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Green Industrial Policy: Strategic Development and Policy Instruments

Summary:

Green economy and green business are increasingly accepted as key drivers in tackling climate change, pollution, and health to improve life for people. The process of shifting the economies 'from brown to green' is one of the most significant socio-economic transformations in modern time. The article aims to contribute to discussions about green transformation, which can be defined as the process of combining economic growth with caring about the environment to guarantee a high quality of life for present and future generations as well as promoting the an effective and rational use of available resources. The authors observe strategies to reach targets of green transformation. One of them is implementation of green industrial policy at the EU and EU Member States levels. The article underlines a new balance between sustainability requirements and strategic economic interests, which is especially essential in the areas of investment, productivity, and economic security. The authors suggest a methodological approach that helps to assess actions and measures related to green economic and business development trends, that require support of societies as well as the improvement of economic efficiency at both the EU and national levels. The article concludes that the EU green industrial policy framework should become embedded in the Member States national reform programmes. Moreover, EU Industrial Policy and national industrial policies require coordinated actions in certain green technologies, regulation, and standardisation, which help to avoid fragmentation in the Single Market and to develop a solid regulatory frame-

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work, focused on ensuring competition and access to the Single Market, with common or mutually recognised environmental standards.

Keywords: Green Industrial Policy, Green Transformation, Economic Security

A. Introduction

Societal transformations and structural changes in the EU economies must address a threefold task: overcome geopolitical crises, implement strategies to decarbonised EU economies and ensure long-term economic security of EU nations. Considering the varying capacities of the EU Member States to respond to the short-term and longer-term economic and environmental difficulties, concerns towards the transition of green governance, green entrepreneurship, and innovation are of prime importance.

The achievement of EU Green Policies' objectives will be determined by a combination of dynamics and synergies between public management strategies and instruments that are capable of being effective in implementing public policy with adequate management. Overall, the transition process to green growth is assumed to be largely technocratic and has a strong impact on the decision-making process and any foreseen results achieved by governmental and private business policies.

EU institutions have been instrumental in crafting policy packages for the green transitions, which resulted, as was stressed by a European Parliament study, in a change in thinking - "With this shift in thinking must come a shift in how we govern societies and implement solutions to these global challenges". [3] Following this notion, the authors support the idea of considering EU industrial policy to make an impact the structure of an economy, encouraging resources to move into particular sectors that are perceived as desirable for future development. Furthermore, appropriate governance is seen as a precondition for achieving goals in creating and maintaining effective, competitive, and attractive instruments to support implementation of the above-mentioned societal changes.

This article examines the opportunities and challenges in the collaborative engagement between the respective actors and communities of practice in facilitation rational approach that allows for the implementation of green

3 *Europe's approach to implementing the Sustainable Development Goals: good practices and the way forward* (2019) European Parliament. European Union. p. 12. DOI: 10.2861/28364

industrial policy at the EU and national economies level, which turn ensures economic security of population and provides social welfare effects due to the enhancement in public administration services in their coordinated actions with business investments and entrepreneurial activities.

As the European Commission suggested, *the EU needs to maximise the benefits of its economic openness while minimising the risks from of economic interdependencies, through setting up a common strategic framework for EU economic security. With the Strategy, the EU and its Member States will be better equipped to commonly identify and assess the risks to our economic security, to use strategically the available tools for dealing with these risks and to develop new tools where needed*.[4] Moreover, multi- and inter-disciplinary combinations of different knowledge and technologies, generating extensive technological opportunities in terms of new-product performance or innovative entrepreneurial performance, or a new decision-making approach in governmental functionality.

The most frequently expressed descriptions of the multi-and-inter-disciplinary are the following: the use and combination of different knowledge and skills; the application of innovative methods in problem-solving; a problem-oriented approach, etc.; and, additionally, two main dimensions can be identified in the forms of the multi-disciplinary and the inter-disciplinarity.[5] Multi- and nter-disciplinary knowledge and new technologies can become a new parameter of competition between national economies in approaching green growth. On a wider regional scale, the implementation of Green Policies and the orientation of government towards efficient functionality along with government - private partnership representing a tool that inevitably helps to increase the environmental competitiveness of the EU and its Member States.

