

# ASSESSMENT REPORT

INCENTIVES AND POLICY INSTRUMENTS FOR  
INITIATING THE TRANSITION TO CIRCULAR  
ECONOMY IN VIETNAM



### **Project Team Member**

Dr. Lai Van Manh (ISPONRE), Dr. Nguyen Cong Thanh (Vietnam National Economics University), and Pham Anh Huyen (ISPONRE)

### **Suggested Citation**

ISPONRE, Viet Nam and SWITCH Asia RPAC (2020), Assessment Report: Incentives and Policy Instruments for Initiating the Transition to Circular Economy in Vietnam.

### **Contact**

Dr. Mushtaq Ahmed Memon

Regional Coordinator for Resource Efficiency

United Nations Environment Programme, Regional Office for Asia and the Pacific

Project Manager, Regional Policy Advocacy Component

The EU SWITCH-Asia Programme

Email: [memon@un.org](mailto:memon@un.org)

Disclaimer: This publication was produced in 2020 by the EU SWITCH-Asia Regional Policy Advocacy Component (RPAC). Its contents do not necessarily reflect the views of the European Union.

# Acknowledgement

This Assessment Report provides findings on policies and incentives for the transitioning towards circular economy in Vietnam. Along with other research works of ISPONRE, this finding will be used as an input for the preparation of national development policy framework in the next 10-year period from 2021 to 2030 in Vietnam and 5-year Socio-economic Development Plan (SEDP) 2021-2025.

This work was a support from the Regional Policy Advocacy Component, which is implemented by UNEP Asia Pacific Office in collaboration with ISPONRE, under the EU-funded SWITCH-Asia Programme.

The outputs contributed to the mainstreaming of Circular Economy into the national development plan of Viet Nam. The Report was prepared by Dr. Lai Van Manh (ISPONRE), Dr. Nguyen Cong Thanh (Vietnam National Economics University), and Pham Anh Huyen (ISPONRE) along with the support of many organizations and individuals. Our sincere thanks to Dr Mushtaq Memon (UNEP), Tunnie Srisakulchairak (UNEP), Nguyen Thanh Phuong (UNEP), and Hoang Thanh (The Delegation of the European Union to Vietnam) for their technical and coordination support, and the EU SWITCH-Asia RPAC team member for their contribution to the finalization of this Report.

For more information on policies and regulations on circular economy in Vietnam, please contact [info@isponre.gov.vn](mailto:info@isponre.gov.vn).

# Table of Contents

<b>PREFACE.....</b>	<b>I</b>
<b>ABBREVIATIONS.....</b>	<b>II</b>
<b>INTRODUCTION.....</b>	<b>1</b>
<b>PART 1 – OVERVIEW OF CIRCULAR ECONOMY.....</b>	<b>3</b>
1. Concepts and strategies for implementation of circular economy.....	3
2. Framework for measuring progress towards a circular economy.....	4
<b>PART 2 - INTERNATIONAL EXPERIENCE IN IMPLEMENTATION OF CIRCULAR ECONOMY</b>	<b>8</b>
1. Current status of implementation of circular economy in some countries.....	8
2. Lesson learned for Vietnam in transition to circular economy.....	18
<b>PART 3 – POLICIES, ECONOMIC INSTRUMENTS AND INCENTIVES FOR THE TRANSITION TO CIRCULAR ECONOMY IN VIET NAM.....</b>	<b>19</b>
1. Current status of policies, economic instruments, and incentives related to circular economy principles.....	19
1.1 Environmental protection tax.....	23
1.2 Environmental protection fee.....	25
1.3 Environmental protection deposit.....	27
1.4 Payment for ecosystem services.....	29
1.5 Liability insurance for environmental damages.....	30
1.6 Eco-labeling.....	31
1.7 Green credit.....	32
1.8 Environmental protection fund.....	33
1.9 Environmental industry development.....	34
1.10 Environmental service and goods development.....	35
1.11 Incentives and support for environmental protection activities.....	37
1.12 Conclusion.....	38
2. Recommendation for appropriate policies and economic instruments to enhance the transition to circular economy.....	39
2.1 Environment protection tax.....	40
2.2 Environmental protection fee.....	41
2.3 Environmental protection deposit.....	42
2.4 Payment for ecosystem services.....	43
2.5 Liability insurance for environmental damages.....	44

2.6	Green credit.....	45
2.7	GreenBonds.....	45
2.8	Development of the environmental industry.....	46
2.9	Development of environmental goods and services.....	46
2.10	Development of natural capital.....	47
<b>REFERENCES.....</b>		<b>48</b>

# LIST OF FIGURES AND TABLES

## LIST OF FIGURES

Figure 1: Strategies for implementing circular economy.....	4
Figure 2: Proposed classification for the three measurement scopes from CE indicators.....	6
Figure 3: Framework for CE indicators.....	7

## LIST OF TABLES

Table 1: Indicators for circular economy in the EU.....	9
Table 2: Circular economy indicators at a macro level in China.....	15
Table 3: Policies, incentives, and economic instruments applied in environmental management in Vietnam.....	20

# Preface

Vietnam recognizes the importance of circular economy. This new economic approach addresses the nation's many challenges on climate change and resource depletion through a system that supports the reuse of raw materials and energy by slowing, narrowing and closing loops. Along with this process, material inputs and waste generation are minimized by prolonging product lifespan as long as possible, by focusing on designing for durability as well as maintenance and repair.

