Chapter 2
Circular Economy Strategies and Resource Efficiency:
Transforming Linear Processes into Circular Systems

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ABSTRACT

The transition from a linear economy to a circular economy (CE) is essential in addressing resource depletion, environmental degradation, and economic inefficiencies. This chapter explores CE strategies that emphasise resource efficiency, waste minimisation, and sustainable business practices. By rethinking traditional "take-make-dispose" models, CE fosters economic resilience, innovation, and long-term sustainability. It discusses key principles, including recycling, reuse, reduce, and technological advancements, alongside the role of businesses and policymakers in implementing circular strategies. Real-life illustrations highlight global efforts toward CE adoption, showcasing its impact on industries, supply chains, and communities. Furthermore, the chapter underscores the importance of regulatory frameworks, consumer behaviour, and cross-sector collaborations in driving circularity. As industries integrate CE principles, they unlock new economic opportunities, reduce reliance on virgin resources, and contribute to environmental conservation.

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CHAPTER IMPORTANCE

In this day and age, pressing challenges such as natural resource depletion and ecological damage have rendered the conventional linear economy model ("extract, manufacture, discard", or "take, make, dispose") unsustainable. Circular economy (CE) strategies underlining recycling and reusing resources, and reducing waste, offer a much-needed solution. In the wake of growing resource scarcity, increasing waste, and negative environmental impacts of industrialization, CE may offer a way to responsible and continual economic growth while conserving the environment. The present chapter discusses CE concepts, principles, business models, and the shift from a linear economy to CE, examines the role of resource efficiency in achieving sustainability in business operations, evaluates the role of technology in CE strategies, and observes efforts being made by nations across the globe to transition to CE. In doing so, the chapter, through real-life examples, underscores the growing importance of CE as not only an environmental necessity but also a critical business imperative in an increasingly resource-constrained world.

After reading the chapter, you should be able to:

- Understand the key concepts, principles, and strategies of CE.
- Differentiate between the linear economy model and CE.
- Recognise the significance of resource efficiency in achieving sustainable business operations.
- Evaluate the role of technological advancements in enabling CE practices.
- Identify global efforts and national policies aimed at transitioning to CE.
- Analyse how CE strategies can drive innovation, reduce waste, and promote economic growth while conserving natural resources.
- Apply CE principles to real-world business and policy scenarios to address resource and environmental challenges effectively.

1. INTRODUCTION

Natural resources and their derivatives form the physical basis for any economic system. Over the past few decades, these resources have come under significant pressure due to various reasons, including growing consumerism, irresponsible consumption patterns, unsustainable extraction practices, rising population, industrialization, urbanization, environmental degradation, rapid depletion of natural

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