

including by reducing the volume of imports, keeping inflation under control and slightly mitigating a deep economic recession. The focus is on financial support for the long-term development of the country, measures aimed at developing the regions, stimulating and developing agriculture, implementing educational, medical, social, cultural and physical infrastructure projects, as well as measures related to the fulfillment of obligations on external public debt and obligations associated with important events in the country. The development of the East-West railway route passing through Azerbaijan along the historical Silk Road, the transportation of goods from China, Korea, Japan through the Caspian Sea, the territory of Azerbaijan to the farthest points of Europe, cargo from the Indian Ocean region to Russia and Finland.

The process of bringing Azerbaijani wines, products of light industry, agriculture, and processing industry to foreign markets has begun. To defend our right to compete in the international arena, we must both produce high-quality products and achieve low costs so that they are competitive. In addition, along with entrepreneurs, various government structures, especially the ministries of agriculture, economy, foreign affairs, our embassies should work within the framework of a broad program of entering new markets.

References:

1. Godjaeva E.M. Finances of foreign countries and international credit relations - Baku: "NURLAR", 2021, - 475 p.
2. Suleymanov E., Mirzoev A., Gojayeva E., Eminov A. Fundamentals of the modern economy of Azerbaijan. Baku: "Muntejem" – 2019, 450 p
3. Rakhmanov F., Suleymanov E., Gojayeva E. Economy of Azerbaijan. "University Press named after Saints Cyril and Methodius". Veliko - Tarnovo - 2021, p.420

Tatar Maryna

National Aerospace University "Kharkiv Aviation Institute"

INNOVATIVE METHODS OF BUSINESS ENTITIES ECOLOGIZATION IN THE
CONTEXT OF GLOBAL CHALLENGES

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, it is necessary to provide no net emissions of greenhouse gases by 2050; economic growth decoupled from resource use; no person and no place left behind.

Ecologization should be aimed at the landmarks which are presented in Fig. 1.

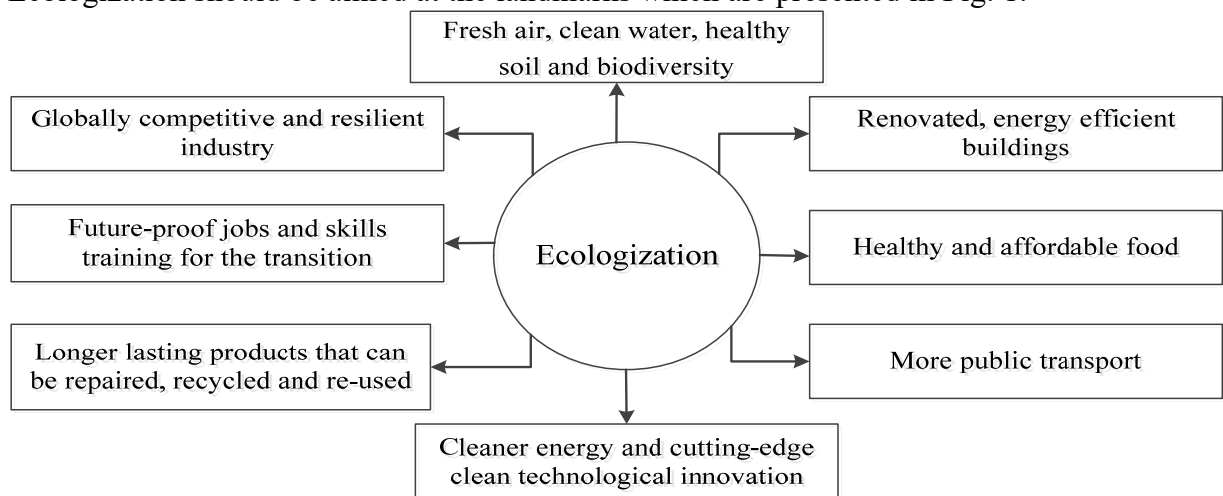


Fig. 1. Landmarks of ecologization

Source: built by the author on the bases of (A European Green Deal, 2022).

Ecologization priorities include: protecting biodiversity and ecosystems; reducing air, water and soil pollution; sustainable agriculture and reduction of greenhouse gases; moving towards a circular economy; improving waste management; ensuring the sustainability of blue economy and fisheries sectors. However, now the share of countries implementing eco-innovations, even among the developed countries of the world, is insignificant. Share of area under organic agriculture in total agricultural area is shown in Fig. 2.

In modern conditions of global challenges, to ensure ecologization, it is necessary to introduce eco-innovations. Eco-innovation is any form of innovation resulting in or aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources. Eco-innovation may be technological or non-technological (*Eco-Innovation in Europe, 2022*).

