



Scientific basis, tasks, solutions and roadmap for implementing the National Action Plan to implement circular economy by 2035

NGUYỄN ĐÌNH THỌ, MAI THANH DUNG, LẠI VĂN MẠNH
 NGUYỄN THỊ THANH HUYỀN, PHẠM ÁNH HUYỀN
Institute of Strategy and Policy on Agriculture and Environment

The circular economy is one of the effective solutions to help address the relationship between the economy and the environment, with the potential to create new growth drivers, value chains, and jobs, while reducing greenhouse gas emissions and achieving the Sustainable Development Goals (SDGs). Many countries and regions are adopting roadmaps, strategies, or visions for CE as a growing trend. The ASEAN Economic Community's circular economy framework was adopted with a vision to position ASEAN as a hub of innovation and investment in circular economy development, characterized by high competitiveness, economic prosperity, environmental sustainability, and social equity. At the same time, a global roadmap for circular economy is also under discussion. In practice, initiatives and actions are being taken in production, business, and consumption to shift investment flows, financial systems, production and business models, and value chains toward circular economy. Many global agreements and next-generation free trade agreements under negotiation directly or indirectly refer to circular economy, gradually becoming new 'rules of the game'. In Vietnam, the policy direction for circular economy development has been unified at the central level and concretized in some localities. Environmental protection legislation has included provisions on circular economy, including criteria, roadmaps, and incentive mechanisms for implementation. Several other key policy instruments also play a vital role in circular economy development. In practice, there have been positive signs of circular economy adoption among businesses, communities, and individuals through the development of models and initiatives in agriculture, industry, commerce, tourism, and waste management, ect. However, circular economy development in Vietnam still faces limitations in terms of awareness, institutional framework, legal basis, and mechanisms. It has not yet successfully established new sustainable value chains through circular economy practices, especially in the context of increasing pollution, environmental degradation, and scarcity of raw materials and resources.

The National Action Plan for the Implementation of the Circular Economy by 2035 specifies the roadmap for the implementation of the Circular Economy in accordance with the provisions of the Law on Environmental Protection 2020, Decree No. 08/2022/ND-CP dated January 10, 2022 of the Government detailing a number of articles of the Law on Environmental Protection and the Party and State's policies and guidelines on the development of the Circular Economy with viewpoints, goals, tasks, solutions, sectors and priority areas for the implementation of the Circular Economy nationwide. The Plan is the basis for ministries, sectors and localities to develop

and organize the implementation of the Circular Economy in accordance with their assigned functions, tasks, scope and management areas.

On January 23, 2025, the Prime Minister approved Decision No. 222/QĐ-TTg on the National Action Plan for the Implementation of the Circular economy by 2035. The article summarizes the approach, principles, methods, contents, tasks, solutions, priority sectors and areas as well as roadmap for assessing the impact of the National Action Plan for the Implementation of the Circular economy by 2035.

1. APPROACH, PRINCIPLES AND METHODS FOR DEVELOPING THE PLAN

1.1. Approach

The National Action Plan for the Implementation of the Circular economy by 2035 is built on the harmonious application of the following approaches:

(i) The system approach is applied to perceive the movement of production sectors in the overall relationship of the entire economy, to see the correlation between the production sector, specific production sectors and the rest of socio-economic activities. On that basis, we could find out the positive and negative points in implementing the goal of developing circular economic models at different levels, each specific sector and sub-sector in the economy.

(ii) Market-based approach to clearly identify the role of the State and the subjects in the market economy, apply the objective principles, rules and laws of the market economy to determine appropriate priority actions to promote changes in thinking, behavior and technology, and consumption methods based on economic benefits, social and environmental responsibilities of businesses and consumers.

(iii) The interdisciplinary approach is applied to examine the cyclical cycles in the economy and in production sectors in a systematic, inter-sectoral, and inter-regional manner, thereby seeing the connections in production sectors, the position and role of the circular economy in the value chain; as well as the position and role of subjects in the production sector to find ways



to have policy interventions appropriately and effectively.

(iv) The bottom-up approach is carried out during the survey to collect information and data from stakeholders on the current status of commodity production in various sectors, the level of waste collection, treatment and recycling, as well as the capabilities and desires of these businesses. The bottom-up approach contributes to supporting research and consideration of management issues arising from the practical needs of localities, businesses, and relevant entities, and ensures that policy proposals are closely linked to local needs and practical situations.

