



## GREEN INNOVATIONS AS A PATH TOWARDS A MORE SUSTAINABLE GLOBAL ECONOMY<sup>1</sup>

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### **Abstract:**

In previous years, due to society's increasing concern about climate change, it seems that there has never been more pressure on companies to turn to green innovation as a main means of achieving sustainable development. Companies that have already taken steps towards this commitment are perceived by consumers as responsible and as those that are oriented towards environmental sustainability and improvement of economic and social performance. This strategy attracts new consumers, improves competitive advantage, market position and reduces time and costs of production processes. Therefore, green innovations simultaneously contribute to the preservation of the environment and the development of the economy. In a broader sense, a country that is committed to innovation as a means of enabling sustainable development can strengthen its international position and build an image of itself as innovative and environmentally friendly. Among the green innovations most represented on the market are photovoltaic cells for converting sunlight into energy, windmills (which generate energy from the wind), electric cars, green architecture, etc. Such innovations promote economic growth and have the role of reducing carbon emissions as well as redefining waste management and the use of renewable resources, thus reducing the negative effects that people have on the planet. The increasing scarcity of resources due to global economic expansion has forced countries to focus more strongly and decisively on sustainable development. The global economy can collectively drive the positive change needed to protect our planet for future generations by supporting and investing in these technologies.

**Keywords:** Green innovations, Sustainability, Global economy

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<sup>1</sup> The paper presents findings of a study developed as a part of the research project "Serbia and challenges in international relations in 2024", financed by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia, and conducted by Institute of International Politics and Economics, Belgrade during year 2024.



## INTRODUCTION

As people become more conscious of the effects of climate change, modern society is attempting to modify its way of life to promote sustainable development in both the corporate and environmental spheres (Baltezarević et al., 2022). Green technologies, sometimes referred to as clean technologies or environmental technologies, are a variety of goods, methods, and procedures made with the least amount of adverse effects on the environment in mind while yet offering sustainable solutions. Green technology can also refer to the use of environmentally friendly fuels or clean energy sources like wind or solar power. In the end, it comes down to figuring out how to save the environment and lessen damage to wildlife (Chomsky, 2023).

The company's support for green innovation is demonstrated by its attention to social expectations and the pressure it faces from stakeholders who are willing to take on responsibility but who also have a big influence on social expectations, such as awareness of the opportunity to use sustainability in the environment (Lee et al., 2018). Modern businesses must respond promptly and adequately to all obstacles in order to maintain a competitive position in the market (Baltezarević et al., 2015). A growing awareness of environmental issues has prompted several nations, particularly in the energy transformation sector, to build a green economic growth infrastructure for resource and environmental protection (Khan, 2020). To achieve routes to green growth, green technological innovation is necessary. One example is the utilization of both renewable and non-renewable energy. These initiatives are predicated on the idea that environmental technology continuously drive economic growth and environmental sustainability at the county level (Gali et al., 2020).

It is predicted that the economic costs of climate change would account for 2–10% of the world's GDP. Global economies and communities are impacted by ecosystem deterioration. Low-income nations and areas will be most severely affected because they are frequently the ones that contributed the least to the issues. Between 32 and 132 million people are predicted to live in poverty by 2030 as a result of climate change alone (WRI, 2023). The governmental and corporate sectors have come to understand in recent years how critical it is to promote wider social development by looking out for marginalized communities, their workers, and the environment (Baltezarević - Baltezarević, 2020). In the coming generation, technology and the benefits it can provide to people and organizations equally will remain crucial (Safieddine - Baltezarević, 2016).



## **GREEN INNOVATIONS: THE PURSUIT OF CREATIVE SOLUTIONS TO PROMOTE THE GLOBAL SUSTAINABILITY**

Innovation may be defined as the process of developing and applying creativity in order to meet consumer tastes and demands by creating something new or enhanced (Kahn, 2018). Innovation enables organizations to quickly enter and expand into new markets. Successful innovation involves a combination of vision, passion, excitement, energy, and hard effort to turn innovative concepts into action (Babu-Pinstrup - Andersen, 2007).

