

DAFTAR PUSTAKA

- [1] International Energy Agency, “Renewables in Global Energy Supply,” *Renew. Energy*, no. January, p. 30, 2007, [Online]. Available: http://www.iea.org/papers/2006/renewable_factsheet.pdf
- [2] L. Suganthi and A. A. Samuel, “Energy models for demand forecasting - A review,” *Renew. Sustain. Energy Rev.*, vol. 16, no. 2, pp. 1223–1240, 2012, doi: 10.1016/j.rser.2011.08.014.
- [3] Permen ESDM No 1 Tahun 2020, “Peraturan Menteri Energi Dan Sumber Daya Mineral Republik Indonesia,” *Kemen-Esdm*, vol. 151, no. 2, pp. 10–17, 2020.
- [4] ESDM, “Keputusan Direktur Jenderal Minyak dan Gas Bumi No. 3674K/24/DJM/2006 tentang Standar dan Mutu (Spesifikasi) Bahan Bakar Minyak Jenis Bensin yang Di Pasarkan di Dalam Negeri,” 2006.
- [5] BPPT, *Indonesia Energy Outlook 2017. Clean Energy Technology Development Initiatives*. 2017.
- [6] Directorate General of of New Energy Renewable Energy and Energy Conservation, “Statistics of Directorate General of New Energy, Renewable and Energy Conservation,” 2014. [Online]. Available: <http://ebtke.esdm.go.id/post/2015/03/26/815/statistik.2014>
- [7] PT PLN (Persero), “Electricity Power Supply Business Plan 2010 - 2019,” *PT.PLN (Persero)*, p. 1006, 2010.
- [8] A. Ahmudi, I. Garniwa, C. Hudaya, S. M. Nur, and A. Sugiyono, “Multi-regional Analysis of Biomass Agriculture Waste Potential and Bio-pellet Development for Electricity in Indonesia,” *AIP Conf. Proc.*, vol. 3080, no. 1, 2024, doi: 10.1063/5.0203364.
- [9] A. Ahmudi, C. Hudaya, I. Garniwa, S. Z. Amraini, A. Sugiyono, and J. Mulyo, “Optimizing Potential Supply Chain of Biomass Agricultural Waste for Co-firing of Coal Power Plant Using MCDA , GIS , and Linear Programming in the Java and Sumatra Islands , Indonesia,” vol. 3, no. 1, 2025, doi: 10.60084/ljes.v3i1.249.
- [10] Directorate General for Renewable and Conservation Energy, “Investment Opportunity and Potential for Renewable Energy in Indonesia,” 2014. [Online]. Available: <http://ebtke.esdm.go.id/post/2015/03/26/818/potensi.dan.peluang.investasi.ebtke>
- [11] P. Biofuels and R. Electricity, “Renewable Energy Jobs,” *Renew. Energy*, p. 32, 2011, [Online]. Available: www.irena.org/DocumentDownloads/Publications/RenewableEnergyJobs.pdf
- [12] A. P. C. Faaij, “Bio-energy in Europe: Changing technology choices,” *Energy Policy*, vol. 34, no. 3, pp. 322–342, 2006, doi: 10.1016/j.enpol.2004.03.026.
- [13] S. Yokoyama, “Buku Panduan Biomassa Asia: Panduan untuk Produksi dan Pemanfaatan Biomassa.,” *Japan Inst. Energy*, 2008, [Online]. Available: http://www.jie.or.jp/biomass/AsiaBiomassHandbook/Indonesian/All_I.pdf
- [14] S. M. Nur, “Ubah paradigma agroindustri sawit menuju energi terbarukan,” 2014, [Online]. Available: http://www.academia.edu/attachments/34330895/download_file?s=portfolio
- [15] Ditjenbun, “Statistik Perkebunan Indonesia (Tree Crop Estate Statistics Of Indonesia 2017-2019) Kelapa Sawit (Palm Oil),” *Dir. Gen. Estate Crop. Minist. Agric. Indones.*, no. December 2014, pp. 1–81, 2019, [Online]. Available: <http://ditjenbun.pertanian.go.id>
- [16] D. Astiaso Garcia, S. Sangiorgio, and F. Rosa, “Estimating the potential biomasses energy source of forest and agricultural residues in the Cinque Terre Italian National Park,”

- Energy Procedia*, vol. 82, pp. 674–680, 2015, doi: 10.1016/j.egypro.2015.11.791.