(v) Top-down approach to clarify the needs of State management agencies at all levels in applying circular economy models in several manufacturing industries including plastics, paper, and construction materials, and at the same time grasp the necessary directions of the State for participation of these aforementioned industries.

1.2. Methodology for developing the Plan

The methods and processes for developing the National Action Plan to implement the Circular economy by 2035 are implemented, including:

(1) Overview method, inheriting published documents of ministries, branches and localities, international organizations in the country and abroad to inherit and use as a basis for analysis, evaluation and making proposal of tasks and solutions of the Plan;

(2) Market analysis method considers the needs, potentials and challenges in expanding and developing the market for goods and services related to the circular economy;

(3) The SWOT strategic analysis method is used to synthesize, analyze, and evaluate the domestic and international context; the current status of the institutional and policy systems; the capacity of manufacturing industries in the context of environmental challenges as well as sustainable development that are increasingly being focused on... to select and fully identify the strengths, weaknesses, opportunities and challenges in encouraging and promoting the application of circular economy models in a number of manufacturing industries;

(5) Statistical analysis (descriptive, comparative), correlation analysis method to review and evaluate trends and opportunities for applying circular economic models; identify the impact levels of factors affecting the implementation of circular production;

(6) Quantitative modeling analysis method is

used to model the flows of raw materials and materials in the economy to find key points that need to be impacted to achieve the criteria of the Circular economy;

(7) Policy analysis method is used to research and evaluate the system of policies and laws of Vietnam related to circular economy and application of circular economy models to a number of production sectors;

(8) Expert methods are used through consultation and exchange with experts in relevant fields, carried out through various forms such as direct consultation, discussion at scientific seminars consulting experts and managers.

(9) Method of assessing the level of readiness and necessity for the circular economy. Based on a full analysis of the level of readiness in terms of institutions, policies, laws, practices; the level of urgency in environmental protection, responding to new regulations of the world on circular economy to select priority fields and sectors, as well as roadmap and phase on implementation of circular economy in the Plan.

During the implementation process, expert methods were used, specifically: (1) consulting with experts and managers through scientific seminars and workshops; (2) consulting with ministries, branches, People's Committees of provinces and centrally-run cities, relevant agencies and organizations; (3) organizing 03 forums and many seminars on the basis of sending the draft Decision dossier to experts, scientists, and management agencies for research and consultation; (4) posting the draft Decision dossier on the electronic information portal of the Ministry of Natural Resources and Environment to widely collect opinions.

2. THE PLAN'S VIEWPOINTS AND GOALS

2.1. Viewpoint

(1) Prioritize the implementation of circular economy to create new growth momentum, enhance resilience and recovery for the economy, create breakthroughs in development, promote growth model innovation, improve quality, efficiency and competitiveness, create new value-added chains, harmonize the relationship between the economy and the environment, contribute to the implementation of international commitments on nature conservation, biodiversity, net zero emissions by 2050 and sustainable development.

(2) Promote the proactive and creative role of enterprises, cooperatives, production, business and service establishments in applying the circular economy; the rights and interests of consumers and people are the driving force for the development of the circular economy; the State plays a central role in creating an institutional environment, policies, management and regulatory organizations in order to encourage the participation of economic sectors, communities, agencies, organizations and individuals on the basis of the laws of the market economy with State regulation, in accordance with common international practices, principles and standards.

(3) Implementing a circular economy (CE) is a regular, continuous task with a long-term roadmap, closely linked to innovation, achievements of the Fourth Industrial Revolution, and breakthroughs in science and technology. It is an essential component of green transition, a green and



low-carbon economy; involves the development of integrated infrastructure across regions; and the advancement of high-quality human resources and the creation of new jobs. The goal is to maximize the value of raw materials, resources, and waste throughout the entire stages of design, production, distribution, consumption, and waste management.

(4) Maximize the advantages, potential, and characteristics of various sectors, regions, and localities, ensuring an interdisciplinary, interregional, and holistic approach to developing appropriate circular economy models. Promote best practices and foster a culture of sustainable production and consumption. Strengthen independence and self-reliance in mobilizing and effectively utilizing domestic and international resources for circular economy implementation. Digital transformation serves as a key driver for developing advanced, modern, and sustainable circular economy models.

(5) Ensuring the harmony of interests of relevant entities, taking people as the center, focusing on improving social welfare and quality of life of the people; consistent with the viewpoints, guidelines, policies, and laws of the Party and State on socio-economic development of the country and international trends in implementing circular economy.

