

**Ministry of Education and Science of Ukraine  
Sumy State University  
Kaunas University of Technology, School of  
Economics and Business  
University of Bradford, School of Management  
Riga Technical University  
Czech University of Life Sciences Prague  
University of New Brunswick  
International Centre for Enterprise and Sustainable**



# **"ECONOMICS FOR ECOLOGY"**

*("EU practices of education for sustainable  
development")*

*Materials  
International scientific-practical conference  
(Ukraine, Sumy, May14–17, 2024)*

*Sumy  
Sumy State University  
2024*

УДК: 330.15:502/504  
Авторський знак: S70

The conference is held within the Jean Monnet Modules “Fostering EU Practices of Education for Sustainable Development through the Brand Language: Interdisciplinary Studies” (101085708-ESDbrandEU-ERASMUS-JMO-2022-HEI-TCH-RSCH), Jean Monnet Module “Youth and Business: EU Practices for Cooperation” (101126538 — YouthBEU — ERASMUS-JMO-2023-HEI-TCH-RSCH) (2023-2026) and “Disruptive technologies for sustainable development in conditions of Industries 4.0 and 5.0: the EU Experience (101083435 — DTSDI — ERASMUS-JMO-2022-HEI-TCH-RSCH)”



Co-funded by  
the European Union

Editor-in-Chief Prof., Dr. Oleksandra Karintseva, head of the economics, entrepreneurship and business administration, Sumy State University

Approved by the Academic Council of SSI BIEM of Sumy State University  
(protocol №2, 5 September 2024)

Economics for Ecology : Proceedings of the International Scientific and Practical Conference, Sumy, May 14–17, 2024 / edited by Karintseva Oleksandra and Kubatko Oleksandr . – Sumy : Sumy State University, 2024 – 103 p. (*electronic edition*)

For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

## TABLE OF CONTENTS

<i>Yevhen Mishenin, Inessa Yarova</i>	FACILITATION IN THE MANAGEMENT OF SUSTAINABLE SPATIAL DEVELOPMENT OF FORESTRY	6
<i>Yevhen Mishenin, Inessa Yarova</i>	ENVIRONMENTAL TAXATION IN THE SYSTEM OF SOCIO-ECOLOGICAL AND ECONOMIC SECURITY	8
<i>Konoplenko Andrii</i>	ANALYSIS OF THE IT OUTSOURCING MARKET: TRENDS AND FORECASTS	11
<i>Wenyan Liu</i>	A CITATION AND PUBLICATION PERFORMANCE ANALYSIS ON INNOVATION, BUSINESS AND DIGITALISATION	13
<i>Vladyslav Piven, Oleksadra Karintseva</i>	THE IMPACT OF DEMOCRACY ON SUSTAINABLE DEVELOPMENT: A CASE OF THE EU	15
<i>Raminta Vaitiekuniene, Kristina Sutiene, Rytis Krusinskas, Bohdan Kovalov</i>	FINANCIAL AND INNOVATION PERFORMANCE OF THE COMPANIES IN THE CONTEXT OF GREEN DEAL TARGETS	17
<i>Artem Borukha, Oleksandr Kubatko</i>	DISRUPTIVE TECHNOLOGIES TO ENSURE ECONOMIC AND RESOURCE SECURITY OF UKRAINE	21
<i>Iryna Burlakova, Anastasiya Kuzchenko, Zumrut Alic</i>	THEORETICAL AND INSTITUTIONAL FOUNDATIONS OF SOCIAL SOLIDARITY ECONOMY	23
<i>Chang Shengchun</i>	THE IMPACT OF THE DIGITAL ECONOMY ON CARBON REDUCTION POTENTIAL	25
<i>Mykhailo Chortok</i>	THE ROLE OF SOCIAL SOLIDARITY ECONOMY FOR SUSTAINABLE DEVELOPMENT ESTABLISHING	29
<i>Yuliia Chortok, Solodovnyk O.</i>	FAIR-TRADE AS A TREND FOR SOCIAL SOLIDARITY ECONOMY DEVELOPMENT	31
<i>Du Shutong</i>	ESG POLICY IN BANKING AND FINANCES SECTOR: CASES OF EUROPEAN COMPANIES	33
<i>Gawel Solowski</i>	MICROBIAL HYDROGEN PRODUCTION'S RECENT ACHIEVEMENTS	35
<i>Inna Koblianska</i>	TOWARDS PROACTIVE POLICY: A FRAMEWORK FOR SAFE AND SUSTAINABLE FERTILISER MANAGEMENT	42