Overall, the term industrial policy has a well-recognised meaning and a long history. However, we will cover industrial policy matters that go beyond industry itself and beyond industrial relations. In view of this, we will use some new terms that have recently discussed by scholars, such as structural transformation policies, green transition and green industrial policy. We will try to answer a question in what ways a green industrial policy must be considered beyond the common practice of industrial policy.

4 European Commission (2023), *European Economic Security Strategy*, Publications Office of the European Union. https://data.europa.eu/doi/10.2775/689907

5 Muravska, T. and Ozolina, Z. (eds.) (2011) *Interdisciplinarity in Social Sciences*. University of Latvia, pp.66-70.

B. Green Industrial Policy's fundamentals, challenges, and strategies

It is commonly assumed by EU institutions and experts, the EU's approach in industrial policy has an eclectic and cross-cutting nature as well as the policy is combining interventionist and market-based approaches to secure a framework of favourable conditions to ensure industrial competitiveness at the level of the EU and at the level of the Member States.[6] The industrial policy is implemented together with other EU policies such as those of regional and cohesion policies and trade policy, thereby fostering better exploitation of the industrial potential of policies of innovation, research, and technological development.[7] Green industrial policy follows this same approach of state-driven structural change while also promoting broader social and environmental goals. Governments can operationalise the structural change necessary for economic growth, competitiveness, and new jobs. A shift from traditional types of industrial policies to an industrial policy that embraces environmental and energy policies could accelerate structural transformation and enhance productivity of national economies. Green economy and green business are increasingly accepted as key drivers in tackling climate change, pollution, and health-based issues to improve life for people. The process of shifting economies "from brown to green" is one of the most significant socio-economic transformations in modern times. Green transformation can be defined as combining economic growth with caring about the environment in order to guarantee a high quality of life for present and future generations at a level which is attainable due to civilisational development, as well as to the effective and rational use of available resources.[8] Green growth has the potential to stimulate transformative changes in the direction of sustainable development, but what is more important is the proactive role of governments in restructuring their economies and forming a framework of instruments and measures that impact the activities of business entities in their intentions to become,

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6 Stacenko, S. (2024) "Cross-Fertilisation Between EU Green Policies and Instruments Applied by Public Management: Dilemmas and Opportunities". Studia Europejskie- Studies in European Affairs, 1/2024,pp.71-86. DOI:10.33067/SE.1.2024.4

7 Article 173. Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union (TFEU), Official Journal C 326 of 26 October. Available at: https://eurlex.europa.eu/LexUriServ/LexUriServ. do?uri=CELEX:12012E/TXT:en:PDF

8 Cheba, K., Bak, I., Szopik-Depczynska, K. and Ioppolo, G. (2022) „Directions of green transformation of the EU countries", *Ecological Indicators*. Vol. 136, p. 108601. DOI: 10.1016/j.ecolind.2022.108601.

in the first instance, ecologically sustainable. Such processes concern green transformation and could be considered as part of the concept of the fourth industrial revolution, relying on significant technological advances, thus becoming socially acceptable.[9] Green transformation is fundamentally driven by introducing renewable energy resources as a new energy regime.[10] One of the strategies to reach targets of green transformation is a green industrial policy at the EU and Member State levels.

On the whole, green industrial policy initiatives are undertaken at regional, national, and EU levels. These initiatives are, however, not necessarily coordinated, which can even lead to conflicting relationships due to differences in policies and their implementation in diverse EU countries. The central issue is the existing fragmentations in the EU Single Market which prevent innovative green technologies from being fully competitive internationally.

One of the ways to increase competitiveness of EU businesses is to strengthen regulation and standardisation, which would reinforce the EU as a leader in common environmental standard-settings as a part of the regulation as one of the essentials of the EU Single Market. It is important to stress, however, that national barriers towards the green transformation of the entire bloc should be diminished further, and energy and transport infrastructure should be widened.