- [17] M. Förster *et al.*, “A site-related suitability analysis for the production of biomass as a contribution to sustainable regional land-use,” *Environ. Manage.*, vol. 41, no. 4, pp. 584–598, 2008, doi: 10.1007/s00267-008-9068-8.
- [18] Sekretaris Jenderal Dewan Energi Nasional, *Outlook Energi Indonesia 2023*. 2023. [Online]. Available: <https://www.esdm.go.id/assets/media/content/content-outlook-energi-indonesia-2019-bahasa-indonesia.pdf>
- [19] W. B. Kusumaningrum and S. S. Munawar, “Prospect of bio-pellet as an alternative energy to substitute solid fuel based,” *Energy Procedia*, vol. 47, pp. 303–309, 2014, doi: 10.1016/j.egypro.2014.01.229.
- [20] A. Welfle, P. Gilbert, and P. Thornley, “Securing a bioenergy future without imports,” *Energy Policy*, vol. 68, no. 2014, pp. 1–14, 2014, doi: 10.1016/j.enpol.2013.11.079.
- [21] E. Trømborg, T. F. Bolkesjø, and B. Solberg, “Biomass market and trade in Norway: Status and future prospects,” *Biomass and Bioenergy*, vol. 32, no. 8, pp. 660–671, 2008, doi: 10.1016/j.biombioe.2008.02.022.
- [22] “Integrated Planning Tool for Optimising Bioenergy Production From,” *Scenario*.
- [23] S. S. Munawar and B. Subiyanto, “Characterization of Biomass Pellet Made from Solid Waste Oil Palm Industry,” *Procedia Environ. Sci.*, vol. 20, pp. 336–341, 2014, doi: 10.1016/j.proenv.2014.03.042.
- [24] J. Stich, S. Ramachandran, T. Hamacher, and U. Stimming, “Techno-economic estimation of the power generation potential from biomass residues in Southeast Asia,” *Energy*, vol. 135, pp. 930–942, 2017, doi: 10.1016/j.energy.2017.06.162.
- [25] B. Resosudarmo and D. Hartono, “THE INDONESIAN INTER-REGIONAL SOCIAL ACCOUNTING MATRIX FOR FISCAL DECENTRALISATION ANALYSIS Ditya Agung Nurdianto Kementerian Luar Negeri Republik Indonesia,” vol. 24, no. 2, pp. 145–162, 2009, [Online]. Available: <https://www.researchgate.net/publication/228468515>
- [26] Y. W. Pratama *et al.*, “Multi-objective optimization of a multiregional electricity system in an archipelagic state: The role of renewable energy in energy system sustainability,” *Renew. Sustain. Energy Rev.*, vol. 77, no. February 2017, pp. 423–439, 2017, doi: 10.1016/j.rser.2017.04.021.
- [27] B. P. Resosudarmo, D. Hartono, and D. A. Nurdianto, “Inter-Island Economic Linkages and Connections in Indonesia,” *Econ. Financ. Indones.*, vol. 56, no. 3, p. 297, 2015, doi: 10.7454/efi.v56i3.27.
- [28] M. H. Jayed, H. H. Masjuki, R. Saidur, M. A. Kalam, and M. I. Jahirul, “Environmental aspects and challenges of oilseed produced biodiesel in Southeast Asia,” *Renew. Sustain. Energy Rev.*, vol. 13, no. 9, pp. 2452–2462, 2009, doi: 10.1016/j.rser.2009.06.023.
- [29] H. Fisafarani, *Identifikasi Karakteristik Sumber Daya Biomassa dan Potensi Bio-Pelet di Indonesia*. 2010. [Online]. Available: [http://lib.ui.ac.id/file?file=digital/2016-8/20249853-S51688-Hanani Fisafarani.pdf](http://lib.ui.ac.id/file?file=digital/2016-8/20249853-S51688-Hanani%20Fisafarani.pdf)
- [30] A. Syahza, “Potensi Pembangunan Industri Hilir Kelapa Sawit Di Daerah Riau,” *Prospek Pengemb. Ind. Hilir CPO*, pp. 1–11, 2000.
