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BIOENERGY ASSETS IN THE STRATEGY FOR ACHIEVING CLIMATE NEUTRALITY: CLASSIFICATION FOR ACCOUNTING PURPOSES

Summary

The global climate and energy crises pose new challenges to humanity that require urgent solutions. The use of renewable energy sources, particularly bioenergy, is one of the ways to address these large-scale problems. The task of accounting is to provide enterprise managers with a high-quality information base on bioenergy assets to enable effective management of these assets.

The aim of the study is to develop a classification of bioenergy assets for their reflection in the enterprise's accounting information system.

The article uses general scientific and specialized analytical methods to study economic phenomena: the deduction method is used at the stage of collecting and processing information on the technological process of biofuel production; the system analysis is used to study the main approaches to asset classification in enterprises; the induction and generalization methods are applied in the process of forming classification criteria for bioenergy assets for accounting purposes.

The article examines the technology of biofuel production from energy crops and biomass, which has allowed the classification of bioenergy assets according to their participation in the economic process. The main classification criteria of bioenergy assets for accounting purposes are determined. It is proposed to use the developed classification as a theoretical basis for the formation of the accounting methodology for bioenergy assets. The research carried out and the recommendations provided are of practical value for enterprises carrying out the accounting for bioenergy assets.

Further research is needed to develop a methodology for accounting for bioenergy assets that will provide information on strategic bioenergy objects.

Keywords: bioenergy assets, accounting, biomass, biofuel, energy crops, low-carbon energy, climate.

Number of sources – 24, number of drawings – 2.

References:

1. Kaletnik, H.M., Tokarchuk, D.M. (2021). Effectiveness of growing energy crops and their processing into biofuel in the context of ensuring energy autonomy of agricultural enterprises. *Ekonomika, finansy, menedzhment: aktualni pytannia nauky i praktyky [Economics, finance, management: topical issues of science and practice]*, vol. 1, pp. 7-25 (in Ukr.).

2. Pryshliak, N.V. (2021). Potential opportunities for growing bioenergy raw materials for the production of solid biofuel. *Ahrosvit [Agroworld]*, vol. 1-2, pp. 33-45 (in Ukr.).

3. Kulyk, M., Kalynychenko, V., Pryshliak, N., Pryshliak, V. (2020). Efficiency of Using Biomass from Energy Crops for Sustainable Bioenergy Development. *Journal of Environmental Management and Tourism*, vol. XI, fall, 5 (45), pp. 1040-1053.

4. Cherep, A.V., Somchenko, V.V., Kalinchuk, V.V. (2017). Peculiarities of classification of biological assets by agricultural enterprises. *Visnyk Pryazovskoho derzhavnoho tekhnichnoho universytetu. Seriia: Ekonomichni nauky [Bulletin of the Azov State Technical University. Series: Economic Sciences]*, vol. 34, pp. 348-354 (in Ukr.).

5. Ishchenko, Ya., Serhieiev, Ya. (2024). Categorical apparatus and classification of biological assets in the conditions of implementation of organic production. *Ekonomika ta suspilstvo [Economy and society],* vol. 63. DOI: https://doi.org/10.32782/2524-0072/2024-63-109 (in Ukr.).

6. Mazur, V.A., Liubin, M.V., Tokarchuk, O.A. (2017). Means of mechanization of the process of harvesting and grinding of bioenergy crops. *Tekhnika, enerhetyka, transport APK [Technology, energy, transport of agricultural industry]*, vol. 2, pp. 129-134 (in Ukr.).

7. Oliinyk, Ye., Antonenko, V., Chaplyhin, S., Zubenko, V. (2016). *Pidhotovka ta vprovadzhennia proektiv zamishchennia pryrodnoho hazu biomasoiu pry vyrobnytstvi teplovoi enerhii v Ukraini* [Preparation and implementation of projects to replace natural gas with biomass in the production of heat energy in Ukraine]. Polygraph plus, Kyiv, 104 p. (in Ukr.).

8. Korinchuk, D.M. (2018). The influence of temperature and physical and mechanical activation of biomass on the energy consumption of the process of pressing biofuels of wood and plant origin. *Naukovyi visnyk NLTU Ukrainy [Scientific bulletin of NLTU of Ukraine]*, vol. 28(5), pp. 111-118 (in Ukr.).

9. Morone, P., Cottoni, L., Giudice, F. (2023). Biofuels: Technology, economics, and policy issues. *In: Handbook of Biofuels Production*. Pp. 55-92. DOI: 10.1016/B978-0-323-91193-1.00012-32.