1. The Green Deal Industrial Plan

As a new initiative, the Green Deal Industrial Plan was introduced by the European Commission in 2023 with the aim to ensure the transition to green growth and steady, sustainable development.[11]Additionally, the Green Deal Industrial Plan intends to enhance the competitiveness of the bloc's industry on the path to net-zero greenhouse gas emissions. Moreover, there is a strong demand for investment in the green transition. As a result, a

9 Veugelers, R.,Tagliapietra, S. (2020) "Green Industrial Policy for Europe" *Bruegel*. Available at: https://www.bruegel.org/book/green- industrial-policy-europe

10 Siekmann, F., Schlor, H. and Venghaus, S. (2023) "Linking sustainability and the Fourth Industrial Revolution: a monitoring framework accounting for technological development", *Energy, Sustainability and Society*. Vol. 13(26). DOI: 10.1186/s13705-023-00405-4

11 Net Zero Industry Act. Proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act). COM(2023) 161, SWD(2023) 68. Available at: https://single-market-economy.ec.europa. eu/publications/net-zero-industry-act_en

new balance between sustainability requirements and strategic economic interests, especially in the areas of trade and investment, is essential. Strategic economic interests are supposed to help to avoid an international disadvantage of EU industry and the risk of a decline in foreign directs investments (FDI) in Europe. As statistics show, in 2022, FDI rose only 1% compared with 2021, and remains 7% lower than in 2019, just before the onset of the COVID-19 pandemic.[12] The shift towards an increase in competitiveness of the EU economy and growth in investments could be achieved as a result of an implementation of the EU industrial strategy and therefore strengthen the bloc's industry.

Taken as a whole, the Green Deal Industrial Plan is to counter the EU's import dependency for other key commodities and technologies by placing it at the forefront of markets that will emerge or change as a result of global decarbonisation efforts. Maintaining the EU's security of supply and competitiveness in this shifting geopolitical environment is at the core of the plan. For the above reasons, the European Commission suggested three legislative initiatives aimed at securing these objectives: to reform of the EU's electricity market, suggestions to reframe supply of critical raw materials and to that accelerate transition to climate neutrality by moving to a situation when the EU is the home of clean tech industries.

First, the reform of the electricity market helps to accelerate a surge in renewables and the phase-out of gas, make consumer bills less dependent on volatile fossil fuel prices, better protect consumers from future price spikes and potential market manipulation, and make the EU's industry clean and more competitive.[13] The electricity market reform should have an impact on the cost of consumers' payments and to protect them due to the decrease of the effect of fossil fuels. It is foreseen that the reform will boost renewables fair competition in the European wholesale energy markets and enhance industrial competitiveness.[14] Second, to increase competitiveness of the EU, the proposals have been suggested for critical raw materials represented by the Critical Raw Materials Act.[15] The act will ensure EU

12 How can Europe attract next-generation inward investment? (2023) EY Attractiveness Survey Europe. Available at: https://www.ey.com/en_ gl/attractiveness/ey-europe-attractiveness-survey.

13 Electricity Market Reform for consumers and annex. Directorate-General for Energy. 2023. COM/2023/148 final, COM/2023/147 final. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023PC0147&amp%3Bqid=1679411047615

14 Ibid.

15 Critical Raw Materials Act. Proposal for a regulation of the European Parliament and of the Council establishing a framework for ensuring a secure and sustainable supply of critical raw materials. COM(2023) 160, SWD(2023) 160, SWD(2023) 161, SWD(2023) 162,

access to a secure and ensure sustainable supply of critical raw materials, enabling Europe to meet its 2030 climate and digital objectives. Thirdly, a proposal for a Net-Zero Industry Act,[16] that should accelerate transition to climate neutrality and to create a simpler and more predictable legal framework for net-zero industries in the EU, as part of Europe's Green Deal Industrial Plan. According to the legislators, the Act will support the EU's climate-neutrality commitment and the clean energy transition, strengthen the resilience of the EU's energy system, and contribute to establishing a secure supply of clean energy in line with REPowerEU. [17] However, some challenges have accrued in the implementation of the Act. For example, development of new technologies will not benefit from reduced regulatory burdens due to the lack of investments which is badly needed to strengthen the EU competitiveness. The Act does not explicitly include other actors than Russian companies participation in the EU market. As a result, the energy sector remain to be open for high -cost business.