2.2. Objectives

Firstly, the general objective

Forming a sustainable production and consumption structure system, effectively using natural resources, optimizing the use of reclaimed raw materials and resources, minimizing waste, and reducing negative environmental impacts; strongly developing the circular economy models in production and business; creating motivation for innovation and improving labor productivity; developing good practices, creating a green culture and lifestyle, promoting green job creation and developing new value chains in the circular economy sector.

Secondly, specific goals and targets are divided by 2030 and 2035.

The proposed objectives and targets of the Plan reflect the true nature of the macro-level circular economy model, in accordance with the circular economy criterias specified in Article 138 of Decree No. 08/2022/ND-CP, in accordance with the assigned tasks of the Circular Economy Development Scheme in Vietnam in Decision No. 687/QĐ-TTg dated June 7, 2022 of the Prime Minister. These goals and targets are also consistent with the circular economy indicators applied by many countries around the world and ensure continuity and coherence with the Party's and the State's orientations for socio-economic development across sectors and fields through 2030. The detailed goals and targets through 2030 are presented in Table 1.

The proposed goals and targets by 2035 include: (1) Realizing an inclusive circular economy linked to innovation, creativity, high competitiveness, economic prosperity, environmental sustainability, and social equity; making Vietnam become one of the innovation hubs providing technology, equipment, products, services, and mobilizing investment for the circular economy within the ASEAN Economic Community (AEC); (2) Contributing to the successful achievement of

targets related to the efficient use of resources, environmental protection, climate change adaptation, and sustainable development by 2035 and in subsequent phases, as outlined in the Party's documents, strategies, policies and laws of the State.

3. TASKS, SOLUTIONS, PRIORITY SECTORS AND AREAS, AND ROADMAP OF THE PLAN

3.1. Priority tasks and solutions

- Raise awareness, knowledge, and skills through the development of materials, implementation of communication programs, and education and training to enhance awareness and capacity on the circular economy for all levels, sectors, areas, and relevant stakeholders. This includes prioritizing communication, training, and dissemination of knowledge and laws related to circular economy implementation; integrating circular economy education content into school curricula at all levels; and developing and operating a platform for connecting information and sharing data on circular economy model application.

- Complete the institutions, laws, regulations and standards to create a foundation for the circular economy. In the immediate future, focus on removing barriers to put current regulations into practice such as: Extended Producer Responsibility (EPRs) to operate the extended responsibility mechanism of manufacturers and importers in the collection and recycling of waste; environmental industry and environmental services to develop recycling technologies and equipment; green credit, green bonds; standards and regulations on post-treatment waste, secondary raw materials, products using recycled materials; incentives and support for products and projects investing in recycling and reuse... Continue to integrate the circular economy into the process of amending and supplementing other relevant laws, especially regulations on taxes, fees and consumption. Encourage experimentation with new mechanisms and policies that play a breakthrough role for the circular economy. The specific tasks and solutions of the Plan include: organizing the development and promulgation of action plans, integrating circular economy into strategies, planning, development programs, waste management plans of ministries, agencies, and localities; improving legal regulations, standards, and technical norms to encourage circular economy implementation;

- Support the promotion of circular economy application in production, business



Table 1. Goals and targets by 2030 of the National Action Plan for implementing the circular economy

No.	Goal and targets
I	Reduce exploitation and use of non-renewable resources and water resources; increase efficiency in the use of resources, raw materials and materials; and save energy:
1	Strive to achieve targets on efficient use of resources (land, water, minerals) equivalent to the leading ASEAN countries.
2	The capacity of power plants from biomass and solid waste sources by 2030 will reach 2,270 MW, equivalent to 1.5% of the total capacity of power plants.
3	The proportion of renewable energy in total primary energy strives to reach 47%
4	Achieve savings of 8 - 10% of total national energy consumption
II	Extend the life of materials, equipments, products, goods, components and structures; limit waste generation and minimize negative impacts on the environment
5	The rate of collected and treated domestic solid waste in urban areas reaches 95%.
6	The rate of collected and treated rural solid waste reaches 80%.
7	The proportion of domestic solid waste treated by direct landfill method compared to the amount of collected waste decreased below 50%.
8	The rate of wastewater treatment from production, business, service establishments, concentrated production, business, service areas, and industrial clusters into the river basin environment reaches over 70%.
9	Greenhouse gas emission intensity per gross domestic product reduced by at least 15% compared to 2014
III	Focus on and enhance economic aspects, increase benefits, promote innovation and mobilize resources in implementing the circular economy.
10	Models for efficient use of natural resources, reuse and recycling of waste, and production and business models applying circular economy are built, replicated, and developed appropriately for each industry, field, region, and at each level.
11	Forming and developing new, sustainable value chains associated with high added value, creating many new jobs through the application of circular economy
12	The number of technologies, equipment, and products transferred for application and granted patents for recycling and reuse has increased over the years.
13	Strongly attract resources from green credit, green bonds and other legal resources for investment projects in developing circular economy.

