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INSTITUTIONAL FRAMEWORKS FOR PROMOTING CIRCULAR ECONOMY DEVELOPMENT IN HO CHI MINH CITY

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INTRODUCTION

1. Rationale

The development of human society is confronting unprecedented ecological challenges. This is evidenced by the fact that current resource demand is approximately 1.7 times the Earth's regenerative capacity, while by 2050 the amount of plastic waste is projected to exceed the total mass of fish in the oceans. In this context, the circular economy (CE) has emerged as a strategic approach to harmonizing the relationship between economic growth and environmental sustainability.

From a theoretical perspective, the development of the CE is a process of systemic transformation that requires regulation and orientation through institutions. Institutions play a decisive role in establishing legal frameworks, allocating resources, coordinating actors, and creating incentives for technological innovation, thereby enabling the CE to move beyond an experimental model and become a dominant mode of development. However, institutional effectiveness depends significantly on the degree of institutional coherence and the practical capacity for implementation in each locality.

Ho Chi Minh City (HCMC) is among the pioneering localities in issuing programs and schemes related to the CE. Some practical models have achieved initial success, including high-tech waste treatment plants, "zero-waste" models, and urban recycling initiatives. Nevertheless, this process is facing major barriers: uneven awareness among relevant actors; insufficient institutional instruments in finance, credit, and technology; and loose intersectoral coordination among state management agencies, enterprises, and scientists.

These limitations indicate that the core bottleneck lies not merely in technology, but in the quality of institutions that promote the CE at the urban level. In the face of pressure to transform the growth model and meet the requirements of international integration, systematic research on institutions promoting the CE in HCMC is an urgent requirement in both theoretical and practical terms.

Accordingly, the dissertation, entitled ***"Institutional frameworks for promoting circular economy development in Ho Chi Minh City"***, aims to provide scientific foundations and policy recommendations to improve CE institutions in the coming period.

2. Research aim and tasks

2.1. Research aim

The dissertation aims to clarify the theoretical and practical foundations of institutions promoting the development of the CE; to assess the current state of such institutions in HCMC; and, on that basis, to propose orientations and solutions for improving and enhancing the effectiveness and efficiency of institutions promoting the CE in the city to 2030, with a vision to 2045.

2.2. Research tasks

- To review domestic and international studies related to the circular economy and institutions promoting the development of the CE;
- To systematize, supplement, and improve the scientific foundations of institutions promoting the development of the CE;
- To examine the experience of several localities in building and improving institutions that promote CE development and to draw lessons for HCMC;
- To analyze and assess the current state of institutions promoting CE development in HCMC during the period 2015-2024;
- To identify orientations and propose solutions for improving institutions promoting CE development in HCMC to 2030, with a vision to 2045.

3. Research objects and scope

3.1. Research objects

The subject of this thesis is the institutional framework for promoting the development of the city-level CE from a political economy perspective. This institutional framework is manifested through the system of regulations, policies, state management mechanisms, organizational structure, regulatory tools, and coordination among socio-economic entities aimed at promoting the development of the CE in HCMC.

3.2. Research scope

3.2.1. Scope in time and space

- In terms of time: The research was conducted during the period 2015 - 2024. From there, the study proposes solutions up to 2030 , with a vision to 2045.
- In terms of spatial scope: Conduct research to analyze and evaluate the institutions promoting the development of the CE within the socio-economic space of HCMC before June 30, 2025.

3.2.2. Scope of content

This dissertation focuses on formal institutions: the legal system, policies, management mechanisms, economic tools, organizational structure, and the impact of these institutions on the formation and operation of the CE.

4. Research methodology and methods

4.1. Basic Methodology

The dissertation is based on the methodology of Marxism-Leninism, the views of the Party and the State on socio-economic development, green growth and sustainable development; while selectively inheriting modern theories on institutions, the CE, resource management, urban development and public policy.

4.2. Research Methodology

The main research methods include: the dialectical materialism method; the method combining logic with history; the scientific abstraction method; the method of synthesizing and analyzing documents; the comparative method; the method of systematizing and researching secondary data; the sociological survey

method using questionnaires; and the method of analyzing differences and forecasting.

Notably, the thesis utilizes a survey of 106 valid questionnaires from experts, scientists, managers, and businesses in Ho Chi Minh City. The survey content focuses on the appropriateness of policies, implementation effectiveness, institutional barriers, and solutions for improving the institutional framework of the CE at the city level.

5. Scientific and practical contributions of the dissertation

5.1. Scientific Contributions

Firstly, the thesis contributes to the selective systematization and addition of new arguments to perfect the theoretical basis of institutions promoting the development of the CE at the city level from a political economy approach.

Secondly, the thesis provides additional concrete evidence. To conduct a systemic analysis of the institutionalization process of the CE in HCMC during the period 2015 - 2024.

Thirdly, the thesis suggests a theoretical approach to the institutional framework of the CE linked to the requirements of multi-stakeholder governance in the context of large urban areas.

5.2. Practical Contributions

Firstly, the thesis provides a comprehensive and up-to-date picture of the institutional framework promoting the development of the CE in HCMC.

Secondly, the thesis clearly points out the institutional limitations and causes in the development of the CE in HCMC.

Thirdly, the thesis proposes a system of solutions to improve the institutional framework of the CE by 2030, with a vision to 2045 , which is feasible and can be applied immediately.

6. Scientific and practical significance of the thesis

Firstly, it contributes to supplementing and perfecting the theoretical system on institutions promoting the development of the CE at the national level and mainly at the city (provincial) level in the new conditions of the socialist-oriented market economy in Vietnam and international integration.

Secondly , it provides a scientific basis for designing and implementing a legal and policy framework for the CE that is fully suitable for the specific characteristics of urban development in Vietnam.

Thirdly, affirm the central role of institutions in promoting innovation in growth models and the transition to a green, circular, and low-emission economy.

7. Structure of the thesis

Besides the introduction, conclusion, list of the author's published works related to the thesis, and bibliography, the thesis is structured into 4 chapters and 13 sections.