C. Green Policies Orientation and the Concept of Environmentally Responsible Governmental and Business Strategies

Increasingly, environmental issues are causing serious threats to ecology, to human beings, and to economic growth. Nowadays, governments and businesses focus on more sustainable production and integrating sustainable processes at the core of their business activities. Studies suggest that Green Policy orientation has emerged as a core concept in the field of entrepreneurship (Lumpkin, Pidduck, 2021),[18] and resulted from cooperation between businesses and governments. In this context, in attaining environmental, economic, and social performance of businesses and business

SEC(2023) 360. Available at: https://single-market-economy.ec.europa.eu/publications/net-zero-industry-act_en

16 Net Zero Industry Act. Proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act). COM(2023) 161, SWD(2023) 68. Available at: https://single-market-economy.ec.europa. eu/publications/net-zero-industry-act_en

17 Ibid.

18 Lumpkin, G. T. Pidduck, R.J. (2021) "Global Entrepreneurial Orientation (GEO): An Updated, Multidimensional View of EO" in Corbett, A.C., Kreiser, P.M., Marino, L.D., Wales,W.J./Ed. Entrepreneurial Orientation: Epistemological, Theoretical, and Empirical Perspectives, Advances in Entrepreneurship, Firm Emergence and Growth, Vol. 22, Emerald Publishing Limited, Bingley, pp. 17-68.DOI:10.1108/S1074-754020210000022002

and government partnership, Green Policy orientation and/or sustainable economic performance are considered as sustainable competitive advantages (Afum et al., 2021).[19]

For many businesses entities, to enhance their capabilities and increase competitiveness is to perform towards the initiation of green ventures and the improvement of business and sustainability performance. The transition to a green economy is a dominant part of the EU`s economic development, and the European Green Deal that strives to transform the EU into a climate neutral, resource efficient economy by 2050[20] has placed green economy in the focus of attention of all national governments of the EU. The implementation of the European Green Deal will provide new opportunities for innovation, investment, and jobs.

Moreover, green entrepreneurs and green businesses are recognised as vital push factors to foster transitions to a green economy. Green entrepreneurs, in implementing their business strategies, aim at reconciling tensions between business activities and environmental objectives in a contrast to entrepreneurs operating under the "business as usual" umbrella.[21]

An essential starting point governing green entrepreneurs is the so-called 'green growth' paradigm. In research studies, green growth is primarily associated with climate stabilisation as an accelerator for innovation, investment, and economic growth and is related to political activities on national and regional levels.[22] The concept of green innovation was first proposed already in 1996[23] to denote improvements and innovations in product processes that enhance the environmental performance of firms.

19 Afum, E., et al., (2021). The missing links of sustainable supply chain management and green radical product innovation between sustainable entrepreneurship orientation and sustainability performance. *Journal of Engineering, Design and Technology,* p.170. DOI: doi.org/10.1108/JEDT-05-2021-0267

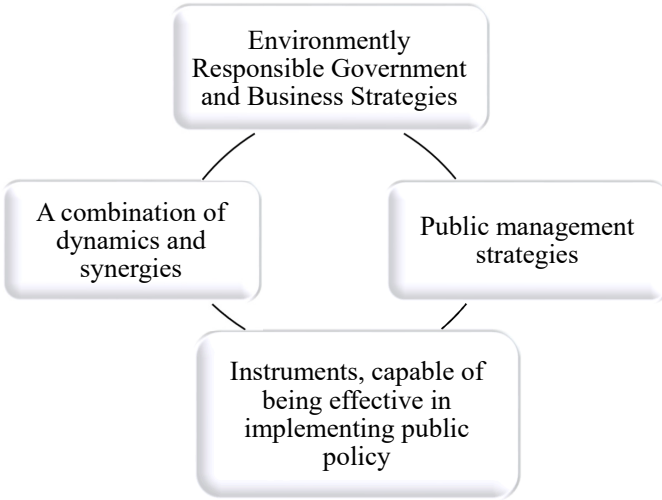
20 European Commission (2019) *Delivering the European Green Deal*. Available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european- green-deal/delivering-european-green-deal_en#transforming-our- economy-and-societies

21 O'Neill, K. and Gibbs, D. (2016) "Rethinking green entrepreneurship – Fluid narratives of the green economy. Environment and Planning", *Economy and Space*. Vol. 48(9), pp. 1727–1749. DOI: 10.1177/0308518X166504.

22 Buch-Hansen, H. and Carstensen, M.B. (2021) "Paradigms and the political economy of ecopolitical projects: Green growth and degrowth compared", *Competition & Change*. Vol. 25(4), pp. 308–327. DOI: 10.1177/1024529420987528.

