ed.). John Wiley & Sons.
- Beguedou, E., Narra, S., Afrakoma Armoo, E., Agboka, K., & Damgou, M. K. (2023). Alternative Fuels Substitution in Cement Industries for Improved Energy Efficiency and Sustainability. *Energies*, 16(8). <https://doi.org/10.3390/en16083533>
- Benhelal, E., Shamsaei, E., & Rashid, M. I. (2021). Challenges Against CO₂ Abatement Strategies in Cement Industry: A Review. *Journal of Environmental Sciences (China)*, 104, 84–101. <https://doi.org/10.1016/j.jes.2020.11.020>
- Berndes, G., Abt, B., Asikainen, A., Cowie, A., Dale, V., Egnell, G., Lindner, M., Marelli, L., Paré, D., Pingoud, K., & Yeh, S. (2016). *Forest Biomass, Carbon Neutrality and Climate Change Mitigation*.

- Boesch, M. E., Koehler, A., & Hellweg, S. (2009). Model for Cradle-to-Gate Life Cycle Assessment of Clinker Production. *Environmental Science and Technology*, 43(19), 7578–7583. <https://doi.org/10.1021/es900036e>
- Cancio Díaz, Y., Sánchez Berriel, S., Heierli, U., Favier, A. R., Sánchez Machado, I. R., Scrivener, K. L., Martirena Hernández, J. F., & Habert, G. (2017). Limestone Calcined Clay Cement as A Low-Carbon Solution to Meet Expanding Cement Demand in Emerging Economies. *Development Engineering*, 2, 82–91. <https://doi.org/10.1016/j.deveng.2017.06.001>
- Cement Sustainability Initiative (CSI). (2014). *The Cement Industry Creating Solutions for Safe, Resource-Efficient Waste Management*.
- Chang, K.-H. (2015). Chapter 19 - Multiobjective Optimization and Advanced Topics. In K.-H. Chang (Ed.), *Engineering Design and Optimization* (pp. 1105–1173). Academic Press. <https://doi.org/10.1016/B978-0-12-382038-9.00019-3>
- Chen, L., Msigwa, G., Yang, M., Osman, A. I., Fawzy, S., Rooney, D. W., & Yap, P. S. (2022). Strategies to Achieve A Carbon Neutral Society: A Review. In *Environmental Chemistry Letters* (Vol. 20, Number 4, pp. 2277–2310). Springer Science and Business Media Deutschland GmbH. <https://doi.org/10.1007/s10311-022-01435-8>
- Cherubini, F., Peters, G. P., Berntsen, T., Strømman, A. H., & Hertwich, E. (2011). CO₂ Emissions from Biomass Combustion for Bioenergy: Atmospheric Decay and Contribution to Global Warming. *GCB Bioenergy*, 3(5), 413–426. <https://doi.org/10.1111/j.1757-1707.2011.01102.x>
- Cortada Mut, M. D. M., Nørskov, L. K., Frandsen, F. J., Glarborg, P., & Dam-Johansen, K. (2015). Review: Circulation of Inorganic Elements in Combustion of Alternative Fuels in Cement Plants. In *Energy and Fuels* (Vol. 29, Number 7, pp. 4076–4099). American Chemical Society. <https://doi.org/10.1021/ef502633u>
- Dantzig, G. B. (1963). *Linear Programming and Extensions*. RAND Corporation. <http://www.rand.org/pubs/reports/R366.html>
- Darío Gómez, A. R., Watterson Branca B Americano, J. D., Ha, C., Marland, G., Matsika, E., Nenge Namayanga, L., Osman-Elasha, B., Kalenga Saka, J. D., Treanton, K., & Quadrelli, R. (2006). *Guidelines for National Greenhouse Gas Inventories*.
- Doh Dinga, C., & Wen, Z. (2021). Many-Objective Optimization of Energy Conservation and Emission Reduction in China's Cement Industry. *Applied Energy*, 304, 117714. <https://doi.org/10.1016/j.apenergy.2021.117714>
- Doh Dinga, C., & Wen, Z. (2022). Many-Objective Optimization of Energy Conservation and Emission Reduction Under Uncertainty: A Case Study in China's Cement Industry. *Energy*, 253, 124168. <https://doi.org/10.1016/j.energy.2022.124168>
- ESDM. (2018). *Pedoman Penghitungan dan Pelaporan Inventarisasi Gas Rumah Kaca*.