(Source: Decision No. 222/QĐ-TTg)

and consumption activities, including: support for the implementation of ecological design to meet circular economy criteria; support for the application and development of circular economy models in production and business; promote innovation, application of digital technology, environmentally friendly technology, and best available techniques to implement circular economy; support the formation and development of markets for goods and services related to circular economy; promote the implementation of circular economy in consumption activities, ensuring consumer rights;

- Synchronously deploy waste management requirements; pilot, replicate and develop waste management models by region, area and locality; promote the role and value of the informal labor force, small and medium enterprises in creating value chains associated with circular economy; pilot and develop regional and inter-regional recycling industrial park models.

- Develop linkage and cooperation mechanisms between ministries, sectors, fields, regions, localities and organizations and individuals to connect and create value chains associated with typical material flows of circular economy. Encourage the establishment of linkage and cooperation models for waste collection and recycling. Develop toolkits and indicators to measure, evaluate and monitor the implementation of circular economy associated with material flows.

3.2. Priority sectors and fields

Priority sectors and fields to implement circular economy by 2035 include: (1) Agriculture, Forestry and Fisheries; (2) Energy; (3) Mineral exploitation and mineral processing; (4) Processing and manufacturing industry; (5) Chemicals; (6) Construction; (7) Transport; (8)



Services and tourism; (9) Waste management; (10) Development of urban areas, concentrated residential areas; industrial parks, industrial clusters, concentrated production, business and service areas. In particular, the plan identifies a list of specific sectors and fields that need guidance on applying circular economy by ministries, ministerial-level agencies, provincial People's Committees, relevant agencies and organizations according to the assigned tasks in this National Action Plan; Types of investment projects, facilities, production and business corresponding to products, materials, waste and services encouraged to apply one or more measures to implement circular economy by 2035 are detailed in Appendix II of the Plan (Table 2).

3.3. Tasks and roadmap for implementing circular economy for priority and specific sectors and fields; investment projects, production and business establishments; products, materials, waste and services

The action plan defines the tasks and roadmap for implementing circular economy by 2035 for the above priority sectors and fields allocated to 2035. In particular, priority is given to implementation before 2030 for the waste management sector; other sectors and fields that meet one or more of the following criteria: generating a lot of waste, having a large impact on the environment, emitting large greenhouse gases; exploiting and using a lot of resources, raw materials, fuels and energy; having the potential to create high added value and new jobs; being bound to implement circular economy in trade, investment activities and international relations.

Encourage priority and specific sectors and fields; types of investment projects, production and business establishments; products, materials, waste and services listed in Appendix II of the Plan to apply measures and requirements to implement circular economy earlier than the roadmap of this National Action Plan; encourage sectors and fields; types of investment projects, production and business establishments; products, materials, waste and services not listed in the Action Plan to proactively select and apply measures and requirements to implement circular economy in accordance with the provisions of the Law on Environmental Protection and other relevant laws.

Mobilize and diversify resources to implement circular economy, including: (1) state budget sources: central budget, local budget; (2) international support: official development assistance (ODA), support capital

and preferential loans; (3) commercial loans and private investment sources: green credit, green corporate bonds; foreign direct investment (FDI); other commercial loans and private investments; (4) other community and social capital sources: public-private mobilized capital for investment projects, domestic funds.