- [31] M. Romli, Suprihatin, N. S. Indrasti, and A. Y. Aryanto, “Potensi Limbah Biomassa Pertanian Sebagai Bahan Baku Produksi Bioenergi (Biogas),” *Pros. Semianr Tjipto Utomo Inst. Teknologi Nas.*, no. October, pp. B71-B7-9, 2010, [Online]. Available: <http://www.researchgate.net/publication/272421716>
- [32] S. I. BPS Indonesia, “Catalog : 1101001,” *Stat. Indones. 2023*, vol. 1101001, p. 790, 2023,

- [Online]. Available:
<https://www.bps.go.id/publication/2020/04/29/e9011b3155d45d70823c141f/statistik-indonesia-2020.html>
- [33] Kementerian Energi dan Sumber Daya Mineral, “Statistik Energi Baru, Terbarukan dan Konservasi Energi 2015,” p. 89, 2015, [Online]. Available:
<http://ebtke.esdm.go.id/post/2016/02/02/1105/statistik.ebtke.2015>
- [34] B. Pranoto *et al.*, “Peta Potensi Limbah Biomassa Pertanian Dan Kehutanan Sebagai Basis Data Pengembangan Energi Terbarukan Biomass Potential Map As a Database of National Scale Biomass Energy Development,” *Ketenagalistrikan Dan Energi Terbarukan*, vol. 12, no. 2, pp. 123–130, 2013.
- [35] PLN, “Rencana Usaha Penyediaan Tenaga Listrik (RUPTL) PT PLN (Persero) 2021-2030.,” *Rencana Usaha Penyediaan Tenaga List. 2021-2030*, pp. 2019–2028, 2021, [Online]. Available: <https://web.pln.co.id/stakeholder/ruptl>
- [36] D. E. Nasional, “Arahan presiden terhadap rancangan kebijakan energi nasional,” 2012.
- [37] Peraturan Presiden, “Perpres No. 05 Thn 2006,” 2006.
- [38] W. Zegada-Lizarazu and A. Monti, “Energy crops in rotation. A review,” *Biomass and Bioenergy*, vol. 35, no. 1, pp. 12–25, 2011, doi: 10.1016/j.biombioe.2010.08.001.
- [39] A. Nikolaou, M. Remrova, and I. Jeliaskov, “Biomass availability in Europe,” *EU Energy*, no. December, pp. 1–80, 2003.
- [40] W. Phairuang, M. Hata, and M. Furuuchi, “Influence of agricultural activities, forest fires and agro-industries on air quality in Thailand,” *J. Environ. Sci. (China)*, vol. 52, pp. 85–97, 2017, doi: 10.1016/j.jes.2016.02.007.
- [41] T. Report, E. Efficiency, P. Alto, E. A Demeo, and G. Group, “Renewable Energy Technology Characterizations,” *US Dep. Energy*, vol. TR-109496, no. December, pp. 1–283, 1997, [Online]. Available: <http://www.mendeley.com/research/renewable-energy-technology-characterizations/>
- [42] M. Pertanian and R. Indonesia, “Indonesian sustainable palm oil/ispo),” *Permentan No 19 Tahun 2011 Tentang Pedoman Perkeb. Kelapa Sawit Berkelanjutan Indones.*, pp. 243–248, 2011.
- [43] P. Papilo, K. Kunaifi, E. Hambali, N. Nurmiati, and R. F. Pari, “Penilaian Potensi Biomassa Sebagai Alternatif Energi Kelistrikan,” *J. PASTI (Penelitian dan Apl. Sist. dan Tek. Ind.*, vol. 9, no. 2, pp. 164–176, 2016, [Online]. Available:
<https://publikasi.mercubuana.ac.id/index.php/pasti/article/view/480>
- [44] Y. Basiron and K. W. Chan, “The palm oil and its sustainability,” *J. Oil Palm Res.*, vol. 16, no. 1, pp. 1–10, 2004, [Online]. Available:
<http://palmoilis.mpob.gov.my/publications/jopr16n1-yusof.pdf>
- [45] Z. Anwar, M. Irshad, I. Fareed, and A. Saleem, “Characterization and Recycling of Organic Waste after Co-Composting - A Review,” *J. Agric. Sci.*, vol. 7, no. 4, pp. 70–81, 2015, doi: 10.5539/jas.v7n4p68.