Chapter 1
LITERATURE REVIEW

1.1. Overview of studies on institutions promoting economic development

International studies consistently affirm the central role of institutions in promoting sustainable economic development. North, La Porta, and Rodrik emphasize that institutional quality is a decisive factor in productivity and growth. Ostrom expands to a multi-centered governance model, highlighting community participation in resource management and environmental change response. Modern approaches show that digital transformation only yields benefits when institutions are flexible, inclusive, and adaptable. Environmental research by Nordhaus and the IPCC further confirms that institutions are the foundation of climate governance and new economic models.

Domestically, works by Le Du Phong, Nguyen Hong Nga, Pham Thi Tuy, Tran Quoc Toan, Ngo Tuan Nghia, and Le Quang Canh all point to institutional barriers as a major bottleneck to growth, while proposing legal reforms, coordination mechanisms, and improved implementation capacity. Studies on regional institutions by Hoang Ngoc Phong and Tran Thi Hong Minh emphasize that regional linkages, regional finance, and multi-level coordination are conditions for optimizing resources.

1.2. Overview of projects related to the development of a circular economy

Classic works by McDonough & Braungart, Stahel, and the Ellen MacArthur Foundation laid the theoretical foundation for the CE, emphasizing the redesign of products and processes towards "zero waste," extending their lifecycles, and restoring ecosystems. The OECD affirms that the CE is a key tool for separating economic growth from resource extraction and emissions, with the potential to reduce CO_2 emissions by 25-30% by 2060 through the redesign of material lifecycles. Geng et al., Ghisellini et al., Lacy et al., and the WEF clarify the implementation of the CE at multiple levels (micro, meso, macro), especially in heavy industry, and consider it a pillar for achieving the Net Zero goal. In general, the CE worldwide is approached as a multi-level system, linked to indicators, industry strategies, and new business models (serviceization, sharing, remanufacturing, deep recycling).

In Vietnam, studies by UNDP, Circular Innovation Lab & ISPONRE, the National Academy of Politics, etc., emphasize the crucial role of institutions, policies, and central coordinating agencies in the CE. The barriers to the development of the CE are consistently identified: fragmented policies, lack of a

central coordinating body, limited awareness, weak recycling infrastructure and technology, and a lack of sufficiently strong financial incentives. Individual studies by researchers such as Bui Quang Tuan, Tran Van Mien, and Nguyen Anh Tuan show that the CE in Vietnam is transitioning from the initiation phase to implementation, with many pioneering business and local models.

1.3. Overview of research studies on institutions promoting circular economy development at the city level

International studies on institutional mechanisms promoting the CE at the city level focus on the circular city model and the role of urban governance. Authors from Prendeville, the Ellen MacArthur Foundation, and others analyze the transformation process of several pioneering cities. Studies by the WEF, PwC, OECD, and UN-Habitat further clarify the role of local governments as "leaders - coordinators - facilitators" proposing action frameworks and highlighting challenges related to finance, capacity, coordination, and data. Overall, international works affirm that urban CE transformation is a complex institutional process requiring a specific strategy, a flexible legal framework, and a multi-level, multi-stakeholder coordination mechanism.

Recent domestic studies have primarily approached the CE in a few localities from the perspective of roadmaps, policies, and pilot models. Authors emphasize the role of the legal framework, the selection of priority areas, and the design of support tools. Nguyen Hong Quan's research broadens the urban perspective, highlighting challenges regarding evaluation criteria, decentralization, resources, and governance capacity when implementing the CE in Vietnamese cities. However, to date, no comprehensive, systematic study has been conducted on the institutional framework for promoting the development of the CE at the provincial/city level.

1.4. Gaps and key research issues of the Thesis

Previous studies have affirmed the crucial role of institutions in economic development, sustainable development, and the CE. However, three main gaps remain. Firstly, there is a lack of systematic research on institutions promoting the CE at the city level from a political economy perspective. Secondly, there is a lack of a framework of criteria for evaluating urban-level circular economy institutions, especially criteria regarding coordination among stakeholders, economic tools, implementation capacity, and socio-economic and environmental impacts. Thirdly, empirical research on HCMC is fragmented, failing to fully assess the institutionalization process of the CE during the 2015-2024 period and not proposing solutions for improving institutions in the context of the city up to 2030, with a vision to 2045.

This thesis focuses on addressing three key issues: clarifying the level of synchronization, effectiveness, and efficiency of the CE institution; analyzing the

coordination and decentralization mechanisms in the implementation of the CE institution at the city level; and proposing a system of solutions to improve the CE institution in HCMC.

1.5. Analytical framework of the dissertation

Chapter 2
THEORETICAL FOUNDATIONS OF INSTITUTIONS PROMOTING CIRCULAR ECONOMY DEVELOPMENT AT THE CITY LEVEL AND PRACTICAL EXPERIENCES

2.1. Theoretical foundations

2.1.1. Basic concepts

- *The concept of a circular economy:* is a model for organizing and operating the economy based on redesigning the production and consumption system in a closed-loop manner, where the flow of materials, energy, and information is continuously reused, recycled, and regenerated to improve resource efficiency, reduce emissions, and move towards sustainable development.

- *The concept of circular economy development:* is the process of transforming and perfecting the growth model towards reorganizing production, distribution, consumption, and waste treatment activities in order to efficiently use resources, extend the life cycle of materials, reduce emissions, and regenerate ecosystems, thereby aiming for sustainable development.

- *The concept of institutions :* refers to a system of rules, norms, mechanisms, and organizations established by humans to regulate behavior and social relations, thereby maintaining order and guiding the movement and development of society.

- *The concept of economic institutions:* These are a system of rules, policies, mechanisms, and organizations that regulate economic relations between entities in the processes of production, distribution, exchange, and consumption, aiming to guide resource allocation, ensure economic stability, and promote development.

- *The concept of institutions for developing a circular economy:* refers to the totality of rules, policies, mechanisms, and institutions built and implemented by the State to guide and regulate the organization and operation of the economy according to a circular model, aiming for efficient resource utilization, reduced waste generation, and sustainable development.

- *The concept of institutions promoting the development of the circular economy:* This refers to a component of the CE development framework, encompassing mechanisms, policies, regulatory tools, and organizational implementation methods established by the State and local authorities to create

incentives, support, and coordinate socio-economic entities participating in the CE development process.

2.1.2. Characteristics of institutions promoting the development of a circular economy at the city level.

Firstly, this is a highly interdisciplinary institution because the CE involves the environment, industry, agriculture, construction, transportation, energy, science and technology, finance, and education.