The government plays a key role in transitioning towards circular economy through its regulations and measures. Moving to a circular economy requires building direction and momentum for institutional and market changes. To do this, different economic instruments and policies should be used to encourage both producers and consumers to engage in circular economy-friendly business models.

At present, Vietnam does not have specific national circular economy strategy, but rather several policies and regulations that are relevant and applicable. This Assessment Report aims to analyze existing policies, economic instruments and incentives to set up policies and regulations that can facilitate circular economy goals in Vietnam. This Report also presents recommendations for appropriate policies and economic instruments to accelerate the transition to circular economy with findings that could likely help policymakers identify priorities necessary to move towards circular economy. Likewise, businesses can also benefit from the framework by expanding opportunities under the circular economy models.

This Report is published as part of a generous support by the European Union and UN Environment Programme to provide an in-depth source of information for policymakers to better understand the challenges and opportunities of various types of economic instruments and incentives associated with circular economy. At the same time, it also suggests necessary references for the formulation of new kind of incentives that can promote circular economy models in Vietnam.

**Associate Professor Nguyen Dinh Tho**

President

Institute of Strategy and Policy on Natural Resources and Environment

# Abbreviations

CE	Circular Economy
EU	European Union
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
OECD	Organization for Economic Cooperation and Development
MARD	Ministry of Agriculture and Rural Development
MOF	Ministry of Finance
MONRE	Ministry of Natural Resources and Environment
UNEP	United Nations Environment Programme



# INTRODUCTION

Vietnam has been one of the economies with the fastest growing GDP. Along with such growth, the increase in GDP has also resulted in several challenges related to environmental management. Given the rapid rise in the amount of solid municipal wastes, there is a large proportion of waste ending up in oceans and landfills. There is an urgent need to consider reusing, reducing, and recycling throughout the life cycle of products in Vietnam.

The circular economy is a broad concept, covering many environmentally friendly production and consumption approaches, such as industrial ecology, cleaner production, and 3R (Reduce - Reuse - Recycle). As the name implies, CE has a basic idea that it develops closed cycles, which are implemented in many ways such as redesigning products, implementing cleaner production, reducing excessive consumption, promoting the activities of repair – reuse – recycling, and aiming to share or rent instead of physical possession to avoid generating waste. CE is closely linked to the concept of sustainable development, and this relationship has been a research topic studied by a number of researchers (Geissdoerfer et al., 2017). The interest in circular economy evolved since 1990 when Pearce và Turner (1990) firstly used the term to describe an economic model in which materials transform from one form to another based on the first two laws of thermodynamics (Momete, 2020).

The SWITCH-Asia Regional Policy Advocacy Component (RPAC) is funded by European Union (EU), implemented by UNEP Regional Office for Asia and the Pacific, based in Bangkok. The EU SWITCH-Asia RPAC promotes the transition to circular economy as a road to transformation to an economic system that uses natural resources most efficiently, preserves the value of materials and products by using them circularly, and reduces the negative impact of economic activities on the environment and health. The EU sees the circular economy as an opportunity for resource-poor countries to secure access to vital resources, maintain global competitiveness, and ensure a high quality of the global environment. Applying circular economy approaches can cut industrial emissions, reduce the production of and exposure to hazardous substances, and contribute to climate change mitigation. (2019, European Commission). The EU SWITCH-Asia RPAC through UNEP Regional Office for Asia and the Pacific will provide both technical and financial supports to the Government of Vietnam through the Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) to strengthen and support Vietnam in developing a circular economy strategy through a scientific and participatory approach. The support from the EU SWITCH-Asia RPAC through UNEP compliments to the on-going work and supports.

The overall objective of this support is to enhance the transition from the conventional economy to circular economy in Vietnam. The activity aims at achieving the development of policy on circular economy for Vietnam, which will support the preparation of the Socio-Economic Development Strategy.

As a research and policy development unit under the Ministry of Natural Resources and Environment, the Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) has been striving to study the appropriate policies to accelerate the progress towards circular economy in Vietnam. The task of “Design approaches and assess incentives and policy instruments for initiating the transition to Circular Economy in Vietnam” has been identified as one of ISPONRE’s key tasks. CE is a content covering the activities of the whole economy, so the implementation of CE should be designed and integrated into a common strategy for socio-economic development. Relevant incentives and policy instruments to initiate and promote CE in Vietnam shall also be put into the overall economic and social policy at the macro level. Therefore, ISPONRE has also identified this task as one of ISPONRE’s efforts to contribute to the development of the National Socio-Economic Development Strategy for the post-2020 period.

# PART 1 OVERVIEW OF CIRCULAR ECONOMY

## 1. Concepts and strategies for implementation of circular economy

- **Concepts of Circular Economy**

The specific approach to circular economy (CE) is defined by policymakers based on academic concepts as well as the needs and specific development strategies of CE in a particular context. The concepts of CE given below aims to introduce the basic elements of CE and classify the evaluation criteria of CE.

To a certain extent, the CE is distinguished from a traditional linear economy (Take – Make - Dispose) in key characteristics: slowing down and closing the resource loop (Bocken et al., 2016). Slowing down is done through the design of long-life goods and product-life extension such as repairing or reuse, thereby slowing the resource loop. The resource loop is closed when used products are recovered and recycled. Thus, in a narrow scope, the CE focuses on the technical cycles that recover and restore products, components, and materials through strategies like reuse, repair, remanufacture, or recycling.