23 Fussler, C. and James, P. (1999) *Driving Eco-innovation: A Breakthrough Discipline for Innovation and Sustainability*. Pitman Publishing.

Scheme 1. Environmentally Responsible Government and Business Strategies



Source: authors' design

In addition to this,[24] refer to green innovation as processes of the use of innovative resources that may reduce the cost of production and improve a company's performance.

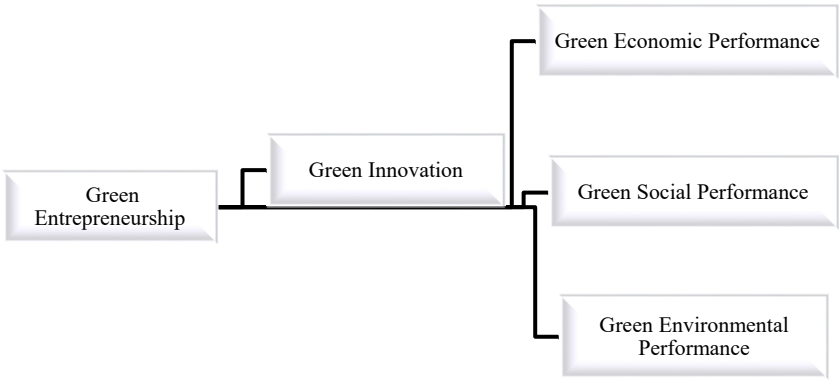
In studies that are relevant to green innovations, the importance of innovation is attached to the economic, environmental, and social performance of a company[25], which, in turn, could enhance the strength and competitiveness of business entities and organisations.

Green entrepreneurship leads to green innovation, which sequent to three variables, which include "green social performance", "green economic performance", and "green environmental performance", as illustrated in the scheme below.

24 Borghesi, S., Cainelli, G. and Mazzanti, M (2015) "Linking emission trading to environmental innovation: Evidence from the Italian manufacturing industry", *Research Policy*. Vol. 44(3), pp. 669–683.

25 Hadjimanolis, A. (2020) *Drivers and Barriers in SMES in the Context of Small Countries in Managing Sustainable Innovation*. Routledge. DOI:10.4324/9780429264962-5

Scheme 2. Green Entrepreneurship and Policies



Source: authors' design

Entrepreneurship plays an important role in delivering more radical green innovations that challenge existing firms and business models. However, the cornerstone of the process is a well-organised government that applies environmentally-responsible business strategies. Green entrepreneurship is a system that reflects a company's strategic actions to accelerate green innovation and improve sustainable business performance (i.e., that of the environmental, economic, and social).

I. Green Industrial Policy Approach: constrains and barriers

It is widely acknowledged that Green Policies enhance and contribute to the sustainability performance of the demand and supply sides. As a result, there is a need to pay close attention to development of internal environment within national economies and external environment determined by implementation of the SDGs internationally.

Green Policies need the creation of the relevant economic and business environment and green growth, via good governance, fair competition, and an improvement of access to finance, which remains one of a major constraint for the facilitation of the transition to the green growth and new green businesses. These targets can alleviate problems in adopting green innovations. Furthermore, Green Policies can enable businesses to participate in cooperation with a government in knowledge networks and strengthen skills that can lead to innovation that are fundamental in the

green transition. A framework for environmentally responsible business and entrepreneurial strategies should be developed and implemented based to a large extent on the green industrial policy instruments.

D. The Green Industrial Policy role in the economic well-being of a nation

1. The approach to Economic Security

A green industrial policy is needed to ensure the success of the green transition and to help maintain and strengthen the EU's socio-economic model. The approach to Economic Security varies in different time periods and depends on the existing geo-political trends, risks, and changes in development at international, regional, and national levels. different levels. The concept of Economic Security is in focus of attention of international institutions and scholarly debates. Most studies focused on either national level with a macroeconomic approach (focused on economic vulnerability and capacity of resistance), or an individual approach to Economic Security. As argued by Tamošiūnienėa and Munteanu (2015*) the concept of security includes military, economic, energy, environmental security, etc that possess the levels for tackling specific risks to each. Thus, there is a shift from threats to vulnerabilities and risks*.[26]