<i>Yuliia Lukianova</i>	PACKAGE LABELING AND SUSTAINABLE DEVELOPMENT	45
<i>Helena E. Myeya</i>	STAKEHOLDERS' ROLE IN IMPROVING SMALLHOLDER FARMERS' RESILIENCE TO CLIMATE CHANGE EFFECTS IN CENTRAL, TANZANIA	49
<i>Anna Shcherbak, Olena Nazarenko</i>	PROJECT-BASED LEARNING AS A METHOD OF FOREIGN LANGUAGE TEACHING	53
<i>Iryna Sotnyk, Maryna Nikulina</i>	STRATEGIC MANAGEMENT IN SMALL IT BUSINESS SECTOR	55
<i>Oleksandra Pavliv</i>	VIRTUAL EXCHANGE PRACTICE AS A PROCESS OF DEVELOPING SOCIOCULTURAL COMPETENCE	57
<i>Vladyslav Piven, Oleksandr Kubatko</i>	ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT: THEORETICAL ANALYSIS OF KEY FACTORS	59
<i>Tetyana Sakhnenko, Viacheslav Voronenko</i>	STIMULATING BIOGAS PRODUCTION: ECONOMIC JUSTIFICATION	61
<i>Iryna Sotnyk</i>	DEVELOPMENT OF REMOTE EMPLOYMENT AS A RESPONSE TO MODERN SOCIAL CHALLENGES IN UKRAINE	64
<i>Iryna Sotnyk, Jan-Philipp Sasse, Evelina Trutnevyte</i>	SHAPING THE DECARBONIZED FUTURE OF THE ELECTRICITY INDUSTRY IN UKRAINE	66
<i>Iryna Sotnyk, Tetiana Kurbatova</i>	COST-EFFICIENT AND GREEN: TRANSFORMING HOUSEHOLD HEATING IN UKRAINE FOR A SUSTAINABLE FUTURE	70
<i>Iryna Ushchapovska</i>	FROM THE LANGUAGE THAT SUSTAINS TO THE LANGUAGE OF SUSTAINABLE DEVELOPMENT	73
<i>Vnuchkova Viktoriia, Chulanova Halyna</i>	GAMIFYING SUSTAINABILITY EDUCATION FOR CULTURALLY DIVERSE CLASSROOMS	76
<i>Wang Fujin</i>	KEY ELEMENTS OF SUCCESSFUL ESG POLICY: EUROPEAN EXPERIENCE	79
<i>Wang Yimeng</i>	THE IMPACT OF DIGITAL ECONOMY ON THE EFFICIENCY OF GREEN TRANSFORMATION IN CHINESE CITIES	81
<i>Kostiantyn Zavrzhnyi, Anzhelika Kulyk</i>	HARNESSING GENERATIVE ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE BUSINESS TRANSFORMATION	84

<i>Amina Gura, Oleksandra Kubatko</i>	FUNCTIONING OF THE ENTERPRISE IN THE CONDITIONS OF WAR: SOCIO-ECONOMIC, ENERGY AND ENVIRONMENTAL CONSEQUENCES	87
<i>Ding Lin, Oleksandra Kubatko</i>	ECONOMIC, ECOLOGICAL AND RENEWABLE ENERGY ASPECTS OF PETROCHINA COMPANY ACTIVITY	90
<i>Tetyana Sakhnenko, Oleksandr Ponomarenko, Oleksandr Kubatko</i>	RESTRUCTURING OF ECONOMIC SYSTEMS IN THE DIRECTION OF ENSURING SUSTAINABLE DEVELOPMENT	94
<i>Jerzy Gilarowski</i>	TOURISM AS A WAY OF DEVELOPMENT AND INTEGRATION OF SUB-SAHARAN AFRICA	96
<i>Ponomarenko Ihor</i>	ECOLOGICAL TRANSFORMATION: CURRENT TRENDS IN THE IMPLEMENTATION OF GREEN TECHNOLOGIES	98
<i>Pavlo Hrytsenko, Tao Senlin</i>	THE ROLE OF VIRTUAL BUSINESS ENVIRONMENTS IN "GREEN ECONOMY" ENTITIES	101