In a broad scope, the circular economy is an economic model where each process, including planning, defining resources, procurement, production and reprocessing, as well as output are designed and managed to maximize ecosystem functioning and human well-being (Murray et al, 2017). Therefore, in its broad scope, CE is oriented towards sustainable development while the socio-economic-environmental impacts of each implementation strategy of CE are carefully taken into account.

- **Circular Economy Strategies**

CE is an umbrella concept where CE strategies aim to achieve the CE goals that are very diverse and updated with new perspectives and methods of implementation. To illustrate, 'reduce', or R-approach focuses on not only reducing waste generation but also reducing raw materials input, eco-design, or consumption. The Netherlands has applied the R-approach in 10 strategies, including refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, and recover (Potting et al, 2018). Despite various CE strategies, the target groups of strategies can be generalized into 3 groups: (1) material flow (e.g. reducing material consumption); (2) energy flow (e.g. utilizing waste incineration for electricity generation); and (3) flow of time (e.g. a shared economic model to increase product useful life).

Moraga et al. (2019) proposed a hierarchical ladder of six common groups of strategies in Figure 1 in which the Strategy 6 considers the base scenario referring to a traditional linear economy.

Strategy 1	Preserve the <b>function</b> of products or services provided by circular business models such as sharing platforms, PPS (use- and result-oriented), and schemes promoting product redundancy and multifunctionality.
Strategy 2	Preserve the <b>product</b> itself through lifetime increase with strategies such as durability, reuse, restore, refurbish, and remanufacture.
Strategy 3	Preserve the product's <b>components</b> through the reuse, recovery and repurposing of parts.
Strategy 4	Preserve the <b>materials</b> through recycling and downcycling.
Strategy 5	Preserve the <b>embodied energy</b> through energy recovery at incineration facilities and landfills.
Strategy 6	Measure the linear economy as the reference scenario or the absence of a preservation strategy to show the status, progress, or regress towards CE.

**Figure 1: Strategies for implementing circular economy**

*Source: Moraga et al. (2019)*

## 2. Framework for measuring progress towards a circular economy

- **Types of indicators according to Circular Economy Concepts and Strategies**

The evaluation of the strategy for the implementation of CE is required to clarify the socio-economic-environmental impacts of the CE strategy. The implementation of the CE strategies can have direct and indirect effects (Potting et al. 2018); and the evaluation of implementation depends on the available data. In addition, determining whether the influencing factor is direct or indirect will be a challenge in the assessment, especially when the concept of CE is still a subject of debate. Also, the influencing factors can be measured quantitatively or qualitatively so the corresponding indicators will be either quantitative or qualitative. Thus, the evaluation indicators of the CE strategies can be classified into three categories (Moraga et al 2019):

- a. Factors that have direct and specific influences: Indicators can be related to one or more CE strategies that can identify the influencing factors, for example, the recycling rate for each recycled material.

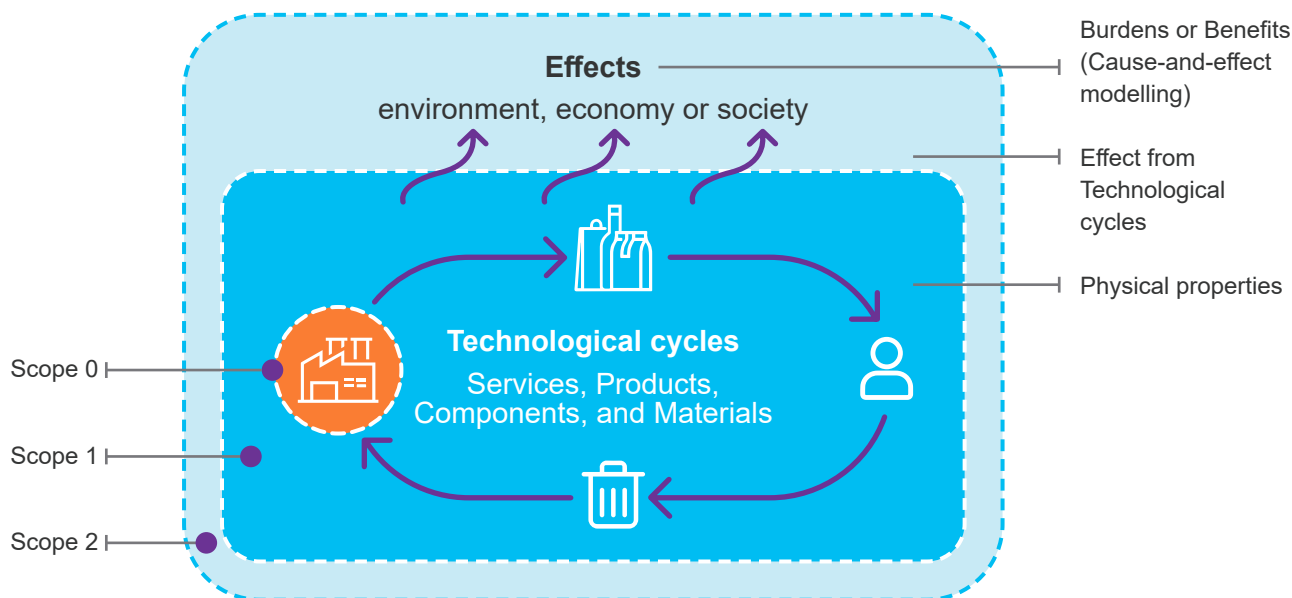
- b. Factors that have direct but not specific influences: Indicators can be related to one or more CE strategies that can be difficult to identify the influencing factors, for example, the reduction of water extraction which may be caused by the application of CE strategies by different water users.
- c. Factors that have indirect influences: Indicators can be related to some aspects of the implementation of CE, but also reflect the aggregate results of other development strategies, for example, the eco-innovation index which is calculated partly based on resource use efficiency. This index is not only related to CE but also relevant to other development strategies that support innovations.