- [46] K. Suzuki, N. Tsuji, Y. Shirai, M. A. Hassan, and M. Osaki, “Evaluation of biomass energy potential towards achieving sustainability in biomass energy utilization in Sabah, Malaysia,” *Biomass and Bioenergy*, vol. 97, pp. 149–154, 2017, doi: 10.1016/j.biombioe.2016.12.023.
- [47] “Sulhatun: Pemanfaatan Tandan Kosong Kelapa Sawit Sebagai Sumber Lignin, 2005. USU e-Repository©2008,” 2008.
- [48] J. I. Arranz, M. T. Miranda, I. Montero, F. J. Sepúlveda, and C. V. Rojas,

- “Characterization and combustion behaviour of commercial and experimental wood pellets in South West Europe,” 2015. doi: 10.1016/j.fuel.2014.10.059.
- [49] M. Aziz, T. Kurniawan, T. Oda, and T. Kashiwagi, “Advanced power generation using biomass wastes from palm oil mills,” *Appl. Therm. Eng.*, vol. 114, pp. 1378–1386, 2017, doi: 10.1016/j.applthermaleng.2016.11.031.
- [50] C. Palm and O. Cpo, “Your Complete solution in Oil Palm Processing”.
- [51] E. I. Ohimain, S. C. Izah, and F. A. U. Obieze, “Material-mass balance of smallholder oil palm processing in the Niger Delta, Nigeria,” *Adv. J. Food Sci. Technol.*, vol. 5, no. 3, pp. 289–294, 2013, doi: 10.19026/ajfst.5.3259.
- [52] T. Nutongkaew, W. Duangsuwan, S. Prasertsan, and P. Prasertsan, “Physicochemical and biochemical changes during composting of different mixing ratios of biogas sludge with palm oil mill wastes and biogas effluent,” *J. Mater. Cycles Waste Manag.*, vol. 16, no. 1, pp. 131–140, 2014, doi: 10.1007/s10163-013-0165-2.
- [53] Tokyo Electric Power Environmental Engineering Co. Inc., “Feasibility Study Report Palm Oil Mill Effluent (POME) Treatment Co-benefits CDM Project (Summary),” no. February, pp. 1–30, 2009.
- [54] G. Hanreich and P. F. Ruiz, *European Bio-Energy Projects*. 2002. [Online]. Available: http://europa.eu.int/comm/research/energy/pdf/european-bio-energy-projects_en.pdf
- [55] G. Kalt and L. Kranzl, “An assessment of international trade related to bioenergy use in Austria-Methodological aspects, recent developments and the relevance of indirect trade,” *Energy Policy*, vol. 46, pp. 537–549, 2012, doi: 10.1016/j.enpol.2012.04.026.
- [56] A. O. Abdulrahman and D. Huisingh, “The role of biomass as a cleaner energy source in Egypt’s energy mix,” *J. Clean. Prod.*, vol. 172, pp. 3918–3930, 2018, doi: 10.1016/j.jclepro.2017.05.049.
- [57] T. J. I. of Energy, “Buku Panduan Biomassa Asia: Panduan untuk Produksi dan Pemanfaatan Biomassa.,” *Japan Inst. Energy*, 2008.
- [58] F. A. Aziz, Liman, and Y. Widodo, “The potency of waste rice for feed of Bali Cows in Sukoharjo II Village Sukoharjo Sub-District Pringsewu District,” *J. Ilm. Peternak. Terpadu*, vol. 2, no. 1, pp. 26–32, 2014.
- [59] C. Okello, S. Pindozi, S. Faugno, and L. Boccia, “Bioenergy potential of agricultural and forest residues in Uganda,” *Biomass and Bioenergy*, vol. 56, pp. 515–525, 2013, doi: 10.1016/j.biombioe.2013.06.003.