## ECONOMIC, ECOLOGICAL AND RENEWABLE ENERGY ASPECTS OF PETROCHINA COMPANY ACTIVITY

*Ding Lin, student of BA.m-22  
Sumy State University, Ukraine*

*Oleksandra Kubatko, PhD, As. Prof.,  
Sumy State University, Ukraine*

The world practice of managing enterprises, companies and corporations that have achieved significant economic indicators shows multiple examples of the application and use of business planning of economic processes. From the development of market relations and the influence of competitive forces, planning of economic processes of companies requires special attention [6; 7]. In today's conditions, China continues to develop rapidly and has a huge influence on the world market due to growing export volumes. The PRC exerts a significant influence on the development of foreign trade and the economies of other partner countries. That is why the pace and features of international cooperation determine and even more stimulate the development of business plans for companies.

Taking into account modern trends in the world environment, the term "Business planning" is quite popular and has relatively influential advantages. However, analyzing the economy of China, we can conclude that our country has its own views and differences in the process of developing business plans and organizing activities taking into account the requirements of a permanent BP. Yes, according to Carnegie Asia Program senior fellow Yukon Huang told FRONTLINE and NPR, *"The 'Chinese model' is a mixture of national control and ownership of resources and economic activity dominated by private entrepreneurs."*[1]. Thus, the state has a substantial right to own and exercise control over energy resources and the financial system. However, taking into account the rapidly changing trends in the world and the external advantages of entering global markets, the Chinese government may delegate certain responsibilities in certain areas to other individuals or private companies. Here, attention should be paid to constant monitoring of the market, analysis and assessment of the state of the competitive environment, development of plans for the implementation of technical and innovative changes.

Taking into account the experience of European companies, domestic enterprises are trying to organize business planning, thus creating certain companies and even industries as national champions that begin to dominate the domestic economy. As a result, the prerequisites for the emergence of a specific Chinese economy with features of socialism or a socialist market economy are created.

According to the given international ranking among the countries of the world, which is published every year by the World Bank, the countries that have favorable conditions for business planning are listed. However, in some parameters

the countries do not occupy the first positions and sometimes not the best. Thus, China is above average (15 out of 28) for doing business, but below average (21 out of 28) in organizing and starting a business. This is primarily due to state control over certain spheres of business . Also, significant difficulties are observed in the payment of taxes, the value is 104 out of 190 of all countries participating in the survey. But the country has made significant progress in issuing building permits, with a value of 6 out of 28. However, taking into account the overall ranking of 190 countries, the value of China is considered the best. Therefore, it is to be hoped that the country's leadership will contribute to the development and improvement of business organization and increase the efficiency of business planning [2]

In the conditions of rapid economic development of Chinese companies, increasing the efficiency of operations and achieving competitiveness play a special role. However, it is important to consider that understanding what this efficiency and desired competitiveness depends on can lead to the achievement of the set goals. Therefore, a correctly chosen strategy of the company, corresponding volumes of production and provision of services ensure the maximum possible level of profitability. It is worth remembering that the company's activity is determined, first of all, by the economic situation, which can be influenced by macroeconomic factors, in particular, increased inflation, industry proportions and consumer demand, market conditions. It should also be added that increasing the efficiency of operations and achieving the company's competitiveness can be achieved by improving and/or expanding existing production facilities.

In this case, it is important to take into account the specifics of the production process and specialization for each specific company during business planning of companies.

Thus, in our work, we analyzed the activities of company in the oil refining industry in China. Special attention was paid to PetroChina , which was established in 1999. The main areas of the company's activities are focused on such areas as exploration, development and production of oil and natural gas, as well as processing, transportation and distribution of oil and oil products, petrochemical products and sale of natural gas. So, based on various qualifying areas of activity, the main divisions of PetroChina can be distinguished [3].

