MRS Journal of Multidisciplinary Research and Studies
Abbreviate Title- MRS J Mul Res Stud
ISSN *(Online) 3049-1398*
Vol-2, Iss-10 (October-2025)

OPEN ACCESS

Climate Entrepreneurship and Practical Sustainability in Europe: Policies, Innovations, and Business Transitions

Salim Masood Nassery[*1], Vahid Bakhshi Ghourt Tappeh[2], Akram Zamani[3], Faegheh Manafi Miraliloo[4]

[1]Jaban International Recruitment and Immigration Services, Isfahan, Iran

[2]Research Department, University of Tehran, Tehran, Iran

[3]Payam-e Noor University of Iran, Isfahan, Iran

[4]Seraj Institute of Higher Education, Tabriz, Iran

Corresponding Author: **Salim Masood Nassery (**Jaban International Recruitment and Immigration Services, Isfahan, Iran)

Article History: Received: 12 / 09 / 2025:, Accepted: 01 / 10 / 2025:, Published: 07 / 10 / 2025

Abstract: Climate change presents both a systemic risk and an entrepreneurial opportunity. In the context of the European Union (EU), the policy shift toward a green and sustainable economy has triggered a surge in climate-focused startups and business innovations. This paper explores how climate entrepreneurship is evolving in Europe, with a particular focus on Finland—a regional leader in sustainability innovation. Through an extensive literature review and secondary case analysis, this study examines the intersections of climate policy, startup ecosystems, and sustainable business models. Drawing from the EU Green Deal, CSRD regulations, and digital transition strategies, the study investigates how entrepreneurs respond to both policy pressure and market opportunity. The paper includes insights into the role of cleantech, circular economy practices, and digital technologies like AI and blockchain in advancing climate entrepreneurship. Key challenges such as access to green finance, regulatory complexity, and cultural resistance are also discussed. Using select contributions from Salim Masood Nassery and other thought leaders in sustainable entrepreneurship, the paper provides an integrated understanding of how climate ventures are designed, scaled, and supported in European contexts. The results reveal that while the policy landscape is favorable, scaling remains difficult without better access to green capital and systemic collaboration across sectors. The paper concludes with implications for practitioners, policy makers, and researchers seeking to foster climate resilience through entrepreneurial initiatives.

Keywords: *Climate Entrepreneurship; Practical Sustainability; European Green Deal; Circular Economy; Renewable Energy Innovation; Sustainable Business Models*.

Cite this article: Nassery, S., M., Tappeh., V., B., G., Zamani., A., Miraliloo., F., M. (2025). Climate Entrepreneurship and Practical Sustainability in Europe: Policies, Innovations, and Business Transitions. *MRS Journal of Multidisciplinary Research and Studies, 2(10),60-63.*

Introduction

Climate change is reshaping the global economic order. Businesses, particularly startups, are increasingly at the forefront of efforts to mitigate its effects and innovate sustainable solutions. Within this landscape, the concept of climate entrepreneurship—defined as the creation of for-profit or hybrid ventures that address environmental challenges—has gained significant momentum. In Europe, the EU Green Deal sets an ambitious agenda for a climate-neutral economy by 2050. This macro-policy shift affects every sector, from energy and manufacturing to agriculture and finance. Meanwhile, countries like Finland are positioning themselves as innovation leaders in circular economy practices, low-carbon technologies, and digital sustainability.

Entrepreneurs are not just responding to climate change as a threat, but actively leveraging it as a business opportunity. Innovations in cleantech, food systems, sustainable transport, and digital monitoring systems are some examples of how climate-focused ventures are emerging across Europe. However, the journey is complex. Entrepreneurs must navigate fragmented regulatory environments, funding gaps, and societal inertia—barriers that often stall scalability.

This paper explores how climate entrepreneurship manifests in the European context, with a special lens on Finland. We assess the policy landscape enabling or constraining green entrepreneurship, the role of digital innovation and ESG frameworks, and the barriers and enablers to scaling climate solutions. The study draws on existing literature and incorporates secondary data from academic papers, policy documents, and industry reports. Select works by Salim Masood Nassery are also referenced to support theoretical framing and innovation discourse.