- **Identification of the scope of influencing factors**

CE strategies are attached to the product lifecycle so that the indicators can be built on the life cycle thinking (LCT) approach from design, production, consumption, use, and disposal. The life cycle analysis approach has been applied in the EU Action Plan for the Circular Economy (Moraga et al 2019). The lifecycle analysis of CE needs to be associated with the goals of sustainable development (Momete, 2020). Sustainability requires a cohesion of the economic, social, environmental, and technical areas. Consequently, influencing factors will be determined based on the impacts of technical cycles on the economic, social, and environmental domains.

Moraga et al (2019) proposed indicators measuring CE in three measurement scopes as follows:

- a. Scope 0 includes the indicators that measure physical properties from the technological cycles, for example, the characteristics of the material and energy flow.
- b. Scope 1 includes the indicators that measure physical properties from the technological cycles with full or partial LCT approach, for example, the indicators reflecting the interactions between the material and energy flows within the technological cycles.
- c. Scope 2 includes indicators that measure the effects (burdens or benefits) from technological cycles, for example, the indicators reflecting environmental, economic, and/or social impacts.



**Figure 2: Proposed classification for the three measurement scopes from CE indicators**

*Source: Moraga et al (2019)*

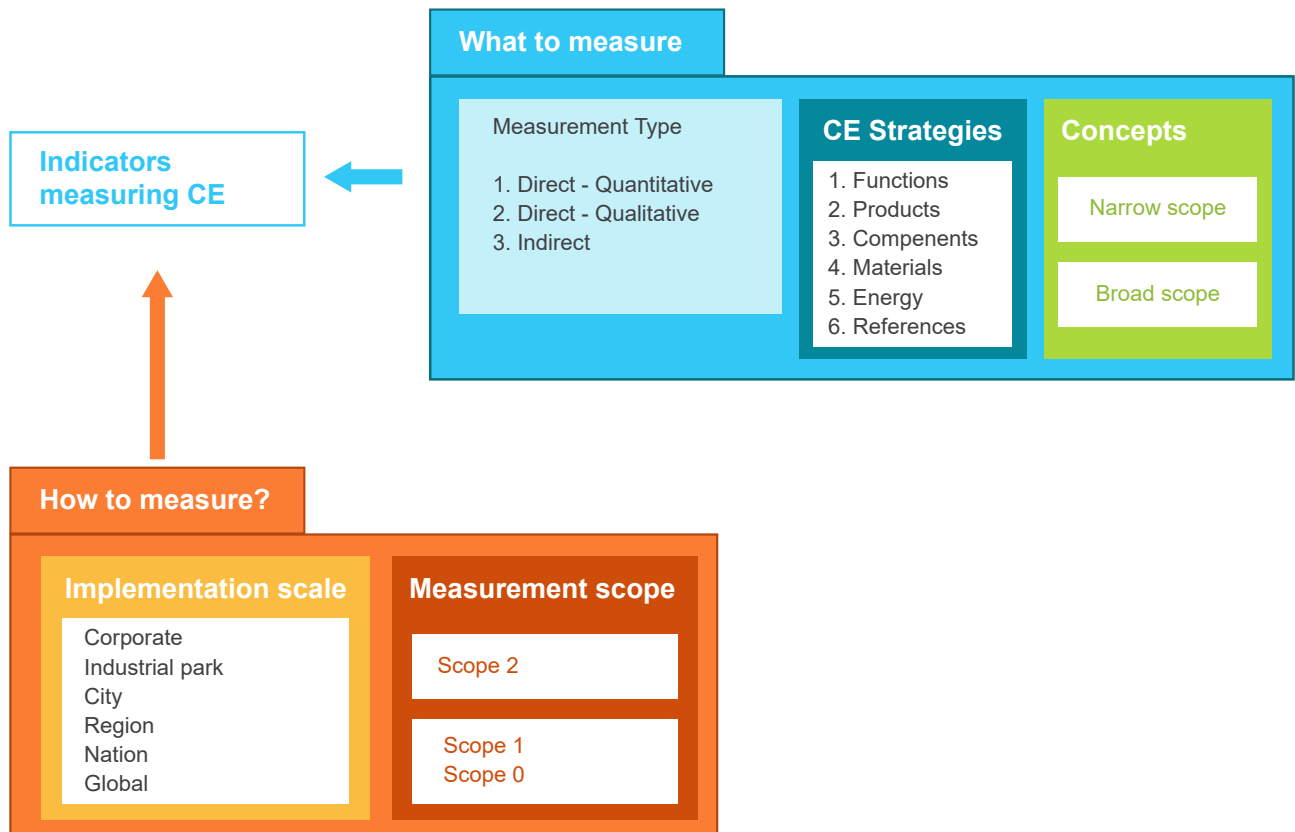
- **Identification of measuring scale of circular economy strategies**

CE economy can be performed on different scales. A variety of scales have differences in data, level of internal interaction, and level of external influences so that the corresponding indicators for measuring the performance of CE strategies are diverse. Some studies on CE have outlined three main scales of CE implementation, including macro as a city, province, region, or national levels, meso as eco-industrial parks and industrial symbiosis, micro as a single product, company, or consumer (Ghisellini et al 2016; Kirchherr et al 2017). However, such identification of three main scales is not clearly defined in some cases where a large enterprise or a large industrial park could have the similar significant impacts as a city.