Secondly, this institution is multi-stakeholder, requiring the participation of the government, businesses, citizens, social organizations, research institutions, and the international community.

Thirdly, city-level CE institutions have strong enforceability because the city is the place that directly implements policies, organizes infrastructure, monitors behavior, and facilitates the operation of the circular model.

Fourth, this institution is highly adaptable because it must respond to climate change, technological transformation, market fluctuations, and integration requirements.

Fifth, the CE system is closely linked to sustainable urban governance, thus requiring data, transparency, accountability, and coordination capacity.

2.1.3. The role of institutions in promoting the development of a circular economy at the city level.

Firstly, it is necessary to provide direction and establish a legal framework for the development of the CE.

Secondly, coordinate and promote the participation of stakeholders in the development of the CE.

Third, create incentives for innovation and transform the growth model.

Fourth, improve resource utilization efficiency and control environmental externalities.

Fifth, improve the effectiveness of urban governance and promote sustainable development.

2.2. Content, evaluation criteria, and factors influencing the institutional framework for promoting circular economy development at the city level.

2.2.1. Institutional framework for promoting circular economy development at the city level

2.2.1.1. Institutional framework of laws, policies, and economic tools (legal framework)

The institutional framework for the CE can be approached at three levels: *the strategic orientation level,* which establishes the vision for sustainable development and the logic of transitioning to a renewable model; *the regulatory level,* which details the rights, obligations, and technical

standards to regulate the behavior of actors; and the *regulatory tool level*, which transforms regulations into operational mechanisms through taxes, incentives, standards, or green financial instruments.

2.2.1.2. Institutional framework for entities involved in circular economy development

The institutional framework for the development of the CE emphasizes the roles and interactive relationships between actors within the socio-economic system. Institutions are only effective when they operate through the actions of participating actors. In this structure, the government provides direction and coordination, businesses innovate and implement, while the community and social organizations co-create and monitor. The coordination among these actors creates an "institutional ecosystem" that ensures the transition to a circular economy is efficient and sustainable.

2.2.1.3. Institutional framework regarding organizational structure and resources for implementation

Institutional capacity is formed from three groups of resources: coordination and organizational capacity, financial and human resources, and a data system to support decision-making. When these resources are secured, the governance apparatus can smoothly implement the CE policy, promoting innovation and transforming production and consumption models.

2.2.2. Criteria for evaluating institutions promoting circular economy development at the city level

2.2.2.1. Forming and expanding circular economy models in the city.

This criterion can be specified through several key aspects: *Firstly,* the number of CEmodels implemented in the area. *Secondly,* the extent of dissemination and the potential for replication of these models. *Thirdly,* the quality and effectiveness of the CE models. *Fourthly,* the level of institutional support for the model development process.

2.2.2.2. Completing the legal framework, policies, and governance mechanisms for the circular economy at the city level.

This criterion can be concretized through several key aspects: *Firstly,* the consistency and stability of the legal framework. *Secondly,* the degree of integration of the CE into development strategies and plans. *Thirdly,* inter-sectoral coordination mechanisms and the participation of stakeholders. *Fourthly,* incentive mechanisms and economic policy tools.

2.2.2.3. Socio-economic and environmental impacts of transitioning to a circular economy development model.

Firstly, economic impact is measured by specific indicators such as: Increased resource productivity; Savings in waste treatment costs; Revenue and profits from recycling, repair, and remanufacturing industries; Number of

businesses adopting the circular economy model or "green" certification; Number of new jobs created in recycling, repair, design, and environmental technology industries.

Secondly, the social impact of the circular economy is reflected in changes in the awareness, behavior, and level of participation of people, businesses, and social organizations in the transformation process.

Thirdly, the environmental impact is demonstrated through a significant improvement in resource efficiency and a reduction in urban environmental pollution.

2.2.3. Institutional factors influencing the development of a circular economy at the city level

2.2.3.1. Direct factors: Awareness and commitment of local authorities; Infrastructure and technology; Financial resources; Community and business participation.

2.2.3.2. Indirect factors: National legal and policy system; international integration; technological progress and global innovation.

2.3. International and domestic experiences in improving institutions to promote the development of a circular economy at the city level.

2.3.1. Foreign experiences in improving institutions to promote the development of a circular economy at the city level.

2.3.1.1. Experiences in Seoul, South Korea

Seoul has established an independent, interdisciplinary circular economy institutional framework, highlighted by the 2017 Circular Resource Ordinance. The city implemented a five-year action plan, applying volume-based waste fees, developing recycling centers in each district, and integrating the CE into urban planning, construction, and waste management. A Coordinating Committee was established to connect the 25 districts, while a decentralization mechanism empowers districts to proactively initiate and mobilize the community to operate recycling centers. Seoul mobilizes funding through the Urban Resource Fund, tax incentives, PPPs, and EPRs to support circular businesses. The city also promotes digital technologies such as Eco-Mileage, big data, and waste mapping to track material flows, monitor policies, and optimize circular infrastructure.

2.3.1.2. Experiences in Shenzhen City - China

Shenzhen, China's leading technology city, views the CE as its main development direction, employing an "integrated institutional model" in urban planning, eco-industrial parks, a “zero-waste city” program, and EPR policies for the electronics industry. The city operates an effective inter-agency coordination mechanism under the direction of the National Development and Reform Commission, while also strongly decentralizing power to districts and industrial parks in material flow management. Digital technologies such as big data, AI, and

product lifecycle data platforms are applied to optimize resources and manage waste. As a result, Shenzhen has built a modern CE institutional system, promoting innovation and a green, sustainable supply chain.

2.3.2. Domestic experience in improving institutions to promote the development of a circular economy at the city level.

2.3.2.1. Da Nang City - Vietnam

Da Nang is proactively integrating the CE into its development strategy through the Circular Economy Roadmap 2022-2045 and various policies related to the environment, energy, sustainable consumption, and waste sorting. The city has established an inter-sectoral coordination mechanism with the Circular Economy Coordination Board and the Circular Economy Office (DCEH) to connect departments , sectors, businesses, and the community according to the "State - Private - Community" model. Da Nang is also attracting international investment by offering incentives for supporting industries, high technology, microchip research, and free trade zones; expanding cooperation with UNDP, GIZ, UNIDO, the World Bank, and technology companies to acquire technology, build material flow data, and develop recycling models. As a result, the city is gradually perfecting its institutional, technological, and resource foundations towards the goal of becoming a circular city by 2045.