Green innovation has emerged as a critical strategic instrument for achieving effective sustainable development (Weng at al., 2015). It comprises the creation of a regenerative economy based on principles of recycling, repair, reconditioning, and reuse (Millar et al., 2019). This innovation is a part of the whole business cycle, meaning that it affects the creation, manufacturing, distribution, and final use of commercial goods, all of which primarily support environmental sustainability (Takalo - Tooranloo, 2021). There has never been a stronger need to strike a balance between innovation and sustainability as the world deals with technology and environmental issues (Lee et al., 2022). Studies have indicated that companies that are actively involved in green innovation typically demonstrate a stronger dedication to environmental sustainability goals (Gadekar et al., 2022).

Research & development expenditures for developing green technology are frequently high, and breaking through technological obstacles can be a challenging process (Yuan et al., 2022). Green innovation and sustainability demand businesses to think about the social impact of their actions in addition to the financial gain (Kim, 2018). These innovations can take many different forms at the individual company level. These include the creation of new or improved institutional arrangements, processes, marketing strategies, organizational structures, and products and services that have a lower environmental impact than alternatives (OECD, 2010). The global market for sustainability and green technologies is expected to expand between 2022 and 2030. This market was valued at approximately 13.76 billion US dollars in 2022. It is anticipated to reach its peak in 2030 at around 62 billion US dollars, growing at a compound annual growth rate of 20.8% between 2023 and 2030 (Statista, 2023).

Three categories apply to green innovation. First, green innovation that reduces a business's environmental effect by recycling and reusing products. Secondly, green innovation that addresses the environmental concerns of the company by reducing the use of hazardous materials. The final category is green innovation, which creates products that have positive effects for the environment and employs efficient procedures while consuming less energy or resources (Mishra, 2021). Green innovation improves economic and



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social performance (by reducing waste, costs, and other inefficiencies), attracts new customers (66 percent of respondents are willing to pay more for sustainable products, according to the Nielsen Global Corporate Sustainability Report), reduces manufacturing time and costs, finally, improves market position and gives them an advantage over their competitors (Ecocation, 2023). Additionally, green innovations can be further divided into four main groups: green products, green marketing, green processes, and green management. These categories are focused on creating an eco-friendly environment, reducing energy consumption and increasing resource efficiency, managing pollution emissions, recycling waste, enhancing organizational performance, and offering a pollution-free environment to society on a large scale (Seman et al., 2019). When green patent applications are doubled annually, real economic growth increases by 4.8 percentage points, but non-green patent applications only increase by 3.4 percentage points annually. Thus, it can be said that green investments have the potential to simultaneously benefit the economy and the environment (KPMG, 2021). The economic benefits of green innovation are mostly realized through greater investment in the early years. Cheaper energy and more energy efficient industrial methods will lead to additional growth gains over time. Most crucially, they result from less global warming and fewer (and less costly) climatic calamities (Hasna et al., 2023). Therefore, a nation must be perceived as innovative and open to modifying its market resources in order to meet societal demands if it hopes to strengthen its position in the international marketplace (Rosenzweig, 2017).

It is consequently imperative that businesses think about their operational management from the standpoint of long-term growth. Companies are pursuing sustainable growth as a means of addressing stakeholder concerns. Due to demand to develop sustainable processes in an environmentally sustainable way in order to stay competitive in the markets, a comparatively higher number of companies are emphasizing green innovation (El-Kassar - Singh, 2019). There is no shortage of instances where environmentally beneficial green technology are being implemented. Solar energy, which uses photovoltaic cells to turn sunlight into power, is one of the most well-known examples. A further popular instance that contributes to lowering carbon emissions and dependency on fossil fuels is the electric automobile (Chomsky, 2023).

Environmental standards and sustainable development should be ingrained in companies' corporate culture, according to stakeholders who have harshly condemned them on these matters (Sodhi - Tang, 2018). While there is great potential for greater sustainability through green innovation, the process is complicated and full of unknowns because it is not always clear how to match operations within and between organizations to support green innovation (Afeltra et al., 2021). A strategy that benefits stakeholders over the long run is corporate sustainability. Using this method, a business strategy that incorporates the ethical, social, environmental, cultural, and economic domains is put into practice (Wüstenhagen, 2008). The goal of



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sustainability as a social objective is to achieve triple bottom line performance: profit, people, and the environment (Cruz - Marques, 2014). Benefits from corporate sustainability include less of an impact on the environment, financial gains, improved government relations, enhanced brand loyalty, increased risk-management skills, increased technology and innovation skills, and easier hiring (Ameer - Othman, 2012).