4. COMPATIBILITY OF THE PLAN WITH INTERNATIONAL TREATIES AND ITS SOCIO-ECONOMIC AND GENDER EQUALITY IMPACT

4.1. Conformity with international commitments, treaties and trends

The contents of the National Action Plan for the implementation of the circular economy by 2035 are consistent with the commitments and international treaties that Vietnam has signed and is a member of. In particular, the implementation of this Plan will directly or indirectly contribute to the successful implementation of commitments such as: the United Nations Framework Convention on Climate Change (UNFCCC); the United Nations 2030 Agenda for Sustainable Development; the Convention on the Protection of the Ozone Layer (VIENA); the Stockholm Convention on Persistent Organic Pollutants; the Basel Convention on the Control of Transboundary Movements and the Disposal of Hazardous Wastes. In particular, the National Action Plan for the implementation of the circular economy by 2035 will realize the 2030 Agenda and the National Action Plan for the implementation of the 2030 Agenda with 17 sustainable development goals.

In the context of many new generation Free Trade Agreements being signed, more and more contents related to the environment, green economic development, circular economy, greenhouse gas emission reduction; at the same time, binding the parties' obligations on environmental protection at a higher level. Some important Agreements that Vietnam has signed or is in the process of negotiating are: Vietnam - EU Free Trade Agreement (EVFTA); Trans-Pacific Partnership Agreement (TPP); The Regional Comprehensive Economic Partnership (RCEP) Agreement between ASEAN and 6 partners that have FTAs with ASEAN, namely China, Korea, Japan, India, Australia, New Zealand, etc. Along with that, many countries and regions in the world have introduced specific circular economy measures in import and export activities such as the regulations of the European Union in the textile, electronics, chemical industries, etc. Therefore, the implementation of solutions and tasks in the National Action Plan for Circular Economy will contribute to supporting domestic enterprises to participate in new value-added chains that take into account climate, environmental and sustainable development factors; contributing to supporting the promotion of competitiveness for Vietnamese products and services in the world market.

A comparison with the plans, strategies, visions, or roadmaps that have been issued or are being developed by other countries and regions around the world such as the European Union, the Netherlands, Finland, Japan, Australia, Chile, etc... shows that the contents, sectors, and priority areas

in Vietnam’s draft National Action Plan for the implementation of the Circular Economy by 2035 are well aligned. In particular, when compared with the ASEAN Circular Economy Framework adopted in 2021, it is evident that the Vietnamese National Action Plan has

been developed in line with ASEAN’s overall development orientation. At the same time, it will contribute positively to achieving the strategic goals of the ASEAN Economic Community in establishing a resilient economy, enhancing resource efficiency, and promoting inclusive and sustainable growth.

Table 2. List of priority and specific sectors and fields; investment projects, production and business establishments by 2035

No.	Priority and specific sectors and fields; investment projects, production and business establishments	Products, materials, waste and services
I	Agriculture, forestry and fisheries	
1	Crop	<ul style="list-style-type: none"> - Potential materials, products, by-products, wastes and services from farming activities - Cultivation to reduce greenhouse gas emissions
2	Animal husbandry	<ul style="list-style-type: none"> - Potential materials, products, by-products, wastes and services from livestock activities - Livestock farming to reduce greenhouse gas emissions
3	Forestry	<ul style="list-style-type: none"> - Increase carbon absorption and storage capacity and reduce greenhouse gas emissions in forestry - Materials, products, by-products, waste and services with potential from afforestation and logging activities
4	Seafood	<ul style="list-style-type: none"> - Potential materials, products, by-products, wastes and services from aquaculture activities - Reducing greenhouse gas emissions in aquaculture
II	Energy	
1	Thermal power	<ul style="list-style-type: none"> - Materials, fly ash, bottom slag of thermal power plants - Water used in the process of thermal power production
2	Energy recovery through waste incineration	<ul style="list-style-type: none"> - Organic waste - Electricity is produced from domestic solid waste and common industrial solid waste.
3	Renewable Energy	<ul style="list-style-type: none"> - Developing renewable electricity from hydroelectric, solar, wind, geothermal, tidal, green hydrogen sources; nuclear power - Equipment used to produce electricity from renewable energy sources
4	Nuclear energy	<ul style="list-style-type: none"> - Nuclear power
5	Power transmission, distribution and electrical equipment	<ul style="list-style-type: none"> - Equipment for receiving, transmitting and transmitting electricity - Electronic products and household electrical appliances
III	Mineral exploitation and mineral processing	
1	Exploration, mining, minerals	<ul style="list-style-type: none"> - Solid waste from tailings, waste rock and soil; waste materials from mineral exploitation activities, excess rock and soil from construction investment projects - Water used in the ore selection process; waste water at mineral mining sites; water collected from mineral mining activities
2	Mineral processing	<ul style="list-style-type: none"> - Waste-water from ore processing activities - Excess materials and other wastes in the mineral processing process