2.3.2.2. Hai Phong City, Vietnam

Hai Phong is a strategic city in the Red River Delta region, with the potential to become a green industrial and service center. The city views the CE as a pillar of development and has successfully piloted eco-industrial parks such as DEEP C and Nam Cau Kien, with models of industrial symbiosis and resource reuse. Simultaneously, Hai Phong is perfecting its legal framework, integrating CE criteria into planning, investment, and environmental assessment, and establishing an inter-sectoral steering committee to ensure implementation. The city also applies numerous incentives regarding land, taxes, green credit, and technical support to promote business transformation. Furthermore, Hai Phong is strengthening international cooperation with UNIDO, GIZ, JICA, and SECO to acquire technology and governance models, creating a solid foundation for the development of the urban CE.

2.3.3. Reference values for Ho Chi Minh City

Experience both domestically and internationally shows that Ho Chi Minh City needs to build an integrated CE institutional framework, embedded in planning and equipped with economic tools such as volume-based waste fees, tax incentives, and green public procurement. Successful models all affirm the role of multi-stakeholder governance, in which the government leads, businesses are the implementing force, and the community participates in monitoring and changing behavior. Clearly defined roles and the establishment of inter-sectoral coordination

mechanisms have helped cities like Seoul and Shenzhen effectively implement the CE. Along with that, a strong organizational structure, clearly defined coordinating agencies, and investment in data, technology, and infrastructure are necessary conditions for the effective operation of the CE. These lessons suggest that Ho Chi Minh City should aim for a proactive institutional model, effective decentralization, and the mobilization of diverse resources for the development of the CE.

Chapter 3
CURRENT STATE OF INSTITUTIONS PROMOTING ECONOMIC DEVELOPMENT CIRCULATION IN HO CHI MINH CITY, 2015-2024

3.1. Socio-economic development context affecting the institutions promoting circular economy development in Ho Chi Minh City

3.1.1. Overview of Ho Chi Minh City

HCMC will become the largest megacity in the country from July 1, 2025, with an area of over 6,772 km² and a population of over 14 million. Located in a tropical monsoon climate zone, the city is favorable for solar energy development but is strongly impacted by climate change, particularly flooding and rising temperatures. The city has significant advantages in terms of its coastline, with a 328 km long shoreline, strong and stable winds, and approximately 13,500 tons of solid waste per day, opening up potential for the development of renewable energy and the circular economy. Urban infrastructure continues to improve with numerous transportation, electricity, water, and public service projects being expanded. HCMC currently has 6 industrial parks and export processing zones, a large workforce, and a large consumer market, playing a central role in the national economy, contributing about one-fifth of the national GDP and more than one-quarter of the national budget. However, the city also ranks first in the country in greenhouse gas emissions with 57.57 million tons of CO_2 (2018), of which 93.6% comes from stationary energy and transport.

3.1.2. Economic development context in Ho Chi Minh City and the impact of the Covid-19 pandemic

HCMC's economy has maintained stable growth for many years, despite being severely impacted by the Covid-19 pandemic, which slowed growth rates during the 2016-2020 and 2021-2025 periods. Since 2022, the city's economy has shown a clear recovery with an average annual growth rate of 7.6-7.76%. After July 1st, 2025, HCMC will expand into a megacity, forming a leading economic, logistics, and technology center in Southeast Asia. This expansion brings significant advantages in terms of markets, resources, industrial infrastructure, and

seaports, but also places immense pressure on transportation infrastructure, waste management, the environment, and urban governance.

3.2. Institutions promoting the development of a circular economy in Ho Chi Minh City during the period 2015 - 2024

3.2.1. Legal and policy framework related to the circular economy in Ho Chi Minh City

At the strategic level , the institutional framework promoting the CE in Vietnam is firmly built on the foundation of the Party's policies and resolutions on sustainable development, starting with the mindset of not sacrificing the environment for economic growth. Over the years, this roadmap has expanded from waste recycling to optimizing energy resources, creating a crucial political basis for modern urban operating models. By the 13th and 14th Party Congresses, the CE officially became a national strategic orientation, playing a central role in the new growth model linked to green transformation and digital transformation. Based on this, HCMC has pioneered the " localization " of these strategies through its global urban planning until 2050, affirming its leading role in implementing a green and low-emission development model.

At the regulatory level, The current regulatory system for the CE has been established relatively comprehensively and synchronously from the national to the local level. At the macro level, the 2020 Environmental Protection Law and its guiding decrees have created a multi-dimensional legal framework, directly regulating the incentive mechanisms and responsibilities for implementing the CE. Following this direction, HCMC has proactively concretized it through key documents such as Decision 4645/QD-UBND, aiming to map out sustainable economic development by 2030. In particular, the city has also issued specific regulations to promote the shift towards an eco-industrial park model, focusing on industrial symbiosis and the reuse of by-products. Overall, this system demonstrates a harmonious combination of compliance with national laws and the creativity and flexibility of the city government's administration.

At the regulatory level, Ho Chi Minh City utilizes financial policies such as tax incentives and credit under Decree 08/2022/ND-CP, combined with technical standards like the Power Development Plan VIII, to create both incentives and pressures for businesses to standardize production towards resource conservation. Simultaneously, green growth and sustainable production plans have concretized this goal through waste sorting at source, eco-labeling, and support for innovation in the start-up community. In particular, industrial parks and export processing zones have become key areas for piloting industrial symbiosis models, where businesses share infrastructure and optimally reuse by-products. Linking “green business” criteria with investment incentives not only promotes environmental

protection but also creates a new competitive advantage for the city's economy in the modern context.

Overall, the period from 2015 to 2024 shows that Ho Chi Minh City's institutional architecture for the CE has been fully formed through three layers: orientation, regulations, and regulatory tools, thereby clearly demonstrating its determination to lead the transition to the CE model.