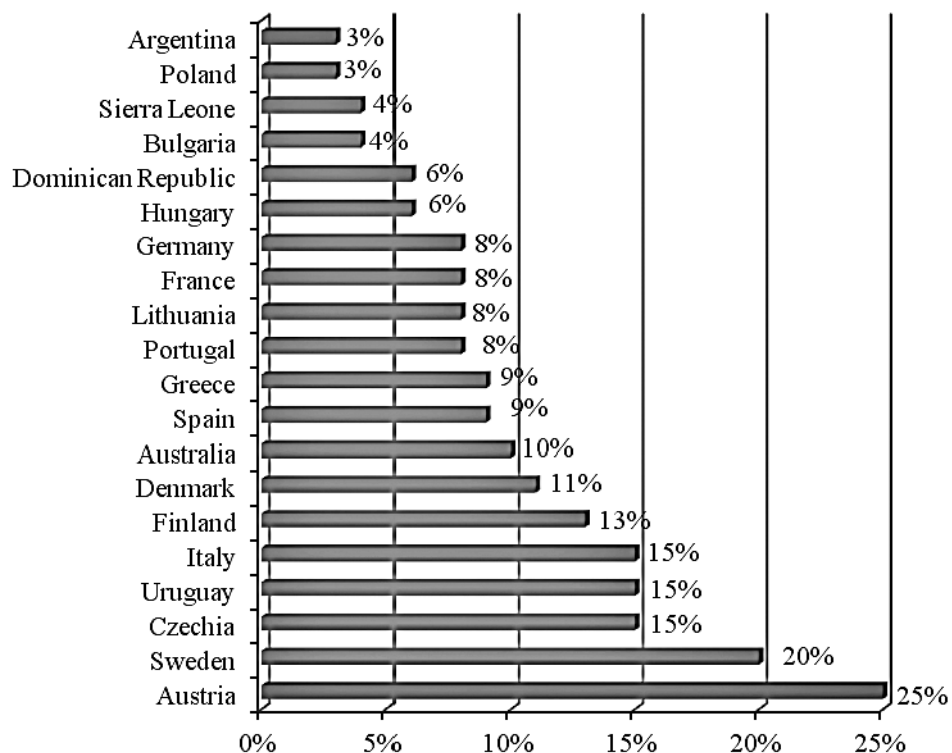


Fig. 2. Share of area under organic agriculture in total agricultural area, top countries

Source: built by the author on the bases of (A European Green Deal, 2022).

The main quantified energy and climate targets for 2030 are, throughout the EU, to achieve a reduction in greenhouse gas emissions of at least 40% compared to 1990, with the following binding targets at Union level: achieve an RES share in gross energy consumption of at least 32%, while the RES share in transport must be at least 14% in every Member State (Table 1).

Table 1 – Europe-wide targets

EU targets	EU 2030
Greenhouse gas emissions (compared to 1990)	-40%
Emissions in the ETS sector (compared to 2005)	-43%
Non-ETS greenhouse gas emissions (compared to 2005)	-30%
Total share of renewable energy sources (RES)	32%
Share of RES in transport	14%
Energy efficiency	32,5%
Interconnection of electricity systems	15%

Source: built by the author on the bases of (European Commission, 2022).

Roadmap of ecologization for Ukraine 2030 is presented in Table 2.

Table 2 – Roadmap of ecologization and climate goals for Ukraine 2030

Goals	Indicator	Ukraine	
		2021	Target for 2030
Production and consumption of energy			
Increase the proportion of renewable energy sources (RES) in the energy balance	RES in electricity production	8,6	58
	RES in heating and cooling	7,6	24
	RES in final energy supply	6,6	30
Reduction coal generated electricity	Proportion of coal generation in total electricity production	31	5
Minimize coal extraction		69 mines	Coal is only produced in mines that provide fuel for the residual/reserve TPPs for the transition period after 2030; all other state and private mines are closed.
Reduction the proportion of electricity production at nuclear power plants	Nuclear power (Installed power (GW) of operating nuclear units)	13.8 GW of nuclear power capacities (15 active reactors).	5 GW of nuclear power, no new reactors erected.
Reduction energy and carbon intensity of the economy	Primary energy consumption (toe/USD1000 2010 GDP (PPP))	0,29–0,29	0,15-0,16
	Final energy consumption (toe/USD1000 2010 GDP (PPP))	0,15	0,09
	Carbon intensity (τ CO ₂ equivalent /USD1000 2010 GDP (PPP))	0,82	0,4
Housing sector			
Reduction residential energy consumption	Specific energy use in buildings in Ukraine – 194 kWh/m ²		120 kWh/m ²
Improving the energy efficiency of buildings	Funds aimed at improving the energy efficiency of buildings (billion UAH)	2	40
	Proportion of thermo-modernized buildings (%)	20	30
Introduction efficient heat supply systems	Energy losses in heat supply (%)	18	5,6
	Specific primary energy consumption per unit of energy delivered (kWh/Gcal)	0,16	0,08