The individual approach is studied in the Anglo-Saxon systems of well-being [27], the International Labour Organisation is of the same opinion "economic security is composed of basic social security, pertaining to health, education, dwelling, information, and social protection, as well as work-related security.[28] Similar view has the Expert Group on the Measurement of Economic Performance and Social Progress,[29] the successor of the Stiglitz-Sen-Fitoussi Commission, which suggests the measurement and analysis of Economic Security both as a fundamental feature of economic life and a major influence on subjective well-being and economic behaviour. Further-

26 Tamošiūnienė R., Munteanu, C. (2015) Current research approaches to economic security. DOI: http://dx.doi.org/10.4995/ICBM.2015.1537

27 Hacker J. S. Economic Security (2018), in: For Good Measure. Advanced Research on Well-being Metrics Beyond OECD. /Eds. Stiglitz, J.E., Fitoussi, J.P., Durand, M. OECD, pp.204-235.

28 Economic Insecurity is a global crisis (2004) Socio-economic Security Programme. ILO.

29 Stiglitz,J.E., Fitoussi,J.P., Durand, M.(2018) Beyond GDP Measuring What Counts for Economic and Social Performance, OECD, 2018.

more, experts find an error in the fact that it is not adequately reflected in standard national statistics.[30] Income volatility is highest in low-income households, but it is increasing among households previously considered to be "secure"—those with medium and higher levels of education, secure employment (*Hacker and Rehm, 2020*)[31]. It is necessary to pay attention to the Economic Security framework as part of national security. Furthermore, a measurement of well-being has to be developed further. The authors are aware that the new knowledge should be developed by experts in academic to suggest comprehensive strategies in overcoming geo-political and environmental risks for better socio-economic outcomes and green employment though entrepreneurial orientation[32], that has emerged as a core component in the field of entrepreneurship. A focus on green entrepreneurship as a system that reflects a company's strategic actions to improve sustainable business performance and sustainable competitive advantage[33] (environmental, economic, and social) should be strengthen. In studies, green entrepreneurship gives rise to three variables which include 'green social performance', 'green economic performance' and 'green environmental performance' and, very importantly, 'green employment'.[34] Moreover, these variables are at the core of the Green Employment Initiative[35], which outlines measures to maximize jobs in the green economy. Notable, an environmentally oriented entrepreneurial activities may benefit from a developed ecosystem and good business environment more than conventional entrepreneurship.[36]

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30 Ibid.

31 Hacker, J.S., Rehm,P. (2020) Reducing Risk as well as Inequality: Assessing the Welfare State's Insurance Effects. British Journal of Political Science , Volume 52 , Issue 1 , 2022 , pp. 456 – 466.

32 Lumpkin, G. T. Pidduck, R.J. (2021) "Global Entrepreneurial Orientation (GEO): An Updated, Multidimensional View of EO" in Corbett, A.C., Kreiser, P.M., Marino, L.D., Wales,W.J./Ed. Entrepreneurial Orientation: Epistemological, Theoretical, and Empirical Perspectives, Advances in Entrepreneurship, Firm Emergence and Growth, Vol. 22, Emerald Publishing Limited, Bingley, pp. 17-68.DOI:10.1108/S1074-754020210000022002

33 Afum, E., et al., (2021). The missing links of sustainable supply chain management and green radical product innovation between sustainable entrepreneurship orientation and sustainability performance. *Journal of Engineering, Design and Technology.* DOI: doi.org/10.1108/JEDT-05-2021-0267

34 Ratten, V., Ramirez-Pasillas, M., Lundberg, H. (2020) Managing Sustainable Innovation.Routledge, pp.1-11.

35 Green Employment Initiative:Tapping into the job creation potential oft he green economy.Brussles, 2.7.2014 COM(2014) 446 final.

36 Horsch, J. et.al (2017) What influences environmental entrepreneurship? A multilevel analysis of the determinants of entrepreneurs' environmental orientation. Small Business Economics, 48 (1), pp. 47-69. DOI: 10.1007/s11187-016-9765-2

The key factors, influencing an increase of entrepreneurial competences need further research. The question should be answered whether an institutional approach and support policies to entrepreneurial type of education as well as national-level institutions are conducive to entrepreneurship? Suggestions for the ecosystem development and its adoption to green entrepreneurial education, green business and, as a result, to green employment as part of Economic Security should be in focus of studies.