3.2.2. Institutions regarding stakeholders involved in promoting the development of the circular economy.

** Ho Chi Minh City Government*

The city government plays a central role in guiding, issuing the legal framework, and coordinating implementation. During the 2021-2024 period, the city accelerated institutionalization with a rapid increase in the number of documents, reflecting a shift from a reactive to a proactive policy-making approach. Important decisions such as 503/QD-UBND, 4645/QD-UBND, and 3797/QD-UBND demonstrate that the city not only sets out strategies but also concretizes them into goals, roadmaps, coordination mechanisms, and support tools for businesses, while adhering to the Net Zero commitment and the specific mechanisms under Resolution 98/2023/QH15. Ho Chi Minh City also integrates the circular economy into urban planning, waste management, energy, and transportation, gradually developing eco-industrial park models, modern waste treatment infrastructure, and green transportation. Overall, the city government is shifting from a "waste management" model to a "resource regeneration" model, laying an important foundation for the development of the urban CE.

** Businesses*

HCMC currently has over 345,000 businesses, with more than 4,000 new businesses established each month, creating an important foundation for innovation in green business models. However, the level of integration of the CE into strategies remains limited, with only about one-third of businesses assessing opportunities and challenges, developing plans, or setting CE goals. Regarding environmental compliance, businesses have a relatively high rate of reporting and certification, but mostly at the minimum level; strategic standards such as LCA, ISO 14064, or EPR are still rarely applied. Greenhouse gas inventories, energy audits, and patent registrations related to the circular economy are low, indicating a lack of capacity in product lifecycle management. Investment in clean technology innovation is also limited, with only 16.2% of businesses investing, significantly lower than regional and international standards. Overall, businesses in HCMC have moved from awareness to action, but they are still in the early stages and need to be further promoted to meet the requirements of the transition to the CE.

** Communities, social organizations, and the system of universities and research institutes.*

The community and social organizations in HCMC play a crucial role in promoting the CE through numerous large-scale and grassroots activities. Events such as the “Green Living Day” in 2024 attracted over 9,800 participants, collecting 1,300 pieces of clothing, 241 electronic devices, and 11,500 plastic bottles for recycling. At the community level, "Green Sunday" movements can collect up to 10 tons of waste, while waste exchange programs generate approximately 1.5 tons of recyclable waste. The city currently has nearly 300 “Environmental Self-Management Teams” models. Ward 14 (Go Vap District) alone handled 38 violations and collected 52 million VND in fines between 2021 and 2023. Beyond the community, more than 30 social organizations and NGOs such as GreenHub, CHANGE, and Live & Learn are implementing programs to reduce plastic waste, promote green communication, and support businesses in innovating circular models. The group of research institutions also plays a core role, with over 15 green research units and more than 80 universities, including two that will be included in the international SDGs ranking in 2024. In addition, HCMC has 155 vocational education institutions, many of which have integrated "green - circular" content into their training, such as the “Green Logistics” program of Saigon College.

3.2.3. Organizational structure and inter-sectoral coordination mechanisms

HCMC has initially established an inter-agency coordination mechanism to implement the CE. The city has assigned specific tasks to departments and agencies through three important documents: Decision 503/QD-UBND (2022), 4645/QD-UBND (2022), and 3797/QD-UBND (2023), creating a legal basis for binding implementation responsibilities. The coordination mechanism is organized into three tiers: the City People's Committee plays the overall leadership role; the Department of Finance (formerly the Department of Planning and Investment) plays the coordinating role; and the remaining departments and agencies are the implementing forces according to their specialized functions. This implementation network includes more than 10 units, from departments and agencies to export processing zones, industrial parks, and the system of communes/wards/special zones. Departments and agencies have been assigned clear tasks such as designing green financial tools, developing circular agriculture, innovating technology, building eco-industrial parks, or deploying CE data. This division of labor helps reduce overlap and increase the proactive role of each sector in implementing the CE. Overall, HCMC has formed a fairly comprehensive coordination structure, creating a foundation for implementing CE policies more synchronously and effectively in the future.

3.3. General assessment of the institutional framework promoting the development of the circular economy in Ho Chi Minh City during the period 2015 - 2024

3.3.1. Achieved Results

3.3.1.1. Regarding the formation and replication of circular economy models in the city.

HCMC has developed high-tech agricultural zones for crop cultivation, livestock farming, and aquaculture, maintaining the largest high-tech dairy cattle herd in the country.

By 2025, the city will have approximately 1,728 hectares of fruits and vegetables certified under VietGAP standards, involving 1,354 organizations/individuals, accounting for over 60% of the total fruit and vegetable cultivation area.

In the renewable energy sector, there were 14,210 rooftop solar power systems with a total capacity of 358.38 MWp, feeding approximately 274 million kWh back into the grid in 2024.

The potential for rooftop solar power installation is estimated at approximately 5,081 MWp, with the industrial sector accounting for over 31% and households accounting for over 62%.

Regarding waste-to-energy, the city has operated two waste-to-energy plants with a total capacity of approximately 80 MW and is currently implementing five new projects, expected to reach 340 MW by 2030.

The Hiep Phuoc Industrial Park, a pilot project for an eco-industrial park model, has achieved approximately 76% of the criteria according to the international framework.

These figures show that HCMC has initially formed an important foundation for implementing and expanding circular economy models in agriculture, industry, and waste management.

3.3.1.2.Completing the legal framework, policies, and governance mechanisms for the circular economy at the city level.

During the period 2020-2024, HCMC established a fairly comprehensive policy framework for the circular economy with important documents such as Decision 503/QD-UBND, 4589/QD-UBND, 4645/QD-UBND, and Resolution 98/2023/QH15, while integrating the CE into the HCMC Planning 2021-2030, with a vision to 2050. Survey results show that the legal framework's alignment with national policies and international commitments was rated “Good” by a high percentage, but its concretization and feasibility were still rated “Average” by many opinions, and the policy monitoring and evaluation mechanism was rated “Average” and “Not Good”. The inter-agency coordination mechanism was rated “fair” with 49.3%, but only 16.4% rated it “highly effective” while 25.4%

considered it “ineffective” and 6% perceived it as “fragmented” reflecting the limited level of substantive linkage between agencies. Regarding economic tools, the Enterprise Science and Technology Development Fund has allocated over 6,020 billion VND but only about 2,108 billion VND has been utilized, with only 6% of businesses accessing it. The Environmental Protection Fund, with a charter capital of approximately 59.4 billion VND, has only supported 94 projects with over 100 billion VND, with only 2.2% of businesses accessing it. Green credit outstanding reached approximately VND 637,000 billion (equivalent to 4.5% of total outstanding loans), but businesses in the CE sector in HCMC still face difficulties accessing it due to a lack of a unified definition of “green projects” complex appraisal procedures, and a mismatch between long-term capital needs and short-term bank funding sources. Decision 42/2024/QD-UBND on interest rate support through HFIC (supporting 50-100% of loan interest, up to VND 200 billion/project over 7 years) is considered a strong financial tool to encourage green transformation and the CE at the enterprise level. Overall, the data shows that HCMC has built a relatively comprehensive legal framework and begun to form coordination mechanisms and economic tools for the CE, but the level of concretization, the effectiveness of inter-sectoral coordination, and the spread of economic incentive policies still have significant room for improvement.