By revolutionizing energy generation, redefining waste management, and utilizing renewable resources, green innovations are changing the planet. These innovations create new avenues for economic growth while simultaneously lessening the negative effects of human activity on the environment. We are getting closer to a future that is more sustainable and greener as people, organizations, and governments adopt sustainable practices more and more (Rekart, 2023).

### CONCLUSION

Unconscionable industrial development in many regions of the world, as well as human activities, have contributed over many years to the disruption of natural balances and to climate change. These negative changes caused general concern and increased pressure on companies and countries to opt for clean technologies and find creative solutions in their production processes. Green innovations as a means of achieving sustainable development are gaining more and more importance. Such innovations include finding alternative solutions for the production of electricity (such as solar or wind energy), electric cars or the construction of green buildings, which contribute to the preservation of the natural environment and economic development. On the other hand, companies that decide to introduce such innovations in their business, even though they are faced with many implementation difficulties, will have great benefits that will be reflected in new customers and improved loyalty, because they will be perceived as innovative and as those who care about the protection of the natural environment, and therefore also about people's health. However, in order for such initiatives to have a global effect, international cooperation and a significant number of countries that would participate in investing in such a process are needed. In addition, countries that would opt for green innovations would build a better international market position and a reputation as someone who cares about nature conservation, and above all, they would be a link in the chain that will leave a healthy environment at the disposal of future generations.



## REFERENCES

- Afeltra, G., Alerasoul, S.A. & Strozzi, F. (2021). The evolution of sustainable innovation: from the past to the future. *European Journal of Innovation Management*, Vol.2021, pp.1-36.
- Ameer, R. & Othman, R. (2012). Sustainability practices and corporate financial performance: A study based on the top global corporations. *J. Bus. Ethics*. 108, pp. 61–79.
- Babu, S. & Pinstrup-Andersen, P. (2007). Social innovation and entrepreneurship: Developing capacity to reduce poverty and hunger. In 2020 Focus Brief on the World's Poor and Hungry People; International Food Policy Research Institute (IFPRI): Washington, DC, USA.
- Baltezarević, V., Baltezarević, R. & Jovanović, D. (2015). Knowledge management as imperative for economic growth and development. *Economic Analysis*, No 3-4. pp. 62-68.
- Baltezarević, R. & Baltezarević, I. (2020). The Role of social media in Corporate Social Responsibility - Fashion Industry Confronting the Challenges of the Modern Age. *Media dialogues, Journal for research of the media and society*. Year XIII, No. 35, pp. 5-23.
- Baltezarević, R., Baltezarević, B. & Baltezarević, V (2022). The role of travel influencers in sustainable tourism development. *International Review*, No 3-4/2022, pp.125-128.
- Chomsky, R. (2023). Top 10 Green Technology Innovations. Retrieved from: <https://sustainablereview.com/top-10-green-technology-innovations-2/> (Accessed: 18.01.2024).
- Cruz, N. & Marques, R. (2014). Scorecards for sustainable local governments. *Cities*. 39, pp. 165–170.
- Ecocation (2023). 10 Examples of Green Innovation. Retrieved from: <https://ecocation.org/10-examples-of-green-innovation/> (Accessed: 16.01.2024).
- El-Kassar, A.N. & Singh, S.K. (2019). Green innovation and organizational performance: The influence of big data and the moderating role of management commitment and HR practices. *Technol. Forecast. Soc. Change*. 144, pp. 483–498.
- Gadekar, R., Sarkar, B. & Gadekar, A. (2022). Investigating the relationship among Industry 4.0 drivers, adoption, risks reduction, and sustainable organizational performance in manufacturing industries: An empirical study. *Sustain. Prod. Consum.* 31, pp. 670–692.
- Gali, N. K., Niemand, T., Shaw, E., Hughes, M., Kraus, S., & Brem, A. (2020). Social entrepreneurship orientation and company success: The mediating role of social performance. *Technological Forecasting & Social Change*, 160(November), 120230.
- Hasna, Z., Jaumotte, F. & Pienknagura, S. (2023). How Green Innovation Can Stimulate Economies and Curb Emissions. Retrieved from: <https://www.imf.org/en/Blogs/Articles/2023/11/06/how-green-innovation-can-stimulate-economies-and-curb-emissions> (Accessed: 18.01.2024).
- Kahn, K.B. (2018). Understanding innovation. *Bus. Horiz.*, 61, pp. 453–460.
- Khan, D. & Ulucak, R. (2020). How do environmental technologies affect green growth? Evidence from BRICS economies. *Science of the Total Environment*, 136504.
- Kim, T. (2018). Identifying Stakeholders and Interactions in the Dementia Café in Seongju through Empathic Service Design Approaches. *J. Open Innov. Technol. Mark. Complex*, 4(3), 28.
- KPMG (2021). Greenovate for a better environment and economy. Retrieved from: <https://kpmg.com/xx/en/home/insights/2021/10/greenovate-for-better-environment-and-economy.html> (Accessed: 18.01.2024).
- Lee, J. W., Young, M. K. & Young, E. K. (2018). Antecedents of adopting corporate environmental responsibility and green practices. *Journal of Business Ethics* 148: pp. 397–409.