- [60] D. Yemshanov, D. W. McKenney, S. Fraleigh, B. McConkey, T. Huffman, and S. Smith, “Cost estimates of post harvest forest biomass supply for Canada,” *Biomass and Bioenergy*, vol. 69, pp. 80–94, 2014, doi: 10.1016/j.biombioe.2014.07.002.
- [61] F. and A. O. FAO and U. N. E. P. UNEP, *A Decision Support Tool for Sustainable Bioenergy*. 2010. [Online]. Available: www.fao.org/docrep/013/am237e/am237e00.pdf
- [62] I. I. Watkinson, A. V. Bridgwater, and C. Luxmore, “Advanced education and training in bioenergy in Europe,” *Biomass and Bioenergy*, vol. 38, pp. 128–143, 2012, doi: 10.1016/j.biombioe.2011.06.038.
- [63] E. M. W. Smeets, A. P. C. Faaij, I. M. Lewandowski, and W. C. Turkenburg, “A bottom-up assessment and review of global bio-energy potentials to 2050,” *Prog. Energy Combust. Sci.*, vol. 33, no. 1, pp. 56–106, 2007, doi: 10.1016/j.pecs.2006.08.001.
- [64] P. C. a. Bergman and J. H. a. Kiel, “Torrefaction for biomass upgrading,” *Proc. 14th Eur. Biomass Conf. Paris, Fr.*, no. October, pp. 17–21, 2005, [Online]. Available: <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Torrefaction+for+biom>

- ass+upgrading#0
- [65] E. Hermiati, *Pengembangan Teknologi Konversi Biomassa Menjadi Bioetanol dan Bioproduk Sebagai Substitusi Produk Beragain Batu Fossil*. 2019.
- [66] R. C. Baliban, J. A. Elia, and C. A. Floudas, "Simultaneous process synthesis, heat, power, and water integration of thermochemical hybrid biomass, coal, and natural gas facilities," *Comput. Chem. Eng.*, vol. 37, pp. 297–327, 2012, doi: 10.1016/j.compchemeng.2011.10.002.
- [67] M. S. Ummah, *No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析Title*, vol. 11, no. 1. 2019. [Online]. Available: http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- [68] G. Galeno, M. Minutillo, and A. Perna, "From waste to electricity through integrated plasma gasification/fuel cell (IPGFC) system," *Int. J. Hydrogen Energy*, vol. 36, no. 2, pp. 1692–1701, 2011, doi: 10.1016/j.ijhydene.2010.11.008.
- [69] T. W. Widodo, A. Asari, and A. N. Elita, "Bio Energi Berbasis Jagung dan Pemanfaatan Limbahnya (Bio- Energy (Corn based) and The Utilization Its Waste)," *Balai Besar Pengemb. Mek. Pertan. Serpong Badan Litbang Pertanian, Dep. Pertan. Tromol Pos 2*, pp. 1–13, 2007.
- [70] T. Zimmer, A. Rudi, A. K. Müller, M. Fröhling, and F. Schultmann, "Modeling the impact of competing utilization paths on biomass-to-liquid (BtL) supply chains," *Appl. Energy*, vol. 208, no. June, pp. 954–971, 2017, doi: 10.1016/j.apenergy.2017.09.056.
- [71] N. S. Wales, "Biomassa sebagai bahan baku bioetanol," *J. Litbang Pertan.*, vol. 28, no. 3, pp. 101–110, 2009.
- [72] R. G. Cail and J. P. Barford, "Thermophilic semi-continuous anaerobic digestion of palm-oil mill effluent," *Agric. Wastes*, vol. 13, no. 4, pp. 295–304, 1985, doi: 10.1016/0141-4607(85)90055-1.
- [73] S. Perencanaan, P. Pembangkit, and L. Berbasis, "Strategi perencanaan pembangunan pembangkit listrik berbasis biomassa," no. November, 2013.
- [74] S. Döring, "Power from pellets: Technology and applications," *Power from Pellets Technol. Appl.*, vol. 9783642199, pp. 1–223, 2013, doi: 10.1007/978-3-642-19962-2.