In addition, CE has become an international agenda, e.g. cooperation in the European Union, thus the macro scale refers to the national level that could limit international CE strategies. Therefore, instead of defining the spatial scope with only 3 levels, Moraga et al (2019) proposed to determine the measurement scope of the indicators corresponding to the appropriate geographic scope: business, industrial park, city, region, country, region, global. It is also important to note that geographic boundary identification should be carefully considered when analyzing the product life cycle, especially when the product is manufactured based on a wide supply chain with a diverse geographic distribution. As a result, instead of defining the implementation scope with only three scales, Moraga et al (2019) proposed to determine the measurement scope of the indicators corresponding to the appropriate scope, including enterprises, industrial park, city, region, nation, global. Appropriate scopes should also be considered when analyzing the product life cycle, especially when the product is manufactured based on a wide supply chain with a diverse geographic distribution.

- **Framework for measurement of CE**

Based on two questions (What to measure? How to measure?), it proposes the framework to classify groups of indicators to measure and evaluate the implementation of CE (Figure 3).



**Figure 3: Framework for CE indicators**

## INTERNATIONAL EXPERIENCE IN IMPLEMENTATION OF CIRCULAR ECONOMY

This section focuses on policies and practical experience of some countries and their achievements made in their efforts towards circular economy.

### 1. Current status of implementation of circular economy in some countries

- **European Union (EU)**

In December 2015, the EU initiated to implement an Action Plan for the Circular Economy to develop a carbon-neutral, resource-efficient, and competitive economy. In March 2019, the EU released a report on the implementation of the 2015 Circular Economy Action Plan. The report highlighted a number of achievements as follows:

- ✓ Jobs related to CE increased by 6% in 2016 compared to 2012.
- ✓ In 2016, circular activities such as repair, reuse, or recycling generated almost €147 billion in value-added while standing for around €17.5 billion worth of investments.
- ✓ The recycling rate has grown and recycled material became an important source of raw materials.

The report also stated that circular economy is an inevitable trend all over the world and there are vast areas for improvement.

In March 2020, the EU launched the new EU Circular Economy Action Plan that is at the core of the European Green Deal and the EU roadmap towards climate-neutrality by 2025. The new Action Plan sets up specific targets, for example, doubling the EU's circular material use rate by 2030; increasing EU's GDP by an additional 0.5% by 2030, and creating around 700,000 new jobs.

According to the new EU's Action Plan, priority areas include seven sectors: (1) Electronics and ICT (2) Textiles (3) Plastics (4) Construction and buildings (5) Packaging (6) Batteries and vehicles and (7) Food. The 2020 Action Plan promotes circular economy at the international level through a Global Circular Economy Alliance and free-trade agreements.



Some preferential mechanisms are used to encourage the implementation of CE, including:

- ✓ CE models that may receive financial support from EU fundings, such as the EU Structural Funds and Cohesion Fund (SCF) and the LIFE program.
- ✓ Investment guarantee tools, namely InvestEU.
- ✓ Compulsory green public procurement.

To measure and evaluate progress in the implementation of CE, the EU developed and published a set of indicators for CE (Table 1).

**Table 1: Indicators for circular economy in the EU**

Source: <https://ec.europa.eu/eurostat/cache/scoreboards/CE/index.html>

No	Indicator
<b>Production and consumption</b>	
1	EU self-sufficiency for raw materials ( <i>percentage</i> )
2	Green public procurement
3	Generation of municipal waste per capita ( <i>Kg per capita</i> )
4	Generation of waste excluding major mineral wastes per GDP unit ( <i>Kg per thousand euro, chain-linked volumes (2010)</i> )
5	Generation of waste excluding major mineral wastes per domestic material consumption ( <i>percentage</i> )
6	Food waste ( <i>million tonnes</i> )
<b>Waste management</b>	
1	Recycling rate of municipal waste ( <i>percentage</i> )
2	Recycling rate of all waste excluding major mineral waste ( <i>percentage</i> )
3	Recycling rate of overall packaging ( <i>percentage</i> )
4	Recycling rate of plastic packaging ( <i>percentage</i> )
5	Recycling rate of wooden packaging ( <i>percentage</i> )
6	Recycling rate of e-waste ( <i>percentage</i> )
7	Recycling of biowaste ( <i>kg per capita</i> )
8	Recovery rate of construction and demolition waste ( <i>percentage</i> )

No	Indicator
<b>Secondary raw materials</b>	
1	End-of-life recycling input rates (EOL-RIR) ( <i>percentage</i> )
2	Circular material use rate ( <i>percentage</i> )
3	Imports from non-EU countries
4	Exports to non-EU countries
5	Intra EU trade
<b>Competitiveness and innovation</b>	
1	Gross investment intangible goods ( <i>percentage of gross domestic product (GDP) at current prices</i> )
2	Persons employed ( <i>percentage of total employment</i> )
3	Value-added at factor cost ( <i>percentage of gross domestic product (GDP) at current prices</i> )
4	Number of patents related to recycling and secondary raw materials

- **Netherlands**

The Netherlands initially approached its circular economy principles in 1979 when Ad Lansink's proposed policy on waste management was approved by the Congress. This policy presented a hierarchy of waste management (also known as the "Lansink ladder") that prioritized the prevention and reduction of waste generation, enhancing the reuse and recycling; followed by the thermal treatment of waste by incineration before going to the landfills (Cramer, 2014).