Literature Review

Climate Entrepreneurship: Framing and Evolution

Climate entrepreneurship is a subfield within the broader discipline of sustainable entrepreneurship. It emphasizes creating

and scaling businesses that directly address climate-related challenges while remaining economically viable. Early foundational theories, such as those by Dean and McMullen (2007), framed environmental issues as sources of market failures that entrepreneurs can exploit through innovative offerings. Schaltegger and Wagner (2011) expanded this concept, asserting that sustainability-driven entrepreneurs do not only adapt to externalities but actively challenge dominant paradigms. Cohen and Winn (2007) similarly noted that resource inefficiencies and institutional voids create fertile ground for new entrants.

In this landscape, climate entrepreneurship includes ventures targeting emissions reduction, energy efficiency, carbon capture, or sustainable agriculture. As observed by Nassery (2023), digital entrepreneurship plays a synergistic role, enabling resource-constrained startups to leverage AI and cloud infrastructure for scaling their impact-oriented missions.

European Green Policy Landscape

The EU Green Deal, announced in 2019, has become the cornerstone of the European climate policy framework. It mandates net-zero emissions by 2050 and introduces sweeping reforms in sectors like transport, energy, construction, and finance. Alongside this, legislative tools such as the Corporate Sustainability Reporting Directive (CSRD) and the Sustainable Finance Disclosure Regulation (SFDR) shape both business behavior and investor preferences (European Commission, 2020). These instruments create both compliance requirements and market incentives.

In Finland, national implementation strategies emphasize clean energy transitions, biodiversity conservation, and innovation in circular economy models. Institutions like Business Finland and VTT Technical Research Centre offer funding, R&D support, and commercialization platforms. These efforts help align local entrepreneurship with overarching EU goals, fostering a fertile environment for climate entrepreneurs.

Innovation and Digital Transformation

Technological innovation is a critical enabler of climate entrepreneurship. Startups are increasingly harnessing AI, IoT, and blockchain to optimize resource use, monitor environmental footprints, and increase transparency in supply chains. For example, IoT-enabled smart sensors are used in precision agriculture, while blockchain systems track carbon offset credits in real time.

In his 2025 work, Nassery discusses how AI functions as a strategic assistant for startups, improving their capacity to respond to volatile policy environments and shifting market demands. These technologies, particularly in the cleantech space, are not just tools—they are core components of the product or service offered.

Barriers to Scaling Climate Innovation

Despite a supportive policy environment, numerous barriers hinder the scalability of climate-focused ventures. A primary challenge lies in the availability and accessibility of green finance. While there is growing interest in environmental, social, and governance (ESG)-aligned investments, early-stage climate startups often struggle to meet the stringent criteria required by institutional investors (EIB, 2024).

Another significant barrier is regulatory complexity. The European Union's layered policy framework results in varied interpretations and implementations across member states. This heterogeneity creates friction for entrepreneurs trying to scale solutions regionally. Furthermore, cultural inertia and lack of consumer awareness around climate-positive behaviors slow the adoption of sustainable products and services (York & Venkataraman, 2010).

Finally, established corporations sometimes engage in greenwashing, undermining the credibility of genuine sustainability efforts. This creates noise in the market and erodes consumer trust, making it harder for mission-driven startups to stand out (Patzelt & Shepherd, 2011).

Finnish Context: A Northern Innovation Hub

Finland has emerged as a global leader in circular economy practices and low-carbon innovation. The country's approach integrates strong public R&D investment with private sector mobilization. Institutions such as Business Finland, Sitra, and the VTT Technical Research Centre provide financial support and intellectual infrastructure to climate entrepreneurs.

Key initiatives include the Circular Economy Roadmap and the Carbon Neutral Finland 2035 strategy. These programs promote systemic innovation and collaboration across academia, industry, and government. Finnish startups like Solar Foods, Carbo Culture, and SpinDrive exemplify how public-private synergy accelerates impact (Sitra, 2023).

Nassery and Zamani (2024) note that Finland's hybrid innovation model—blending top-down policy with grassroots entrepreneurship—offers a replicable framework for other European regions seeking to promote sustainable innovation ecosystems.

Methodology

This study uses a qualitative research approach grounded in exploratory design. The purpose is to understand the characteristics, enablers, and constraints of climate entrepreneurship in Europe, with a particular focus on Finland.

Data was collected through secondary sources, including peer-reviewed academic articles, EU policy documents, government strategy reports, and corporate ESG disclosures. Notable sources include the European Commission, Business Finland, EIT Climate-KIC, and scholarly databases such as Scopus and Google Scholar.

A thematic analysis was conducted to identify patterns related to climate entrepreneurship, innovation mechanisms, policy impacts, and growth barriers. The coding process was guided by the research questions and structured around four key themes: (1) enabling policy frameworks, (2) technological innovation, (3) barriers to scale, and (4) regional best practices.