Continuation of table 2

Goals	Indicator	Ukraine	
		2021	Target for 2030
Transport			
Increase the share of public transport and micromobility in cities, %	The share of private motorized transport use	25	10
	The share of public transport use	45	45
	The share of bicycle use	1	15
	Major roads in cities safe for cyclists	5	70
Increase the share of electric transport	The share of private electric transport	1	75
	The share of urban public electric transport	54	75
Increase the share of rail transportation	The proportion of passenger traffic transported by rail;	3,5	15
	The proportion of freight transported by rail;	51	70
	Percentage of electrified railways	47,2	70
Agriculture and forestry, land use			
Increase forest carbon sink and carbon sequestration	Greenhouse gas emission/sink by forests (million tonnes of CO2 equivalent/year)	51	75,6
Reduction peat production and to recover peatlands	Peat production (thousand tons/year)	539	54
Reduction emissions from agricultural land use	Unplowed pastures and hayfields (steppes)	in 2022 absorbed 0.4 million tonnes of CO2 equivalent, in 1990 – 0.9	Zero emissions from land use (emissions are offset by absorption)
Reduction livestock greenhouse gas emissions	Livestock emissions constitute	10.5 million tonnes of CO2 equivalent	Livestock emissions do not rise from 2022 level

Source: built on the bases of (Roadmap of ecologization and climate goals for Ukraine 2030, 2020).

Eco-innovations need appropriate financing, so such measures are proposed.

1. Directing 30% of the amount of direct support to agricultural producers for measures that contribute to the protection of the climate and the environment.

2. Agricultural enterprises will allocate 5% of the area under land of special use for ecological purposes (ecologically priority land).

3. Expansion of opportunities for implementation of agro-ecological measures at the expense of redistributed funds for the benefit of rural development.

Eco-innovations will contribute to the general strategy of environmental protection and fight against climate change.

References:

1. A European Green Deal. Available at: <https://ec.europa.eu/info/strategy/priorities-2019->

[2024/european-green-deal/protecting-environment-and-oceans-green-deal_en](https://ec.europa.eu/economy_finance/2024/european-green-deal/protecting-environment-and-oceans-green-deal_en) [Accessed 29 November 2022].

2. European Comission. Available at: https://ec.europa.eu/energy/sites/default/files/sk_final_necp_main_en.pdf [Accessed 29 November 2022].

3. Eco-Innovation in Europe. Available at: <https://euagenda.eu/upload/publications/untitled-202507-ea.pdf> [Accessed 29 November 2022].

4. Roadmap of ecologization and climate goals for Ukraine 2030. Available at: <https://en.ecoaction.org.ua/wp-content/uploads/2020/04/roadmap2030-ecoaction-booklet-full-eng.pdf> [Accessed 29 November 2022].

Ревенко Д. С., Тітаренко О. О.,

Національний аерокосмічний університет ім. М.Є. Жуковського «ХАІ»

ДЕТЕРМІНАНТИ ЕКОНОМІЧНОГО ЗРОСТАННЯ

Історичні і сучасні моделі соціально-економічного розвитку можна умовно розділити на три: екстенсивного, інтенсивного і інноваційного розвитку. Екстенсивний шлях соціально-економічного розвитку передбачає економічне зростання завдяки збільшенням витратам ресурсів в умовах ненасиченого ринку і відносно стабільного зовнішнього середовища. Інтенсивний шлях соціально-економічного розвитку базується на індустріалізації економіки, використанні досягнень науки, техніки та технологій у виробництві, на постійному вдосконаленні продукції, зниженні витрат і раціональному використанні ресурсів, що призводить до підвищення конкурентоспроможності. До третього групи моделей соціально-економічного розвитку треба віднести інноваційну модель, що передбачає економічне зростання завдяки використанню принципово нових прогресивних технологій і виготовленням інноваційної високотехнологічної продукції, збільшення обсягів міжнародної торгівлі, інтенсифікація участі в глобальних ланцюгах створення вартості. Інновації проникають у всі сфери економічної діяльності і відбуваються на всіх рівнях.

Серед найбільш популярних математичних моделей, що здатні описати три різні формації розвитку є класична виробнича функція, неокласична виробнича функція Кобба-Дугласа, модель Солоу, модель лінійних стадій розвитку, неокласична модель вільного ринку, модель сталого розвитку. Серед широкого спектру представлених моделей найбільш обґрунтованої і тією, що дає адекватні результати при моделюванні залишається неокласична модель, тому на нашу думку, її використання і збільшення її параметрів дасть змогу відповісти на ключові питання факторів економічного розвитку і змоделювати трансформаційні зміни в економіці України.

Література:

1. Рогоза М. Є. Соціально-економічний розвиток України: моделі, механізми, стратегії : монографія. – Полтава : ПУЕТ, 2021. – 148 с.

2. Концепція розвитку цифрової економіки та суспільства України на 2018-2020 роки. Схвалено розпорядженням Кабінету Міністрів України від 17 січня 2018 р. № 67.

Tofaniuk Olga

National Aerospace University "Kharkiv Aviation Institute"

EFFECTS OF POPULATION AGEING ON THE PENSION SYSTEM IN UKRAINE

Ukraine currently has a relatively generous pay-as-you-go pension system, but population aging coupled with recent problems with economic growth will soon make it unsustainable. The goal