It took 10 years before new policies on waste prevention and reuse were launched. In 1990, 30 priority waste sources were selected to implement ambitious waste treatment programs. These waste sources range from tires, batteries, packaging to used oil. This new Dutch approach has effectively enabled the prevention, reuse, and recycling of waste streams. At the same time, an environmental industry was born based on the development of all types of waste management and recycling technologies.

Recently, on September 14, 2016, when the EU promulgated the circular economic package in 2015, the Netherlands officially launched a government-wide program for a circular economy in the country by 2050. This program aims to share the Cabinet's ambitions with a variety of stakeholders in which the interim objective is a 50% reduction in the use of primary raw materials (from minerals, fossils, and metals) by 2030. This program sets up immediate goals together with a roadmap for actions by 2050. As part of the effort, the government is responsible for designing actions to achieve these goals, functions as a market regulator, as well as create connections among relevant stakeholders to promote the transition towards circular economy.

- **Republic of Germany**

Germany was one of the countries that had an early start on the pathway towards circular economy. The country started implementing CE principles in 1996. This was accompanied by the enactment of the Closed Substance Cycle and Waste Management Act. This Act provides a framework for adopting closed-cycle waste management and ensuring that waste treatment is compatible with the environment.

Over the past decades, Germany has developed a number of ambitious energy, industrial, and environmental policies at the national level. Consequently, Germany has played an important role in these fields at the European level. According to the Organization for Economic Cooperation and Development (OECD), the solid environmental framework has made Germany a pioneer in sustainable development. This also proved that a low-carbon economy was likely to be more efficient and compatible with growth (OECD, 2012). Furthermore, Germany's National Strategy for Sustainable Development was adopted in 2002 that set out the guiding principles for national policies in all sectors. Despite many changes in the German Government over the years, this strategy still provides the basis for establishing specific goals and actions. For example, Germany has attempted to significantly increase energy efficiency as well as decouple energy consumption and greenhouse gas emissions from economic development (Lah, 2016).

The German government sets natural resource-saving goals for holistic environmental protection, including reducing landfills, conserving biodiversity, and using more sustainable resources. In particular, sustainability is a fundamental principle in German policies. An important factor in the country's transition to a sustainable society is the application of CE principles.

At the European level, a number of legal frameworks have been adopted to promote the CE in the region, such as the EU Waste Framework Directive, the EU Landfill Directive, and the EU Packaging and Packaging Waste Directive. Germany has adopted a number of CE strategies, such as waste minimization, reuse, recycling, and waste incineration to generate electricity and heat. One cornerstone of the German recycling policy framework is the Packaging Act (Verpackungsverordnung) which was passed in 1991 (Lah, 2016).

Germany has committed to a 40% reduction in greenhouse gas emissions if other EU member states agree with the EU's 30% reduction target by 2020. The objective is indicated in the German Integrated Energy and Climate Program which sets policy measures for the energy sector. Some policies to implement these goals include key measures such as the Renewable Energy Act (Erneuerbare-Energiene-Gesetz, EEG) and eco-tax reform.

- **Canada**

In Canada, the approach to circular economy has generally been overshadowed by the national goals on climate change and clean growth. Currently, Canada has not issued an integrated and comprehensive strategy on CE and cooperation to promote the deployment of CE.

The establishment of the National Zero Waste Council may be regarded as the approach to CE in Canada. This initiative aims to build a partnership among relevant stakeholders, namely governmental agencies, businesses, and non-governmental organizations to prevent waste generation and to promote the transition to CE in Canada. Based on inter-agency cooperation, the National Zero Waste Council has pushed innovation in the design, production, and use of products. The Council also has set up specific actions and activities for waste generators, thus contributing to a reduction in resource and energy consumption.

Founded by Metro Vancouver in collaboration with the Federation of Canadian Municipalities in 2013, the Council has united, among others, six of Canada's largest metropolitan regions – Metro Vancouver, Toronto, Montreal, Halifax, Calgary, and Edmonton. The Council is comprised of key business and government leaders, academia, and non-profit organizations. The main mission of the Council is to call for national action and systems change to address waste generation based on cooperation among business, government, and the community, at the national and international level, as an agent of change for waste prevention and reduction in the design, production, and use of goods. As a result, the Council released guiding principles as follows:

- ✓ Commit to collaboratively working with business, government, and community partners to develop new solutions.
- ✓ Adopt a waste prevention and reduction framework that positions Canadian cities and businesses to compete globally in an emerging resource-constrained economy.
- ✓ Align with global and international initiatives.
- ✓ Promote the economic, social, and environmental benefits associated with the conservation of resources.
- ✓ Consider local and global consequences and long term impacts.