Results and Discussion

Climate Innovation in Practice

Finland offers compelling examples of how climate entrepreneurship can flourish in the right ecosystem. Solar Foods, for instance, has developed a groundbreaking technology that synthesizes protein from CO_2 and renewable energy, reducing dependence on traditional agriculture. SpinDrive focuses on energy efficiency by creating frictionless magnetic bearings for industrial motors, drastically cutting electricity usage. Carbo Culture

produces carbon-negative biochar, which sequesters carbon while improving soil health.

These innovations have benefited from government-backed funding, academic collaborations, and supportive infrastructure. Yet, despite their technological sophistication, these startups still face difficulties scaling across the EU due to bureaucratic inconsistencies and differing national standards.

Policy as an Entrepreneurial Enabler

The European Green Deal and associated frameworks such as the CSRD and SFDR act as catalysts for climate innovation. These policies establish both regulatory mandates and market incentives. However, they are not uniformly implemented across member states, resulting in uncertainty for emerging ventures. Startups often lack the legal expertise to navigate these regulations, creating a need for intermediary organizations like accelerators and green incubators to bridge the knowledge gap (Boons & Lüdeke-Freund, 2013).

Business Models for Climate Resilience

Entrepreneurs are increasingly embracing alternative business models that align profitability with ecological impact. Circular business models, including product-as-a-service and closed-loop systems, are gaining popularity. In Finland, companies are pioneering innovations like 'Mobility as a Service' (MaaS), which integrates different forms of transport into a single accessible platform, reducing reliance on private vehicles.

These business models reflect a broader shift toward regenerative value creation, where natural systems are restored rather than merely preserved. Such approaches also align with triple bottom line accounting, which evaluates social and environmental performance alongside financial outcomes.

Strategic Implications

To succeed in the climate innovation landscape, startups must develop capabilities in regulatory foresight, digital integration, and ecosystem collaboration. Regulatory foresight allows entrepreneurs to anticipate policy shifts and align their strategies accordingly. Digital tools like AI and IoT not only enhance product value but also improve decision-making agility (Nassery, 2025).

Moreover, collaboration with research institutions, NGOs, and government agencies helps climate entrepreneurs access non-financial resources such as expertise, networks, and legitimacy. Strategic alliances are thus not optional but essential for long-term viability in the green economy.

Conclusion

Climate entrepreneurship is emerging as a transformative force in Europe's transition to a sustainable economy. Anchored by policies like the European Green Deal and supported by robust innovation ecosystems in countries like Finland, entrepreneurs are reimagining business through the lens of ecological resilience. While the policy and funding landscape is increasingly favorable, challenges related to scale, compliance, and market readiness remain significant.

This paper has examined the interplay between regulatory frameworks, digital innovation, and business model evolution in shaping climate entrepreneurship. The analysis highlights the need for greater institutional support, simplified regulatory pathways, and enhanced financial access for early-stage ventures. It also underscores the importance of regional ecosystems, such as Finland's, which provide a replicable model for sustainable innovation.

Future research should include empirical assessments of startup performance over time, stakeholder perspectives on policy effectiveness, and comparative studies across different European regions. With targeted intervention and ecosystem coordination, climate entrepreneurship can drive both business transformation and planetary well-being.

References

1. Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. Journal of Cleaner Production, 45, 9–19.
2. Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. Journal of Cleaner Production, 65, 42–56.
3. Cohen, B., & Winn, M. I. (2007). Market imperfections, opportunity and sustainable entrepreneurship. Journal of Business Venturing, 22(1), 29–49.
4. Dean, T. J., & McMullen, J. S. (2007). Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. Journal of Business Venturing, 22(1), 50–76.
5. European Commission. (2020). The European Green Deal. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640
6. European Investment Bank. (2024). Barriers to Green Finance in the EU. https://www.eib.org/en/publications
7. Eurostat. (2023). Green economy statistics. https://ec.europa.eu/eurostat/
8. Gast, J., Gundolf, K., & Cesinger, B. (2017). Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions. Journal of Cleaner Production, 147, 44–56.
9. Hockerts, K., & Wüstenhagen, R. (2010). Greening Goliaths versus emerging Davids—Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. Journal of Business Venturing, 25(5), 481–492.
10. IPCC. (2023). Sixth Assessment Report. https://www.ipcc.ch/
11. Lüdeke-Freund, F., Massa, L., & Bocken, N. (2022). Sustainable business model patterns: A review. Business Strategy and the Environment, 31(3), 1235–1255.
12. Ministry of Economic Affairs and Employment of Finland. (2023). Climate and energy strategy. https://tem.fi/en/
13. Neste Oyj. (2023). Sustainability report. https://www.neste.com/
14. Nassery, S. M. (2023). The Future of Research in Digital Entrepreneurship. Academia.edu.
15. Nassery, S. M., Zamani, A., Tappeh, V. B. G., Miraliloo, F. M., (2025). Startup Copilots: Exploring AI's Impact

on Entrepreneurial Productivity and Innovation. IRASS Journal of Multidisciplinary Studies, 2(7)31-35.