No.	Priority and specific sectors and fields; investment projects, production and business establishments	Products, materials, waste and services
IV	Processing and manufacturing industry	
1	Food processing	<ul style="list-style-type: none"> - Food packaging - Solid waste and wastewater in food processing activities
2	Wood processing	<ul style="list-style-type: none"> - Potential materials, products, by products, waste and services from wood processing activities - Repair, refurbishment, reuse and other life-extending services for wooden products
3	Beverage	<ul style="list-style-type: none"> - Plastic, metal, glass packaging used for beverages including beer, wine, soft drinks - Solid waste, wastewater from production activities
4	Paper and pulp	<ul style="list-style-type: none"> - Paper used for various purposes, cardboard - Solid waste, wastewater, emissions from production activities
5	Plastic	<ul style="list-style-type: none"> - Packaging and products made from plastic materials such as PE, PP, PET, ABS, PVC, PP, PU... - Solid waste, waste water, exhaust gas
6	Metallurgy	<ul style="list-style-type: none"> - Precious metals, waste-water, residual heat, exhaust gas from metallurgy - Scrap iron, steel and other metals
7	Ceramics and glass	<ul style="list-style-type: none"> - Glass bottles and jars; all kinds of construction glass - Waste from glass processing activities
8	Dyeing, textile	<ul style="list-style-type: none"> - Wastewater from textile and dyeing - Fabric, fashion
9	Electrical and electronic equipment	<ul style="list-style-type: none"> - Electrical and electronic equipment for civil and industrial use - Materials recovered from electrical and electronic equipment - Repair, refurbishment and other services that support the life cycle of electrical and electronic equipment for domestic and industrial use
V	Chemical	
1	Plant protection	<ul style="list-style-type: none"> - Pesticide packaging - Natural chemicals, environmentally friendly
2	Fertilizer	<ul style="list-style-type: none"> - Raw materials, materials, water in the fertilizer production process - Organic fertilizer from by-products and waste
3	Rubber	<ul style="list-style-type: none"> - Rubber tires for vehicles and machinery
4	Batteries, accumulators and electricity storage	<ul style="list-style-type: none"> - Batteries, accumulators, solar panels - Electrical storage devices used in industry and civil use
VI	Build	
1	Construction materials	<ul style="list-style-type: none"> - Ordinary industrial waste that meets technical and environmental requirements for use in the production of construction materials and as landfill materials. - Construction materials using waste from production and construction activities



No.	Priority and specific sectors and fields; investment projects, production and business establishments	Products, materials, waste and services
2	Construction works	<ul style="list-style-type: none"> - Construction works - Support services to extend the life cycle of construction works
VII	Transportation	
1	Mean of transportation	<ul style="list-style-type: none"> - Means of transport and motor vehicles - Support services to extend the life cycle of means of transport and machinery
2	Transport infrastructure	<ul style="list-style-type: none"> - Traffic works - Materials for traffic works - Support services to extend the life of traffic works
3	Transportation services	<ul style="list-style-type: none"> - Freight transport - Passenger transport
VIII	Services and tourism	
1	Service	<ul style="list-style-type: none"> - Distribution, wholesale and retail services - Restaurant and hotel services - Consulting, assessment, support services for implementing circular economy, refurbishment, repair services and other potential services
2	Tourism	Management and exploitation of relic sites, relic sites, tourist areas, tourist attractions, and tourist accommodation facilities
IX	Waste Management	
1	Solid waste	<ul style="list-style-type: none"> - Urban and rural solid waste - General industrial solid waste, sludge, boiler ash - Construction solid waste
2	Waste water	<ul style="list-style-type: none"> - Domestic wastewater from urban and residential areas - Waste water from industrial parks, industrial clusters, concentrated production and business areas; production and business establishments
3	Emissions	<ul style="list-style-type: none"> - Methane, CO₂ from activities: farming, livestock; waste management and waste water treatment; oil and gas exploitation and processing, coal mining and fossil fuel consumption
X	Development of urban areas, concentrated residential areas; industrial parks, industrial clusters, concentrated production, business and service areas	
1	Urban area, concentrated residential area	<ul style="list-style-type: none"> - Urban area - Concentrated residential area
2	Industrial parks, industrial clusters, concentrated production, business and service areas	<ul style="list-style-type: none"> - Industrial park - Industrial clusters, concentrated production, business and service areas