- Guo, R., Wang, J., Bing, L., Tong, D., Ciais, P., Davis, S. J., Andrew, R. M., Xi, F., & Liu, Z. (2021). Global CO₂ Uptake by Cement From 1930 to 2019. *Earth System Science Data*, 13(4), 1791–1805. <https://doi.org/10.5194/essd-13-1791-2021>
- Habert, G., Billard, C., Rossi, P., Chen, C., & Roussel, N. (2010). Cement Production Technology Improvement Compared to Factor 4 Objectives. *Cement and Concrete Research*, 40(5), 820–826. <https://doi.org/10.1016/j.cemconres.2009.09.031>
- Heizer, J., & Render, B. (2005). *Operations Management* (Rini Kusmastuti, Ed.; 7th ed.). Salemba Empat.
- Hilier, F. S., & Lieberman, G. J. (2001). *Introduction to Operations Research* (7th ed.). McGraw-Hill.
- IEA Bioenergy. (2013). *Health and Safety Aspects of Solid Biomass Storage, Transportation and Feeding*.
- Ige, O. E., & Kabeya, M. (2025). Multi-Objective Optimization of Raw Mix Design and Alternative Fuel Blending for Sustainable Cement Production. *Sustainability (Switzerland)*, 17(16). <https://doi.org/10.3390/su17167438>
- Ige, O. E., Von Kallon, D. V., & Desai, D. (2024). Carbon Emissions Mitigation Methods for Cement Industry Using A Systems Dynamics Model. In *Clean Technologies and Environmental Policy* (Vol. 26, Number 3, pp. 579–597). Springer Science and Business Media Deutschland GmbH. <https://doi.org/10.1007/s10098-023-02683-0>
- International Energy Agency. (2022). *World Energy Outlook 2022*. <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf>
- IPCC. (2022). Summary for Policymakers — Global Warming of 1.5 °C. In *Global Warming of 1.5°C*. Cambridge University Press. <https://doi.org/10.1017/9781009157940.001>
- Ishak, S., & Hashim, H. (2022). Effect of Mitigation Technologies on The Total Cost and Carbon Dioxide Emissions of A Cement Plant Under Multi-Objective Mixed Linear Programming Optimisation. *Chemical Engineering Research and Design*, 186. <https://doi.org/10.1016/j.cherd.2022.07.048>
- Johnson, E. (2009). Goodbye to Carbon Neutral: Getting Biomass Footprints Right. *Environmental Impact Assessment Review*, 29(3), 165–168. <https://doi.org/10.1016/j.eiar.2008.11.002>
- Joseph, S. O., & Obodeh, O. (2015). Cement Production Optimization Modeling: A Case Study BUA Plant. *Journal of Engineering and Technology Research*, 7(4), 53–58. <https://doi.org/10.5897/jetr2015.0545>
- Kookos, I., Pontikes, Y., Angelopoulos, G., & Lyberatos, G. (2011). Classical and Alternative Fuel Mix Optimization in Cement Production Using Mathematical Programming. *Fuel*, 90, 1277–1284. <https://doi.org/10.1016/j.fuel.2010.12.016>

- Kumar Das, S., Adediran, A., Rodrigue Kaze, C., Mohammed Mustakim, S., & Leklou, N. (2022). Production, Characteristics, and Utilization of Rice Husk Ash in Alkali Activated Materials: An Overview of Fresh and Hardened State Properties. *Construction and Building Materials*, 345(128341), 1–20. <https://doi.org/10.1016/j.conbuildmat.2022.128341>
- Liu, W., Yu, Z., Xie, X., von Gadow, K., & Peng, C. (2017). A Critical Analysis of The Carbon Neutrality Assumption in Life Cycle Assessment of Forest Bioenergy Systems. *Environmental Reviews*, 26(1), 93–101. <https://doi.org/10.1139/er-2017-0060>
- Madloul, N. A., Saidur, R., Hossain, M. S., & Rahim, N. A. (2011). A Critical Review on Energy Use and Savings in The Cement Industries. In *Renewable and Sustainable Energy Reviews* (Vol. 15, Number 4, pp. 2042–2060). <https://doi.org/10.1016/j.rser.2011.01.005>