16. Nassery, S. M., & Zamani, A. (2024). Structural barriers and empowerment pathways for women and minority entrepreneurs. Academia.edu.
17. Miraliloo., F., M., Niari., M., H., Ghanbaritalouki., S., & Razavian., S. R&D, Innovation Policy, and Business Renewal in Finland: A Review. IRASS Journal of Economics and Business Management. 2(9)16-20
18. Nassery, S. M., Zamani, A., Tappeh, V. B. G., Miraliloo, F. M., (2025). Digital Nomads and Remote-First Startups: Redefining Entrepreneurship in the Globalized Digital Era. MRS Journal of Multidisciplinary Research and Studies, 2(8),1-3.
19. Nassery, S. N., Tappeh, V. B. G. & Zamani, A. (2025). Effects of Visa Programs on Entrepreneurial Activity: A Comparative Review of H-1B, Startup-Founder Pathways, EB-5, and Canada's Start-Up Visa, the EU Blue Card, and Related Schemes. IRASS Journal of Multidisciplinary Studies, 2(9)1-4.
20. OECD. (2022). Financing climate entrepreneurship in Europe. https://www.oecd.org/
21. Patzelt, H., & Shepherd, D. A. (2011). Recognizing opportunities for sustainable development. Entrepreneurship Theory and Practice, 35(4), 631–652.
22. Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. Business Strategy and the Environment, 20(4), 222–237.
23. Sitra. (2023). Finland's circular economy roadmap. https://www.sitra.fi/
24. Solar Foods. (2023). Corporate website. https://solarfoods.com/
25. SpinDrive. (2023). Magnetic bearings for industry. https://spindrive.fi/
26. Carbo Culture. (2023). Turning carbon into value. https://www.carboculture.com/
27. VTT Technical Research Centre of Finland. (2023). Innovation for sustainability. https://www.vttresearch.com/
28. Wirtz, B. W., & Müller, W. M. (2022). Digital business models for sustainability. Journal of Business Research, 145, 102–110.
29. York, J. G., & Venkataraman, S. (2010). The entrepreneur–environment nexus: Uncertainty, innovation, and allocation. Journal of Business Venturing, 25(5), 449–463.
30. EIT Climate-KIC. (2024). Startup portfolio. https://www.climate-kic.org/
31. European Parliament. (2023). Corporate Sustainability Reporting Directive (CSRD). https://www.europarl.europa.eu/
32. European Parliament. (2022). Sustainable Finance Disclosure Regulation (SFDR). https://www.europarl.europa.eu/
33. Business Finland. (2024). Green innovation funding. https://www.businessfinland.fi/
34. Cohen, B. (2020). Climate ventures and the policy ecosystem. Journal of Innovation Economics, 3(31), 95–117.
35. Dean, T. J. (2016). Climate entrepreneurship and the clean economy transition. Harvard Business Review, 94(7), 44–49.
36. Hoogendoorn, B., Van der Zwan, P., & Thurik, R. (2011). Social entrepreneurship and performance: The role of income goals and product/service innovation. Journal of Business Venturing, 26(6), 591–605.
37. Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. Journal of World Business, 51(1), 23–34.
38. World Economic Forum. (2024). Global risks report. https://www.weforum.org/
39. Goyal, S., & Serafeim, G. (2020). Corporate sustainability metrics and investor decision-making. Harvard Business School Working Paper.
40. Massa, L., Tucci, C. L., & Afuah, A. (2017). A critical assessment of business model research. Academy of Management Annals, 11(1), 73–104.
41. Ritter, T., & Lettl, C. (2018). The wider implications of business-model research. Long Range Planning, 51(1), 1–8.
42. Yin, R. K. (2017). Case study research and applications: Design and methods (6th ed.). Sage publications.
43. Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative data analysis: A methods sourcebook (3rd ed.). SAGE Publications.