The authors consider that understanding of the conventional entrepreneurship should be reshaped and the academic added value includes multi-disciplinary synergies and extending research-based entrepreneurial education that have a strong impact on employment and Economic Security. Entrepreneurial competences, according to the authors' opinion should be developed further to become relevant to green economy: knowledge, skills, attitudes to develop an expert knowledge in green employment to consider the *potential of employment creation linked to the production of energy from renewable sources, energy efficiency, waste and water management, air quality, restoring and preserving biodiversity and developing green infrastructure is significant and is resilient to changes in the business cycle. Moreover, 54 percent*[37] *of Europeans believe that by 2030 there will be more Social Europe relaying on green employment.*

2. *Is Green Industrial Policy in Latvia as a remedy to increase technological improvements and economic security?*

The green industrial policy's framework in Latvia, including its tasks and targets, represents an example of green industrial policy implementation at the level of an EU Member State. Latvia has a small industrial base, but a large agriculture, forestry sector as well as a service sector. Until the outbreak of the COVID-19 pandemic, Latvia's economic growth remained stable, exceeding the EU average. According to the European Parliamentary Research Service, uncertainty remains elevated.[38] The OECD noted that that productivity growth went into decline and another risk is the quickly declining size of the Latvian population due to ageing and emigration. The OECD also stresses that policies to enhance digital transformation along with green and digital transition are of prime importance to address the

37 New Eurobarometr survey. April 2024.Available at: https://ec.europa.eu/social/main.jsp?langId=en&catId=101&furtherNews=yes&newsId=10812

38 Saulnier, J. (2022) Latvia's National Recovery and Resilience Plan. European Parliament. Available at: https://www.europarl.europa.eu/ RegData/etudes/BRIE/2022/698887/EPRS_BRI(2022)698887_EN.pdf

green industrial policy.[39] The data shows, that rapidly increasing prices of natural gas and other energy resources in 2022 and 2023 as the result of the war started as a result of the invasion of Russia in Ukraine and EU sanctions on Russia. The same trend could continue to rise in 2024 and 2025. According to the Central Statistical Bureau of Latvia (CSB), in 2022, electricity prices increased almost twofold compared to the price of electricity in 2021 with the price of natural gas for consumers increasing almost 2.5 times.[40]

The implementation of the green transition goals could be a remedy, however, the Latvian economy needs a reorganisation of the country's industrial system while applying a diverse, cross-sector approach.

Box 1. Strategic Objectives and Measures for Sustainable and Balanced Development -Achieving the 2030 greenhouse gas reduction and achieve climate neutrality by 2050.

Improving adaptability, strengthening resilience, and reducing vulnerability to climate change.

Making progress towards a renewable growth model by decoupling economic growth economic growth from resource use and environmental; depletion and acceleration the transition to a circular economy.

Aiming for zero pollution in an environment, i.e., the removal of toxic substances in the air, water, and soil, this also protecting the health and well-being of Europeans.

Protecting, preserving, and restoring biodiversity and increasing natural capital, in particular the air, water, soil, along with forest, freshwater, wetland, and marine ecosystems.

Promoting environmental sustainability and reducing environmental and climate pressures related to production and consumption in general in the fields of energy, industrial development, buildings and infrastructure, mobility, and food systems.

Source: Saiema, Republic of Latvia, 2020, p. 40-51.

The competitive advantages of the Latvian economy mainly rely on technological factors and improvements in production efficiency and innovations. However, to a lesser extent, the advantages lie in low labour and resource prices. Reframing green investments should be complemented by measures that improve skills and facilitate the reallocation of labour and capital. The labour market itself has been seriously affected by the negative demographic situation in the country, leaving a mark on both unemployment and the dynamics of the number of employees. Furthermore, working-age people will need to cope with an increasing old-age dependency problem, as well as structural and technological changes in economies and businesses expected in the time of the fourth industrial revolution. Furthermore, it becomes increasingly difficult for the unemployed to adapt to new labour-market needs. Risks that some of the unemployed may have difficulty finding a job

39 OECD (2021) *Going For Growth*' *Report on Latvia*. Available at: https:// www.oecd.org/economy/growth/Latvia-country-note-going-for- growth-2021.pdf