3.3.1.3. Economic, social, and environmental impacts of transitioning to a circular economy development model.

The implementation of the energy saving and efficiency program helps Ho HCMC save approximately 2.17% of electricity annually, equivalent to 560 million kWh. About 31% of household solid waste (equivalent to 4,000 tons/day) has been recycled, composted, or incinerated for electricity generation, thereby reducing the pressure on landfills and the cost of investing in new landfills. Two waste-to-energy plants, each with a capacity of 40 MW, along with recycling models such as Vietstar and Tam Sinh Nghia, are creating new economic value from waste and reducing emissions. The scale of green labor in HCMC is estimated to reach approximately 205,555 people by 2025, concentrated in renewable energy, green construction, clean industries, and green financial and consulting services. The “Green Living Day” and “Green Sunday” campaigns helped 98.2% of households access environmental information, and approximately 89.9% of students, civil servants, and public employees changed their behavior towards being environmentally friendly. Air quality improved with PM10 levels meeting standards at 33 out of 36 locations and PM2.5 levels meeting standards at 36 out of 36 locations during the 2021-2024 period, along with the operation of Metro Line 1 contributing to reduced emissions from transportation. In terms of ecology, HCMC restored over 7,000 hectares of mangrove forests in Can Gio and

planted over 620,000 new urban trees, increasing carbon absorption capacity and improving living spaces.

3.3.2. Limitations, causes of limitations

3.3.2.1. Limitations

Firstly, the formation and scaling up of CE models in the city are slow and lack widespread impact. Existing initiatives are small-scale, isolated, and lack systemic linkages. Scaling up is difficult due to the limited capital and technology of small and medium-sized enterprises, combined with uneven awareness of green consumption among the community, resulting in very slow formation of circular value chains.

Secondly, the legal framework, policies, and governance mechanisms for the CE at the city level lack consistency. Development policies are fragmented across many sectors, lacking a comprehensive institutional framework and feasible implementation tools. Coordination among departments and agencies is overlapping; at the same time, the city still lacks green finance mechanisms and a unified set of criteria for monitoring and evaluation.

Thirdly, the socio-economic and environmental impacts of the transition to a CE are not yet fully apparent. The transition has not created a turning point for the growth model, as production still consumes many resources and the rate of clean technology adoption remains low. The results in terms of pollution reduction or the creation of green jobs have not yet matched the city's potential.

3.3.2.2. Causes of the limitations

Firstly, understanding of the CE is limited and superficial. Most stakeholders still equate this model with environmental protection or conventional waste recycling, rather than a strategy for restructuring the value chain. In reality, the percentage of businesses that actually incorporate the CE into their business strategies is very low. In the public sector, implementing officials are still unclear about new management tools; while in the community, green consumption habits are not sustainable due to a lack of information and integrated collection services.

Secondly, the capacity for governance and coordination in institutional implementation has not met the requirements. Coordination between departments and agencies remains largely vertical, lacking stable horizontal linkage mechanisms. Pilot models under Resolution 98 are few and have not completed their cycle for widespread institutionalization. Furthermore, the lack of core data systems on material flows and waste streams makes policy planning and evaluation difficult.

Thirdly, there are serious limitations in financial, technological, and human resources. Environmental, science, and technology support funds are small or difficult to access due to complex procedures and a lack of clear criteria for green projects. The city also lacks large-scale, modern recycling and reuse technologies.

Finally, there is a shortage of human resources with interdisciplinary expertise in the CE, both in quantity and quality, directly impacting the practical operation of the model.

Chapter 4
ORIENTATIONS AND SOLUTIONS FOR IMPROVING INSTITUTIONS PROMOTING CIRCULAR ECONOMY DEVELOPMENT IN HO CHI MINH CITY TOWARD 2030, WITH A VISION TO 2045

4.1. Forecasting the context and directions for improving institutions to promote the development of a circular economy.

4.1.1. Forecasting the global and domestic context impacting institutions promoting circular economy development.

Global Context: Firstly, the circular economy is becoming an inevitable trend in the 2020s-2030s due to climate pressure, resource depletion, and waste pollution. Secondly, the CE helps reduce resource consumption, significantly cut emissions, and contribute to sustainable development goals. Thirdly, the demand for greening global supply chains forces major cities to improve their CE institutions. Fourthly, digital technology and big data are driving the "circular city" model, requiring HCMC to build data institutions, digital transformation, and support circular business models.

Domestic context: Firstly, the Net Zero commitment at COP26 compels Vietnam and HCMC to transform their growth model, implement Environmental Protection Plans (EPRs), sort waste, conduct carbon inventories, and support businesses in meeting international green standards. Secondly, administrative restructuring opens up new governance space, facilitating streamlined operations, standardized environmental standards, and the development of large-scale CE models. Thirdly, the expanded governance space enhances institutional effectiveness, accountability, and the ability to synchronously implement CE policies aligned with HCMC's sustainable development goals.

4.1.2. Directions for improving institutions to promote the development of a circular economy.

Firstly, it is necessary to complete the legal and policy framework in a synchronized and transparent manner, including developing a City-level Circular Economy Action Plan with priority sectors, clear measurement criteria and responsibilities; issuing technical standards on recycling and industrial symbiosis; and simultaneously implementing financial and non-financial incentives such as circular taxes and fees, green credit, green public procurement, carbon markets, and support for businesses in the CE infrastructure.