In addition, the company owns 22,800 gas stations, fuel sales for 2021 amounted to 163.3 million tons, of which 112.5 million tons — in China; the market share of the People's Republic of China is 35.3% [4]

This comparative dynamics was built on the basis of the financial data of the company. According to the diagram, it is clearly visible that the level of net profit and the level of the company's equity are independent values. Thus, the equity capital increases due to share contributions of shareholders and additional invested capital.

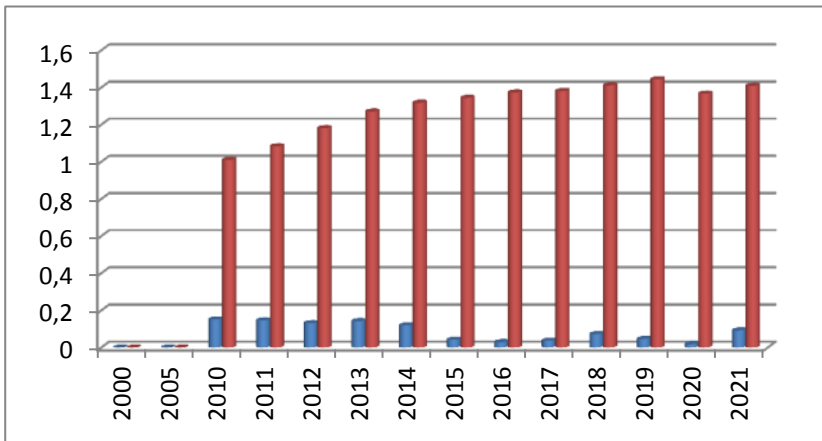


Figure 1 - Comparative dynamics of changes in net profit and equity indicators of the PetroChina company by year, billion yuan [3,4]

Having analyzed the Chinese company of the oil refining industry, it is worth noting that the development is in the direction of improvement and constant increase of profitability and efficiency of operations. PetroChina company have a strong potential for continuous economic growth and development, which creates for it economic stability and financial independence.

Thus, having strong economic potential, PetroChina directs significant investments for the development of environmentally-oriented projects with the aim of reducing carbon emissions to zero. It is planned to achieve the set goals by 2050. The management of the company directs significant capital investments in geothermal, wind and solar energy, as well as in pilot hydrogen projects. The company also plans to increase investments in solar and gas installations for electricity generation. During 2021-2025, the amount of investment was from 3-5 billion yuan per year to 10 billion yuan per year [5]

**Acknowledgment.** *This publication was prepared in the framework of the research project: Formation of Economic Mechanisms to Increase Energy Efficiency and Provide Sustainable Development of Renewable Energy in Ukraine's Households" (No. 0122U001233), funded by the National Research Foundation of Ukraine.*

## References

1. What is the China Model ? Understanding the Country's State-Led Economic Model <https://www.pbs.org/wgbh/frontline/article/china-trade-war-trump-tariff/> (05/07/2024)



2. Business Ready (B-READY) The World Bank's flagship report he business environment worldwide (<https://www.worldbank.org/en/businessready>)
3. Annual Report 2018 on SEC Filing Form 20-F PetroChina Company Limited (April 29, 2018) <https://www.sec.gov/Archives/edgar/data/1108329/000119312519123907/d676237d20f.htm>
4. Annual Report 2021 PetroChina Company Limited <https://www1.hkexnews.hk/listedco/listconews/sehk/2022/0427/2022042700819.pdf>
5. Is PetroChina really going green? <https://www.woodmac.com/news/opinion/is-petrochina-really-going-green/>
6. Economics and Business: the textbook / Edited by Dr., Prof. Leonid Melnyk, Dr., Prof. Oleksandra Karintseva. Sumy : University Book, 2021. 316 p. <https://essuir.sumdu.edu.ua/handle/123456789/83721>
7. Current trends of economic development: EU Experience and Practice of the Ukraine : the textbook / Edited by Dr., Prof. Leonid Melnyk. Sumy : University Book, 2021. 432 p. <https://essuir.sumdu.edu.ua/handle/123456789/89235>