10. Ambaye, T.G., Vaccari, M., Bonilla-Petriciolet, A., Prasad, S., van Hullebusch, E.D., Rtimi, S. (2021). Emerging technologies for biofuel production: A critical review on recent progress, challenges and perspectives. *Journal of Environmental Management*, vol. 290. 112627. DOI: https://doi.org/10.1016/j.jenvman.2021.112627.

11. Sukhenko, V.Yu., Avdieieva, L.B., Mushtruk, M.M. (2023). Processing of animal fats into biofuel: technologies and prospects. *Journal of Environmental Management [Thermal physics and thermal energy],* vol. 45, no. 4, pp. 92-98. DOI: https://doi.org/10/31472/ttpe.4.2023.10. (in Ukr.).

12. Hoang, A. T., Pandey, A., Huang, Z., Nižetić, S., Le, A. T., Nguyen, X. P. (2023). Biofuels an option for agro-waste management. In: Environmental *Sustainability of Biofuels*, pp. 27-47. DOI: 10.1016/B978-0-323-91159-7.00011-45.

13. Bila, Yu. (2023). Bioenergy Assets as an Innovative Accounting Object: Definition and Recognition Criteria. *Accounting and finance*, issue 4(102), pp. 5-10. DOI: https://doi.org/10.33146/2307-9878-2023-4(102)-5-10.

14. Bila, Y. (2023). Bioenergy assets in the global climate scenario: multilevel model of functions. *Herald of Economics*, vol. 3, pp. 131-143. DOI: https://doi.org/10.35774/visnyk2023.03.131.

15. Zadorozhnyi, Z.-M.V., Krupka, Ya.D., Ometsinska, I.Ya. (2015). *Kontseptsiia rozvytku bukhhalterskoho obliku, analizu ta audytu v Ukraini* [Concept of development of accounting, analysis and audit in Ukraine]. TNEU, Ternopil, 320 p. URL: http://dspace.wunu.edu.ua/bitstream/316497/5793/1/Kontseptsia_rorvytku_buhgaltersko go_obliku-2015.pdf (Accessed 26.06.2024) (in Ukr.).

16. National regulation (standard) of accounting 1 "General requirements for financial reporting" dated 07.02.2013 No. 73. URL: https://zakon.rada.gov.ua/laws/show/z0336-13#Text (Accessed 26.06.2024) (in Ukr.).

17. National regulation (standard) of accounting 30 "Biological assets" dated November 18, 2005 No. 790. URL: https://zakon.rada.gov.ua/laws/show/z1456-05#Text (Accessed 26.06.2024) (in Ukr.).

18. National regulation (standard) of accounting 7 "Fixed assets" dated 04/27/2000 No. 92. URL: https://zakon.rada.gov.ua/laws/show/z0288-00#Text (Accessed 26.06.2024) (in Ukr.).

19. National regulation (standard) of accounting 28 "Decreasing the usefulness of assets" dated 12.24.2004 No. 817. URL: https://zakon.rada.gov.ua/laws/show/z0035-05.

20. National regulation (standard) of accounting 9 "Inventories" dated October 20, 1999 No. 246. URL: https://zakon.rada.gov.ua/laws/show/z0751-99#Text (in Ukr.).

21. Sudyn, Yu. (2016). Goodwill in the accounting system: components and classification. *Accounting and Auditing. Visnyk TNEU [Oblik i audit. Herald of TNEU]*, vol. 2. URL: http://dspace.wunu.edu.ua/bitstream/316497/3952/1/Sudin Yu..pdf (Accessed 26.06.2024) (in Ukr.).

22. Sudyn, Yu. (2015). Strategic analysis of goodwill in the accounting and analytical system of the enterprise. *Svit finansiv [The world of finance]*, vol. 2, pp. 156-163. URL: http://dspace.tneu.edu.ua/handle/316497/3759 (Accessed 26.06.2024) (in Ukr.).

23. Manachynska, Yu. (2023). Transformation of the equity report into an actuarial report on changes in equity. *Visnyk Chernivetskoho torhovelno-ekonomichnoho instytutu [Bulletin of the Chernivtsi Trade and Economic Institute]*, vol. II (86), pp. 51-65. DOI: http://doi.org/10.34025/2310-8185-2022-2.86.04 (in Ukr.).

24. Rylieiev, S., Bahrii, K., Drin, I. (2023). Operational economic analysis as a component of the management system: retrospectives and modernity. *Visnyk Chernivetskoho torhovelno-ekonomichnoho instytutu [Bulletin of the Chernivtsi Trade and Economic Institute]*, vol. 1 (89), pp. 37-52. DOI: http://doi.org/10.34025/2310-8185-2023-2.90.05 (in Ukr.).