40 CBS Central Statistical Bureau of Latvia (2022) Available at: https://data.stat. gov.lv/pxweb/lv/OSP_PUB/START__NOZ__EN

matching their skills in the future remain high. According to experts from government institutions,[41] the supply of adequately skilled workers could significantly decrease in the future, and the importance of practice-integrated education in higher educational institutions will continue to surge.[42] Moreover, to increase the maturity of green economy and business in the country, a high degree of interaction between the public and private sectors is required. In this respect, Latvia's Ministry of Economy, in cooperation with all line ministries, set out tasks and guidelines for the green industrial policy's development, with emphasis on stimulating investment for business development and strengthening the comparative advantages of the national economy towards green transition.[43] The guidelines recognise the context of a rapidly changing labour market, as it does the need for employees to constantly acquire new knowledge and the need for employers to invest in technological development and the education of their employees.

The industrial policy's instruments are those of enterprise policy, with the main task to set up an environment and conditions in which entrepreneurs and business entities can take initiatives and implement their innovative activities. As a result of the government-business green partnership, the strengths and weaknesses of the national economy in general and national industries in particular are analysed and corrected according to the changing internal and external environment and may trigger cross- sectoral or sectoral policy initiatives.

Conclusions

The article shows that EU Green Economy and Green Industrial Policy increasingly accepted as key drivers in tackling climate change, pollution, and health to improve life for people. The article contributes to discussions about green transformation and underlines that combining economic growth with caring about the environment is a guarantee a high quality of

41 The Ministry of Economy of the Republic of Latvia. Informative Report "On medium-and long-term labour market forecast". 2020. Available at: https://www.em.gov.lv/sites/em/files/labour-market-forecasts-2020 -full1_0.pdf

42 Stacenko, S., Muravska, T. and Briķena, L. (2023) *Building the Road to Green Entrepreneurial Orientation* in *Higher Education and Research: Sharing Experience and Looking Ahead* in Scholz, L. and Trüe, Ch. (eds.) *The EU Green Deal and Its Implementation*. Baden-Baden: Nomos, pp. 187–214.

43 On the guidelines of the National Industrial Policy 2021–2027. The Cabinet of Ministers 2021. 6.02.2021. No 93. Available at: https://www. em.gov.lv/en/media/13388/download

life for present and future generations as well as to an effective and rational use of the available resources.

The authors observed strategies related to green transformation targets. One of them is implementation of green industrial policy at the EU and EU Member States levels. The article underlines a new balance between sustainability requirements and strategic economic interests, especially it is essential in the areas of investment, productivity, and economic security.

The authors underlined that a methodological approach have to be developed and improved in assessing actions and measures related to the green economic and business development trends, that require support of societies as well as the improvement of economic efficiency at the EU and national level. The achievement of the EU's green policies is determined by a combination of dynamics and synergies between public management strategies and instruments that are capable of implementing effective public policy in an adequate partnership with private business and entrepreneurship.

The article concludes that the EU green industrial policy framework should become embedded in the Member State national reform programmes. Moreover, EU Industrial Policy and national industrial policies require coordinated actions in certain green technologies, regulation, and standardisation, which help to avoid fragmentation in the Single Market and to develop a solid regulatory framework, focused on ensuring competition and access to the Single Market, with common or mutually recognised environmental standards. The instruments applied in internal economic and business environments are adjusted to the level of economic and business development and specific problems in different sectors of the national economy. The EU's actions in green industrial policy help the Latvian government to develop action plans that include green industrial policy recommendations. As a result of the government- business green partnership, the strengths of the national economy in general and national industries, and their weaknesses in particular, should be assessed and further corrected in relation to changes in the internal and external environment and, as a result, produce efficient cross-sectoral and sectoral policy initiatives. The authors pointed out that an environmentally oriented entrepreneurial activities may benefit from a developed ecosystem and good business environment more the conventional entrepreneurship. Identification of appropriate complex labour market and educational indicators needs to be researched. It is necessary to pay attention to the Economic Security framework as part of national security. Furthermore, a measurement of well-being has to be in focus of socio-economic research. The authors are aware that the new knowledge should be developed by experts in academia to suggest comprehensive

strategies in overcoming geo-political and environmental risks for better socio-economic outcomes and green employment.

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