Furthermore, the Council has also pursued the two strategic directions, including Design change and Behavior change. Design change is to catalyze change in the design of products and packaging to reduce the material intensity and allow them to be more easily reused, recycled, and recovered while Behavior change is to catalyze change in behavior, among all stakeholders and sectors of society, to reduce the amount of waste entering the waste stream.

On November 28, 2018, based on the principles and orientations set out by the National Zero Waste Council, the Ministry of Environment and Climate Change (ECCC) together with the Ministry of Health (HC) launched the Canada-wide Strategy on Zero Plastic Waste that outlines a vision to keep all plastics in the economy and out of the environment.

Previously, more than 89% of plastic has been buried and burned when adopting the current waste management programs. Consequently, the new Canada-wide Strategy on Zero Plastic Waste introduces an integrated system that focuses on areas where changes are needed across the plastic lifestyle from design to collection, clean-up, and value recovery.

This Strategy sets out the measures and actions needed such as awareness and education, research and innovation, and market-based regulations and tools. Designing is expected to be one of the priority actions to achieve the overall goal of 100% recyclable and recyclable plastic products. Canada also plans to reduce the amount of e-waste plastic exported to other countries to recycle more domestically (CCME, 2018).

- **United States of America**

In the United States, the circular economy is formed based on a market-based approach. The Market-Based Approaches (MBAs) provide opportunities for businesses and organizations to be free to participate in trading goods and services related to environmental protection, resource management, and response to climate change in compliance with the law of market supply and demand. MBAs encourages behaviors through market signals rather than instructions and directives of the government, whereas policies by the government emphasize initiatives on CE and the replication of good CE practices.

The example can be seen in the case of the electric waste market in the State of Colorado. Specifically, in 2013, the “Electronic Recycling Jobs Act” prohibits the disposal of waste electronic devices (e-waste) in Colorado. The enterprises immediately began to collect and recycle e-waste. The market has been established in which the buyers were households and the sellers were companies who collect and recycle e-waste. As a result, these activities have contributed to local environmental protection and created more jobs, and the state did not have to pay for the treatment of environmental pollution caused by e-waste (Nam, Hue, & Nhan, 2018). After that, many similar markets have been formed that accelerate the development of the area of waste collection and treatment. The area is considered to bring high profits for investors in the United States.

- **China**

China and Japan are the first two countries that formally adopt policies on CE at the national level (Reiki et al., 2018). Faced with the decline in natural resources and many serious environmental pollutions, China had a strong motivation to look for more suitable development. In consequence, China has taken the CE approach through the Cleaner Production Promotion Law that comes to effect in January 2003. This Law is enacted to enhance cleaner production, increase the efficiency of the utilization rate of resources, reduce and avoid the generation of pollutants, protect and improve environments, ensure the health of human beings and promote the sustainable development of the economy and society.

Under the Circular Economy Promotion Law that took effect from 2009, the National Development and Reform Commission (NDRC) is mainly responsible for the implementation of CE. NDRC has conducted two pilot projects on CE with the participation of 109 enterprises, 33 industrial zones, 7 provinces, and 19 cities.

In recent years, the Chinese Government has integrated the CE principles into its plans with a focus on policies at the municipal level. China deployed the CE approaches at three levels, including macro (city, province, and district), meso (symbiosis association), and micro (single object such as companies). The priority areas are the environmental industry, urban infrastructure, and ecosystems.

More specifically, the above CE Strategy by China aims to promote clean production at the enterprise level (micro-level), operate the industrial ecosystem in industrial zones (meso-level), and develop eco-cities at the regional level (macro-level). The trials have been carried out since 2005 in seven industrial sectors and 13 industrial zones, and in 10 eco-cities and eco-provinces (e.g. Beijing, Shanghai, Chongqing, Yang, Ningbo, Hebei, Dong Lang, Liaoning, Shandong, and Jiangsu) under the direction of the NDRC.

The development of eco-city includes three main aspects of the CE as follows:

- ✓ The industrial system of the CE (ecological industry, ecological agriculture, and service industry);
- ✓ Construction of urban infrastructure, particularly circulating water, energy recovery, and solid waste recycling;
- ✓ Ecological security with the emergence of green buildings, improving the quality of the living environment, and protecting the environment.

China also emphasizes the legal aspect of its approach to CE. In addition, based on the CE practices in China, a system of indicators were built to evaluate the progress. It is noted that the NDRC has only published CE indicators for the macro (regional economy) and meso (industrial park) levels, but not for the micro-level (Table 2).