- Maharani, R., Yutaka, T., Yajima, T., & Minoru, T. (2010). Scrutiny on Physical Properties of Sawdust From Tropical Commercial Wood Species: Effects of Different Mills and Sawdust's Particle Size. *Journal of Forestry Research*, 7, 20–32. <https://doi.org/10.20886/ijfr.2010.7.1.67.20-32>
- Mikulčič, H., Klemeš, J. J., Vujanović, M., Urbaniec, K., & Duić, N. (2016). Reducing Greenhouse Gases Emissions by Fostering The Deployment of Alternative Raw Materials and Energy Sources in The Cleaner Cement Manufacturing Process. *Journal of Cleaner Production*, 136, 119–132. <https://doi.org/10.1016/j.jclepro.2016.04.145>
- MKI. (2025). *Sumbar Punya 52 Persen Potensi Energi Terbarukan, MKI Dorong Jadi Role Model Investasi Hijau Nasional*. MKI. https://mki-ieps.id/9/id_ID/west-sumatra-holds-52-renewable-energy-potential-mki-pushes-for-a-national-green-investment-role-model
- Morfopoulos, N., & Samolada, M. C. (2025). Effect of Waste-Derived Fuels (SRF/RDF) Composition on The Cement Industry's Environmental Footprint. *Waste and Biomass Valorization*, 16(8), 4027–4040. <https://doi.org/10.1007/s12649-025-03077-7>
- Murphy, F., Devlin, G., & McDonnell, K. (2013). Miscanthus Production and Processing in Ireland: An Analysis of Energy Requirements and Environmental Impacts. *Renewable and Sustainable Energy Reviews*, 23, 412–420. <https://doi.org/10.1016/j.rser.2013.01.058>
- Nie, S., Zhou, J., Yang, F., Lan, M., Li, J., Zhang, Z., Chen, Z., Xu, M., Li, H., & Sanjayan, J. G. (2022). Analysis of Theoretical Carbon Dioxide Emissions from Cement Production: Methodology and Application. *Journal of Cleaner Production*, 334, 130270. <https://doi.org/10.1016/j.jclepro.2021.130270>

- Nordhaus, W. D. (2007). To Tax or Not to Tax: Alternative Approaches to Slowing Global Warming. *Review of Environmental Economics and Policy*, 1(1), 26–44. <https://doi.org/10.1093/reep/rem008>
- Ohimain, E. I., & Izah, S. C. (2014). Energy Self-Sufficiency of Smallholder Oil Palm Processing in Nigeria. *Renewable Energy*, 63, 426–431. <https://doi.org/10.1016/j.renene.2013.10.007>
- Parveen, S., Khan, S., Kamal, M. A., Abbas, M. A., Aijaz Syed, A., & Grima, S. (2023). The Influence of Industrial Output, Financial Development, and Renewable and Non-Renewable Energy on Environmental Degradation in Newly Industrialized Countries. *Sustainability (Switzerland)*, 15(6). <https://doi.org/10.3390/su15064742>
- Priambodo, B. N., & Siswanto, N. (2024). Penetapan Strategi Ekonomis Biaya Termal Biomassa Sebagai Bahan Bakar Alternatif Di Industri Semen. *Syntax Literate*, 9(1). <https://doi.org/10.36418/syntax-literate.v9i1>
- Rahman, A., Rasul, M. G., Khan, M. M. K., & Sharma, S. (2013). Impact of Alternative Fuels on The Cement Manufacturing Plant Performance: An Overview. *Procedia Engineering*, 56, 393–400. <https://doi.org/10.1016/j.proeng.2013.03.138>
- Ruslinda, Y., Rohasyah, A., Lestari, R. A., & Durmalay, S. (2023). The Potential Utilization of Solid Waste as Alternative Fuel in Cement Industry (Case Study of PT Semen Padang). *E3S Web of Conferences*, 464. <https://doi.org/10.1051/e3sconf/202346411010>
- Schneider, M., Romer, M., Tschudin, M., & Bolio, H. (2011). Sustainable Cement Production—Present and Future. *Cement and Concrete Research*, 41(7), 642–650. <https://doi.org/10.1016/j.cemconres.2011.03.019>