- [75] R. L. Bain, "An overview of biomass combined heat and power technologies," *2004 IEEE Power Eng. Soc. Gen. Meet.*, vol. 2, pp. 1657–1659, 2004, doi: 10.1109/pes.2004.1373154.
- [76] Bappenas, "Policy paper: keselarasan kebijakan energi nasional (KEN) dengan Rencana Umum Energi Nasional (RUEN) dan Rencana Umum Energi Daerah (RUED)," p. 49, 2012.
- [77] S. A. Robinson and V. Rai, "Determinants of spatio-temporal patterns of energy technology adoption: An agent-based modeling approach," *Appl. Energy*, vol. 151, pp. 273–284, 2015, doi: 10.1016/j.apenergy.2015.04.071.
- [78] Y. Lin, F. Pan, and A. Srivastava, "A linear programming optimization model of woody biomass logistics integrating infield drying as a cost-saving preprocess in Michigan," *For. Prod. J.*, vol. 66, no. 7–8, pp. 391–400, 2016, doi: 10.13073/FPJ-D-15-00077.
- [79] J. Höhn, E. Lehtonen, S. Rasi, and J. Rintala, "A Geographical Information System (GIS) based methodology for determination of potential biomasses and sites for biogas plants in

- southern Finland,” *Appl. Energy*, vol. 113, no. 2014, pp. 1–10, 2014, doi: 10.1016/j.apenergy.2013.07.005.
- [80] H. Lee, *Handbook of Bioenergy Crops. A Complete Reference to Species, Development and Applications*, vol. 9, no. 3. 2011. doi: 10.1080/14735903.2011.590321.
- [81] E. Mateos and J. González, “Biomass utilisation in energy process,” *Renew. Energy Power Qual. J.*, vol. 1, no. 8, pp. 1514–1518, 2010, doi: 10.24084/repqj08.708.
- [82] R. L. Graham, B. C. English, and C. E. Noon, “A Geographic Information System-based modeling system for evaluating the cost of delivered energy crop feedstock,” *Biomass and Bioenergy*, vol. 18, no. 4, pp. 309–329, 2000, doi: 10.1016/S0961-9534(99)00098-7.
- [83] E. Schreurs, T. Voets, and T. Thewys, “GIS-based assessment of the biomass potential from phytoremediation of contaminated agricultural land in the Campine region in Belgium,” *Biomass and Bioenergy*, vol. 35, no. 10, pp. 4469–4480, 2011, doi: 10.1016/j.biombioe.2011.09.005.
- [84] J.-W. Kim and J. Kim, “Spatial multicriteria decision analysis: A Powerful tool for participatory decision-making in community-based tourism research,” *J. Smart Tour.*, vol. 1, no. 4, pp. 3–7, 2021, [Online]. Available: <https://doi.org/10.52255/smarttourism.2021.1.4.2>
- [85] S. Sánchez-García, D. Athanassiadis, C. Martínez-Alonso, E. Tolosana, J. Majada, and E. Canga, “A GIS methodology for optimal location of a wood-fired power plant: Quantification of available woodfuel, supply chain costs and GHG emissions,” *J. Clean. Prod.*, vol. 157, pp. 201–212, 2017, doi: 10.1016/j.jclepro.2017.04.058.
- [86] H. Long, X. Li, H. Wang, and J. Jia, “Biomass resources and their bioenergy potential estimation: A review,” *Renew. Sustain. Energy Rev.*, vol. 26, pp. 344–352, 2013, doi: 10.1016/j.rser.2013.05.035.
- [87] X. Hu, L. Zhang, L. Ye, Y. Lin, and R. Qiu, “Locating spatial variation in the association between road network and forest biomass carbon accumulation,” *Ecol. Indic.*, vol. 73, pp. 214–223, 2017, doi: 10.1016/j.ecolind.2016.09.042.
- [88] S. Sahoo, J. N. P. van Stralen, C. Zuidema, J. Sijm, C. Yamu, and A. Faaij, “Regionalization of a national integrated energy system model: A case study of the northern Netherlands,” *Appl. Energy*, vol. 306, no. October 2021, 2022, doi: 10.1016/j.apenergy.2021.118035.