Secondly, enhance governance capacity and diversify the model of the CE through the establishment of a competent coordinating body; training and developing staff in systems thinking and circular economy implementation skills; developing high-quality human resources; and building a city-level set of CE indicators for monitoring using digital data.

Thirdly, it is crucial to enhance data, research, and selective cooperation by building a unified circular economy database system, promoting R&D tailored to urban specificities, proactively localizing international experience, and expanding cooperation to attract green technology, knowledge, and finance. This is a key condition for HCMC to improve the effectiveness of CE governance and meet the requirements of sustainable development in the new era.

4.2. Solutions for improving the institutional framework to promote the development of the circular economy in Ho Chi Minh City.

4.2.1. Solutions to enhance awareness and institutional capacity regarding the circular economy

The group of solutions aimed at raising awareness of the CE throughout HCMC focuses on the following main points:

First, Develop a city-wide communication and education strategy on the circular economy.

A comprehensive communication plan for the 2025-2030 period needs to be developed, along with the implementation of regular campaigns led by the Department of Agriculture and Environment, in coordination with HTV, VOH, and the Department of Science and Technology. This long-term plan reflects HCMC's political priorities, creating a unified roadmap to replace fragmented activities, and contributing to the formation of a "circular culture" within the community. Besides strengthening the content of the CE on HTV, VOH, ward/commune/special zone fanpages, and familiar programs, the city needs to leverage the influence of KOLs (Key Opinion Leaders) to spread the message, transforming the CE from an abstract concept into concrete, relatable, and easily applicable behaviors in daily life.

Secondly, Enhancing the capacity of managers and implementers of circular economy policies.

Enhancing the capacity of officials is a crucial factor in the effective implementation of the CE in HCMC. The city needs to organize regular training on modern management tools, value chain analysis, and how to integrate circularity into public investment planning. Simultaneously, it needs to strengthen cooperation with international organizations to update advanced knowledge and green finance solutions. Furthermore, strengthening internal communication and integrating this content into public service evaluation criteria will create momentum for innovative management thinking, helping to build a

modern inter-sectoral management system and effectively lead the green transformation process.

Third, Supporting businesses in enhancing their capacity to transition to a circular production model.

HCMC needs to develop specialized consulting and training programs to support small and medium-sized enterprises (SMEs) in overcoming resource barriers when transitioning to the CE model. Collaborating with the Vietnam Chamber of Commerce and Industry (VCCI) to share experiences from large corporations will create momentum and help businesses optimize processes, save raw materials, and improve supply chains. Simultaneously, the city needs to support businesses in accessing eco-labels, green financing, and enhancing the responsibility of manufacturers to expand their operations. Placing businesses at the center, combined with the consensus of the people in managing the product lifecycle, will be the core foundation for the effective operation of the CE model.

Fourth, Integrating content on the circular economy into the education system and developing circular communities.

Education is the most sustainable channel for shaping circular thinking and behavior; therefore, it is necessary to develop a set of CE materials and integrate them into subjects, combined with extracurricular activities, to help students form these habits early on. At the university level, developing courses on circular economy, sustainable production, and ecological innovation will equip students with in-depth knowledge and skills. This is a strategy to invest in human resources, creating a generation of circular-minded citizens and a high-quality team of experts to serve the long-term development of the CE.

Fifthly, Promote the role of citizens and replicate the model of green communities and waste-free residential areas.

Citizens play a crucial role in the CE through changing consumer behavior, sorting waste at source, and monitoring businesses' environmental compliance, thereby directly influencing the effectiveness of policy implementation. The city needs to provide technical and financial support for community-based models and collaborate with social organizations to disseminate education, communication, and behavior-changing activities. Simultaneously, emulation movements such as “Circular Neighborhoods” or “Green Wards of HCMC” will promote community self-governance, forming a network of green urban areas as a foundation for the CE to become a sustainable lifestyle for citizens.

Sixth, applying digital platforms for communication and connectivity within the circular economy ecosystem.

Through the development of a CE portal and mobile application with centralized data, classification guidelines, collection point location, and green consumption utilities, the city can implement additional interactive digital

programs and “gamification” such as community challenges, points accumulation, and eco-rewards to motivate the maintenance of circular habits. Digitalization also supports management agencies in collecting data, assessing participation levels, and refining policies, thereby transforming the CE into a widespread cultural trend throughout society.

4.2.2. Solutions for improving governance and institutional implementation mechanisms to promote the development of a circular economy.

The set of solutions focusing on improving the legal framework, policy mechanisms, standards, and technical tools related to the CE in the city plays a fundamental role in the transformation of the economic model.

Firstly, to complete the legal framework and strategic direction for the development of the circular economy in the city.

HCMC urgently needs to issue a comprehensive plan and a specialized resolution of the People's Council for the period 2026-2035 to create a unified legal framework. The plan will serve as a long-term strategic orientation, integrating circular principles into urban planning and leveraging Resolution 98 to pilot green finance mechanisms and a carbon market. Following this, the People's Council resolution will legalize this strategy by imposing mandatory quantitative targets, identifying priority sectors, and clearly delegating responsibilities to each department and locality. Simultaneously, the city needs to issue preferential policies on capital, technology, green bidding, and establish a system of regular monitoring. Completing this comprehensive institutional framework is a core leverage to help the city innovate its growth model, enhance inter-sectoral governance capacity, and move towards the Net Zero goal by 2050.

Secondly, Strengthening the management system and establishing inter-sectoral coordination mechanisms for the circular economy.

HCMC is shifting to a multi-centered governance model by establishing a Steering Committee for CE Development headed by the City People's Committee, along with a specialized office to coordinate unified data. Within this structure, key agencies include: the Department of Agriculture and Environment, responsible for resource management and waste sorting at source; the Department of Industry and Trade, promoting green industries, energy saving, and the development of eco-industrial parks; the Department of Science and Technology, creating an innovation ecosystem and transferring clean technology; and the Department of Education and Training, integrating circular knowledge into schools. At the grassroots level, the People's Committees of communes/wards directly encourage residents to adopt green consumption practices, while the Management Boards of export processing zones and industrial parks promote symbiotic linkages between businesses. This synchronized horizontal coordination among agencies, research institutes, and the private sector will eliminate

fragmented management and ensure the efficient operation of the city-wide circular ecosystem.