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- Lee, C.C., Chang, Y.F. & Wang, E.Z. (2022). Crossing the rivers by feeling the stones: The effect of China's green credit policy on manufacturing firms' carbon emission intensity. *Energy Econ.* 116, 106413.
- Millar, N., McLaughlin, E. & Börger, T. (2019). The circular economy: Swings and roundabouts? *Ecol. Econ.*, 158, pp. 11–19.
- Mishra, P. (2021). What Is Green Innovation? – Types & Examples. Retrieved from: <https://www.feedough.com/what-is-green-innovation-types-examples/> (Accessed: 16.01.2024).
- OECD (2010). *Eco-Innovation in Industry: Enabling Green Growth*, OECD Publishing, Paris.
- Rekart (2023). *Green Innovations: Technologies Shaping a Sustainable Future*. Retrieved from: <https://medium.com/@rekart/green-innovations-technologies-shaping-a-sustainable-future-1c8005dae1fc> (Accessed: 18.01,2024).
- Rosenzweig, S. (2017). The effects of diversified technology and country knowledge on the impact of technological innovation. *Journal of Technology Transfer*, 42(3), pp. 564–584. <https://doi.org/10.1007/s10961-016-9492-5>
- Safieddine, F. & Baltezarević, R. (2016). *Advances in technologies evolving new dimensions in e-society. In: The Internet as a Tool of Modern Business and Communication* Saarbrücken, Germany: Lap Lambert Academic Publishing, pp. 43-75.
- Seman, N. A. A., Govindan, K., Mardani, A., Zakuan, N., Saman, M. Z. M., Hooker, R. E., et al. (2019). The mediating effect of green innovation on the relationship between green supply chain management and environmental performance. *J. Cleaner Prod.* 229, pp. 115–127. doi: 10.1016/j.jclepro.2019.03.211
- Sodhi, M.S. & Tang, C.S. (2018). Corporate social sustainability in supplychains: A thematic analysis of the literature. *Int. J. Prod. Res.* 56, pp. 882–901.
- Statista (2023). *Green technology and sustainability market size worldwide from 2022 to 2030*. Retrieved from: <https://www.statista.com/statistics/1319996/green-technology-and-sustainability-market-size-worldwide/> (Accessed: 17.01.2024).
- Takalo, S.K. & Tooranloo, H.S. (2021). Green innovation: A systematic literature review. *J. Clean. Prod.* 279, 122474.
- Weng, H.H.R., Chen, J.S. & Chen, P.C. (2015). Effects of green innovation on environmental and corporate performance: A stakeholder perspective. *Sustainability*, 7, pp. 4997–5026.
- WRI (2023). *Using Economics to Advance Sustainable, Just Societies*. Retrieved from: <https://www.wri.org/economics> (Accessed: 18.01.2024).
- Wüstenhagen, R., Hamschmidt, J., Sharma, S. & Starik, M. (2008). *Sustainable Innovation and Entrepreneurship*, Elgar: Cheltenham, UK.
- Yuan, X., Kaewsang-On, R., Jin, S., Anuar, M.M., Shaikh, J.M. & Mehmood, S. (2022). Time lagged investigation of entrepreneurship school innovation climate and students motivational outcomes: Moderating role of students' attitude toward technology. *Front. Psychol.* 13, 979562.