- [89] H. Zhang and M. L. Lahr, “Households’ energy consumption change in China: A multi-regional perspective,” *Sustain.*, vol. 10, no. 7, pp. 1–17, 2018, doi: 10.3390/su10072486.
- [90] P. Balash, C. Nichols, and N. Victor, “Multi-regional evaluation of the U.S. electricity sector under technology and policy uncertainties: Findings from MARKAL EPA9rUS modeling,” *Socioecon. Plann. Sci.*, vol. 47, no. 2, pp. 89–119, 2013, doi: 10.1016/j.seps.2012.08.002.
- [91] T. Chang, R. Gupta, R. Inglesi-Lotz, B. Simo-Kengne, D. Smithers, and A. Trembling, “Renewable energy and growth: Evidence from heterogeneous panel of G7 countries using Granger causality,” *Renew. Sustain. Energy Rev.*, vol. 52, pp. 1405–1412, 2015, doi: 10.1016/j.rser.2015.08.022.
- [92] M. N. Mohd Idris, H. Hashim, and N. H. Razak, “Spatial optimisation of oil palm biomass co-firing for emissions reduction in coal-fired power plant,” *J. Clean. Prod.*, vol. 172, pp. 3428–3447, 2018, doi: 10.1016/j.jclepro.2017.11.027.
- [93] I. Opris and L. Caracasian, “the Web As a Tool for Training in the Renewable Energy Field,” no. November, 2015, doi: 10.13140/2.1.3995.8724.

- [94] R. Siemons *et al.*, “Bio-energy’s role in the EU Energy market, a view of developments until 2020,” no. April, p. 170 + Appendices, 2004.
- [95] Kementerian Pertanian, “Berita Negara Republik Indonesia : Peraturan Menteri Pertanian Republik Indonesia Nomor 01/Permentan/ot.140/2/2012,” *Peratur. Menteri Kesehat. Republik Indones.*, vol. 151, no. 2, pp. 10–17, 2012.
- [96] B. S. A. Purwono, Suyanta, and Rahbini, “Biogas digester as an alternative energy strategy in the marginal villages in Indonesia,” *Energy Procedia*, vol. 32, pp. 136–144, 2013, doi: 10.1016/j.egypro.2013.05.018.
- [97] “PTSEIK BPPT.”
- [98] J. Perusahaan and P. Kelapa, “Provinsi Aceh Jumlah Perusahaan Perkebunan Kelapa Sawit : 76”.
- [99] “PENCEMARAN LINGKUNGAN (Studi Kasus di Perkebunan Kelapa Sawit PT Tapian Nadenggan SMART Group , Langga Payung , Sumatera Utara) OLEH : RETNO WIDHIASTUTI PROGRAM PASCASARJANA,” 2008.
- [100] “Sinaga, Dapot: Perencanaan Faktor Produksi Tandan Buah Segar Minyak Kelapa Sawit Sumatera Utara, 2006. USU e-Repository©2008,” 2008.
- [101] PT Perusahaan Listrik Negara (Persero), “2015 - 2024,” *Rencana Usaha Penyediaan Tenaga List. 2015 - 2024*, pp. 2015–2024, 2015.
- [102] RUPTL, “Rencana usaha penyediaan tenaga listrik,” *Rencana Usaha Penyediaan Tenaga List.*, pp. 2019–2028, 2019.
- [103] T. Pln, “Progress & Rencana Implementasi Cofiring RDF/SRF PLTU,” 2021, [Online]. Available: www.pln.co.id
- [104] D. Pengadaan Strategis and P. Pln, “Disampaikan Pada FGD Cofiring PLTU Batu Bara BKF”, [Online]. Available: www.pln.co.id
- [105] S. Zhang *et al.*, “Process Modeling and Integration of Fuel Ethanol Production from Lignocellulosic Biomass Based on Double Acid Hydrolysis,” *Energy & Fuels*, vol. 23, no. 3, pp. 1759–1765, 2009, doi: 10.1021/ef801027x.