Third, Complete the system of standards, regulations, and technical tools for the circular economy.

To address the lack of monitoring tools, HCMC needs to issue a legally binding CE standard, shifting the focus from end-of-life waste treatment to initial design and the creation of a secondary raw material market. The city should implement a mandatory roadmap by industry: prioritizing the construction and plastics manufacturing sectors in the 2026-2028 period; expanding to textiles and electronics in the 2028-2030 period. Technically, the system should focus on regulating minimum recycling rates; mandating easily repairable eco-designs; establishing tiered wastewater reuse standards; issuing city eco-labels; and issuing industrial symbiosis standards and model contracts in export processing zones and industrial parks. These quantitative indicators will provide a transparent foundation for the city to assess public investment, apply tax incentives, and activate green credit.

Fourth, build a data platform and promote digital transformation in circular economy governance.

In the context of digital transformation, HCMC needs to build an integrated and interconnected CE database to serve management, monitoring, and policy planning. This system focuses on tracking core information about material flows, waste, carbon emissions, and resource efficiency in each locality. Simultaneously, the city needs to develop digital platforms to connect manufacturing businesses, recycling facilities, and the community, optimizing material flows, reducing transaction costs, and promoting the secondary raw material market. Furthermore, promoting the application of artificial intelligence, big data, and IoT technology in waste and energy management will be key to improving the effectiveness of smart and sustainable urban governance.

Fifth, promote mechanisms for testing and innovating policies on the circular economy.

HCMC needs to leverage Resolution 98/2023/QH15 to promote controlled policy testing mechanisms for models such as eco-industrial parks, green credit, carbon markets, and circular cities. The testing process must strictly adhere to a cycle from piloting, evaluation, adjustment to scaling up and institutionalization to minimize risks and increase the adaptability of institutions to technological changes. Furthermore, proactively attracting the participation of businesses, research institutes, and international organizations will help the city maximize the use of advanced knowledge, gradually forming a flexible and modern CE governance model for a special urban area.

4.2.3. Solutions to strengthen financial, technological, and infrastructure resources for the development of a circular economy.

Firstly, we need to improve the green financial ecosystem and investment support mechanisms for the circular economy.

To promote the CE, HCMC needs to shift the role of the State from administrative support to market creation by synchronizing four core financial tools. (1) Establish the HCMC Circular Economy Investment Fund with charter capital from 1,000 to 2,000 billion VND, applying a flexible operating model to provide preferential loans, credit guarantees and co-invest in green projects. (2) Expand green public procurement into a mandatory legal regulation with a minimum rate of 30-50% of the city's total procurement value to create a stable "market demand" for recycled products. (3) Utilize Resolution 98/2023/QH15 to pilot a circular tax mechanism, through reducing corporate income tax from 3-5% or exempting land tax for units that meet green transformation standards and participate in industrial symbiosis. (4) Establish a city-level carbon exchange platform that is interconnected with international markets, supporting small and medium-sized enterprises to conduct free carbon inventories to generate revenue to offset transition costs. This financial leverage system is the key solution to remove capital bottlenecks, stimulate the private sector to proactively invest in clean technology and complete a sustainable circular economy ecosystem for the city.

Secondly, improve the infrastructure to support the development of the circular economy.

HCMC needs to synchronize three core infrastructure pillars to promote a comprehensive CE. Firstly, it should plan high-tech regional recycling clusters in Cu Chi, Binh Chanh, and Nha Be districts as a mandatory urban component, aiming to increase the city-wide recycling rate to 35-45% by 2030. Secondly, it should establish a network of repair and reuse centers at the commune/ward level to extend product lifecycles through repair services, exchange of used goods, and electronic waste collection. Thirdly, it should issue a roadmap to transform at least 5 out of 23 existing industrial parks into eco-industrial parks by 2030, with the Management Board acting as the coordinating body for symbiotic linkages, energy and wastewater sharing, and the digitalization of material flows. This synchronized infrastructure system will optimize resources, significantly reduce emissions, and create a foundation for the city's green economy.

Third, promote technological innovation and develop human resources for the circular economy.

To transition to a CE model, HCMC needs to focus on two strategic levers: technological innovation and the development of high-quality human resources.

Regarding technology, the city needs to support small and medium-sized enterprises (SMEs) in accessing cleaner production technologies, energy-saving technologies, high-quality recycling, and wastewater treatment, especially in key sectors such as plastics, packaging, textiles, and food. Simultaneously, it needs to leverage its university system, research institutes, and high-tech zones to build a network of green innovation, promote technology transfer, and foster international cooperation with advanced countries. Regarding human resources, the city needs to integrate specialized knowledge such as eco-design, lifecycle analysis (LCA), ESG management, and digital skills (AI, IoT, big data) into both formal and short-term training programs for civil servants, businesses, and workers. Furthermore, implementing incentive policies to attract leading experts from both within and outside the country will create a strong knowledge community, providing a long-term foundation for the goal of developing smart and sustainable cities.

CONCLUDE

The CE is becoming a dominant trend in simultaneously addressing the demands of growth, efficient resource utilization, and environmental protection. In Vietnam, the circular economy has been established in national resolutions and strategies; HCMC, the country's largest economic center, plays a pioneering role in institutionalizing and implementing this model. Using an institutional approach, this thesis clarifies the crucial role of institutions in creating a favorable environment and regulating the behavior of stakeholders participating in the CE.

Research results confirm: (1) The thesis has built a conceptual framework and criteria system for analyzing the institutional framework promoting the circular economy, which is both theoretical and applicable at the city level. (2) The current situation shows that HCMC has formed an initial institutional foundation, but still has limitations in terms of consistency, coordination ability, and implementation effectiveness; many policies have not been concretized and are not closely linked to sectoral planning, while resources are still scattered and lack a monitoring mechanism. (3) Based on identifying gaps and challenges, the thesis proposes a system of solutions to improve the institutional framework of the CE, including: raising awareness; improving the legal framework and technical tools; strengthening the apparatus and coordination mechanism; developing infrastructure and technology; and promoting sustainable finance and market mechanisms. The solutions emphasize a systems approach, multi-stakeholder linkages, and the process of effectively and sustainably transitioning from a linear to a CE.

LIST OF THE AUTHOR'S PUBLICATIONS RELATED TO THE DISSERTATION

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