(Source: Decision No. 222/QĐ-TTg)



4.2. Socio-economic impact and gender equality

The circular economy has three basic principles, including: (i) Conserving and developing natural capital through control, aiming to rationally use resources and regenerate natural systems; (ii) Optimizing the benefits of resources by circulating products and materials as much as possible; (iii) Improving the overall efficiency of the entire system by minimizing negative externalities, through waste design, pollution-free design right from the beginning of the production process. The benefits of implementing circular economy have been proven by many international organizations and scientists around the world. Accordingly, implementing circular economy according to the contents of the National Action Plan for implementing circular economy to 2035 will actively contribute to the implementation of viewpoints, goals and tasks on socio-economic development, specifically as follows:

Regarding economic development: According to the United Nations Development Program (2023), the circular economy will shift from the “extraction - production - consumption - disposal” model to a more sustainable circular system. This model emphasizes the design of durable products, maintenance, repair, reuse, recycling, and renovation, to minimize the amount of natural resources used unsustainably. This is not only beneficial for the environment but also helps sustainable economic growth, especially in the context of global material consumption expected to double by 2060. The Plan is comprehensively designed to promote the application of the circular economy throughout the economy from design, production, distribution, consumption, disposal, recycling, and reuse with the full participation of economic sectors. Therefore, implementing the tasks in the Plan will contribute to creating new, sustainable value-added chains for the economy.

Regarding cultural, social and human development: Implementing the circular economy is likely to create millions of new jobs by 2030, with employment growth of about 0,1%. These jobs are not only limited to developed countries but also extend to developing economies, through sectors such as recycling, repair and renovation. Therefore, the synchronous and effective implementation of tasks and solutions such as the National Action Plan will make an important contribution to creating new jobs in the fields of ecological design, consulting, and assessment of circular economy implementation; repair and refurbishment for reuse towards extending product life cycles; and the field of recycling and waste treatment. In particular, with the focus on the main economic subjects of the Action Plan, which are producers and consumers, the successful implementation will make an important contribution to the formation and development of good cultural features and sustainable culture in production and consumption; contributing to the formation of a material circulation society.

On saving, resource efficiency, environmental protection and climate change response: Applying processes to maintain product value such as recycling, repair and renovation can help reduce 79% to 99% of greenhouse gas emissions in some industries. According to the United Nations Environment Program, the implementation of circular economy contributes significantly to achieving global goals on climate change and reducing the impact of climate change. The national action plan for implementing circular economy will

promote the process of shifting the growth model towards sustainability, contributing significantly to the implementation of the orientation of strengthening climate change response, resource management and environmental protection. The measures, solutions and tasks stated in the draft national action plan for implementing circular economy are in line with the relevant orientations of the Party and State on socio-economic development; agricultural, rural and farmer development; industrialization, modernization; urbanization; sustainable development of regions and localities... In particular, through the implementation of circular economy, proactively responding to climate change, strengthening resource management, and environmental protection will become the center of development tasks as stated in Conclusion No. 56-KL/TW dated August 23, 2019 of the Politburo. In the long term, the implementation of solutions and tasks for implementing circular economy of the Plan will contribute to creating an economic growth trend (GDP and income), a trend of reducing resource exploitation, improving the efficiency of resource exploitation/GDP; reducing the level of waste generation/GDP; thereby harmoniously resolving the relationship between economic growth and development with efficient use, saving resources, environmental protection, and responding to climate change (especially reducing greenhouse gas emissions).

Regarding gender equality: With the view of promoting the role, strength, spirit of innovation and creativity in the entire political system, economic sectors, organizations and individuals involved to promote the implementation of circular economy. The National Action Plan for the Circular economy does not stipulate the difference between men and women in the implementation of circular economy. All actions are aimed at encouraging the participation of all genders, including women in mountainous and difficult areas, waste collection forces (mostly women). Therefore, it will contribute to the implementation of the Law on Gender Equality: “eliminating gender discrimination, creating equal opportunities for men and women in socio-economic development and human resource development, moving towards genuine gender equality between men and women and establishing and strengthening cooperative and supportive relationships between men and women in all areas of social and family life”. Nowadays, in reality, women are increasingly participating actively and effectively in the country’s socio-economic development and environmental protection ■