- Sedjo, R. A. (2013). Comparative Life Cycle Assessments: Carbon Neutrality and Wood Biomass Energy. *Resources for the Future*. <http://dx.doi.org/10.2139/ssrn.2286237>
- Selivanov, E., Cudim, P., & Horáček, P. (2023). Carbon Neutrality of Forest Biomass for Bioenergy: A Scoping Review. In *IForest* (Vol. 16, Number 2, pp. 70–77). SISEF - Italian Society of Silviculture and Forest Ecology. <https://doi.org/10.3832/IFOR4160-015>
- Semen Indonesia. (2023, July 23). *Capturing World's Attention, SIG's Green Energy Initiative at Semen Tonasa Awarded in the Energy Management Leadership 2023 Event*. Semen Indonesia. <https://www.sig.id/en/capturing-worlds-attention-sigs-green-energy-initiative-at-semen-tonasa-awarded-in-the-energy-management-leadership-2023-event>
- Sharma, P., Sheth, P. N., & Mohapatra, B. N. (2022). Recent Progress in Refuse Derived Fuel (RDF) Co-processing in Cement Production: Direct Firing in Kiln/Calcliner vs Process Integration of RDF Gasification. In *Waste and Biomass Valorization* (Vol. 13, Number 11, pp. 4347–4374). Springer Science and Business Media B.V. <https://doi.org/10.1007/s12649-022-01840-8>

- Taha, H. A. (2017). *Operations Research An Introduction* (10, Ed.). Pearson Education Limited.
- Tsiliyannis, C. A. (2012). Alternative Fuels in Cement Manufacturing: Modeling for Process Optimization Under Direct and Compound Operation. *Fuel*, 99, 20–39. <https://doi.org/10.1016/j.fuel.2012.03.036>
- Tsiliyannis, C. A. (2016). Cement Manufacturing Using Alternative Fuels: Enhanced Productivity and Environmental Compliance Via Oxygen Enrichment. *Energy*, 113, 1202–1218. <https://doi.org/10.1016/j.energy.2016.07.082>
- Wang, J., Fu, J., Zhao, Z., Bing, L., Xi, F., Wang, F., Dong, J., Wang, S., Lin, G., Yin, Y., & Hu, Q. (2023). Benefit Analysis of Multi-Approach Biomass Energy Utilization Toward Carbon Neutrality. *Innovation*, 4(3). <https://doi.org/10.1016/j.xinn.2023.100423>
- WBCSD Cement Sustainability Initiative. (2014). *List of Constants and Default CO2 emission factors*. IPCC.
- Wiedmann, T., & Minx, J. (2007). *A Definition of “Carbon Footprint.”* www.censa.org.uk
- Wiharja, Suherman, Syafrudin, Kholiq, M. A., Pratama, R. A., Robbani, M. H., & Suryanto, F. (2025). Research on The Matching Relationship of Municipal Solid Waste Management and Alternative Fuel in Indonesia’s Cement Industry. *Case Studies in Chemical and Environmental Engineering*, 11. <https://doi.org/10.1016/j.cscee.2025.101098>
- Wiloso, E. I., Heijungs, R., Huppes, G., & Fang, K. (2016). Effect of Biogenic Carbon Inventory on The Life Cycle Assessment of Bioenergy: Challenges to The Neutrality Assumption. *Journal of Cleaner Production*, 125, 78–85. <https://doi.org/10.1016/j.jclepro.2016.03.096>
- Winston, W. L. (2004). *Operations Research Applications And Algorithms* (4th ed.). Thomson/Brooks/Cole. www.duxbury.com
- Yogatama Indriyantono, R., & Suryo Purnomo, Y. (2024). Analisis Dampak Penggunaan Bahan Bakar Alternatif dengan Metode Life Cycle Assessment di Pabrik Semen Tuban. *Jurnal Serambi Engineering*, IX(2), 8934–8940.
- Yuliarningsih, R., Goembira, F., Komala, P. S., Putra, N. P., & Nasra, M. (2020). Oil Sludge and Biomass Waste Utilization as Densified Refuse-Derived Fuels for Alternative Fuels: Case Study of an Indonesia Cement Plant. *Journal of Hazardous, Toxic, and Radioactive Waste*, 24(4). [https://doi.org/10.1061/\(asce\)hz.2153-5515.0000511](https://doi.org/10.1061/(asce)hz.2153-5515.0000511)