**Table 2: Circular economy indicators at a macro level in China**

*Source: Geng et al (2012)*

No	Indicator
<b>Resource output rate</b>	
1	GDP/total consumption of the main mineral resource
2	Output of energy $\frac{1}{4}$ GDP/Energy consumption
<b>Resource consumption rate</b>	
1	Energy consumption per unit of GDP
2	Energy consumption per added industrial value
3	Energy consumption of steel (copper, aluminum, cement, fertilizer, paper)/steel production (copper, aluminum, cement, fertilizer, paper)
4	Water withdrawal per unit of GDP
5	Water withdrawal per added industrial value
6	Total amount of freshwater consumption/total amount of steel production (copper, aluminum, cement, fertilizer, paper)
7	Coefficient of irrigation water utilization
<b>Integrated resource utilization rate</b>	
1	Recycling rate of industrial solid waste
2	Industrial water reuse ratio
3	Recycling rate of wastewater
4	Safe treatment rate of municipal rubbish
5	Recycling rate of iron scrap
6	Recycling rate of non-ferrous metal
7	Recycling rate of paper
8	Recycling rate of plastic
9	Recycling rate of rubber

No	Indicator
<b>Waste disposal and pollutant emission</b>	
1	Industrial solid waste for final disposal
2	Industrial wastewater discharge
3	SO2 emissions
4	COD discharge

- **Japan**

The Japanese Government has set up a comprehensive legal framework for transitioning to a recycling-based society. The Basic Law for Establishing a Recycling-Based Society came into force in 2002, providing nationwide quantitative targets for recycling and dematerialization in the long run.

As a result, Japan's recycling rate for metal has been impressive, at 98% (Government of Japan, 2010). In 2007, only 5% of Japan's waste came to landfills, compared to 48% for the UK in 2008. The Japanese Recycling Law for electrical home appliances led to a great majority of electronic products being recycled, compared to 30%-40% in Europe (Government of Japan, 2010). Of these appliances, 74% - 89% of the materials they contained are recovered (Forum, 2012). Many of these materials are returned to the manufacturer of the same type of products (Panasonic, 2013). This can be regarded as a basis for Japan to develop a truly circular economy.

Since 1991, Japan's transition to a circular economy has been driven by a number of reasons:

- ✓ Japan has a high population density and limited land space. This forced the Japanese Government to find alternatives to landfills since the 1950s. Moreover, the incineration has also been replaced since the 1990s due to concerns about dioxins which could interfere with hormones, damage the immune system, and cause reproductive and developmental problems and cancers;
- ✓ Japan is one of the large industrial producers but its domestic metal and mineral resources are scarce. This provides opportunities to develop the remanufacturing and recycling industries. On the other hand, it is hard to underestimate the relevance of the importance of access to raw materials in Japan for public policy for the circular economy;
- ✓ Japanese business culture emphasizes collaboration that results in a comprehensive approach to CE.



At the national level, the implementation of CE is measured by using:

- ✓ Resource productivity indicator that measures material use as a proportion of GDP;
- ✓ Indicator for cyclical use rate of materials in the economy, measured by the material reused as a proportion of total material used by the economy;
- ✓ An output indicator, measuring how much waste is buried in landfills.

These indicators are aligned with specific targets. Furthermore, the Government also measures indicators for a societal effort toward a circular economy. For example, the size of the market for rental and leasing of goods, the amount of reusable packaging sold, and the number of local authorities adopting residual waste collection.

In Japan, the collaborative efforts are central to its CE system. Communities play an important role in the transition to CE through their daily activities, such as separating recyclables or paying recycling fees. Manufacturers fulfill their obligations by using more recycled materials and producing longer-lasting products that are easier to repair and recycle. The existing CE system in Japan has three key features:

- ✓ The consumer-friendly collection is the system for collecting old appliances for recycling. Old appliances are collected by retailers either in-store or when delivering a new appliance. For old IT equipment, the manufacturer can be requested to collect it by local authorities from the doorstep, or it can be taken to any post office to be returned to them. This routine is popular across Japan so that the perception of CE is well understood and easily applied.
- ✓ Consumers pay fees in advance for electronics at the point of purchase, including the cost of transport and recovery. The customer does not have any disincentive to participate when a product comes to the end of its life. Furthermore, penalties for fly-tipping are also strict.
- ✓ Recycling infrastructure is co-owned because the law requires consortia of manufacturers to run disassembly plants to ensure their direct benefit from recovering materials and parts. Companies, therefore, invest for the long term in recycling infrastructure. Because the companies own both manufacturing and recovery facilities, they can send product designers to disassembly factories to experience the frustrations of taking apart a poorly designed product. Some companies even put prototypes through the disassembly process to make sure they are easy to recover.

The CE system in Japan is built on collaboration and incentives. The implementation of the CE system has shown high profits, for example, the reuse and recycling sector was worth £163 billion in 2007 (7.6 percent of GDP) and employed 650,000 people (Government of Japan, 2010).

## 2. Lesson learned for Vietnam in transition to circular economy

It can be seen that there are two popular approaches to CE; (i) Systemic economy-wide implementation; and (ii) Focus on a group of sectors, products, materials, and substances (Kalmykova et al., 2018a).

For the systemic economy-wide implementation, the key is to create a closed-loop system within a geospatial space (e.g. ecological industrial zones, eco-cities, etc.). Vietnam could adopt this approach based on the scale of industrial zones since some local municipalities own industrial parks and large factories where its waste could be repurposed. Since it is feasible to build several eco-industrial parks in Vietnam, the government should issue preferential strategies and policies for businesses to participate in the CE system.

The second approach to CE is based on focusing on a group of sectors, products, materials, and substances. For example, Canada's approach through "Zero plastic waste" strategy aims to implement plastic waste recycling, while certain EU establishments provide strong legal support for waste management, namely reducing landfill, increasing the reuse and recycling of municipal waste and packaging waste, and improving the extended producer responsibility (EPR). This approach could be applied in Vietnam in various strategies to involve stakeholders, especially the private sectors and communities. Vietnam can launch campaigns to raise public awareness on CE, such as minimizing, reusing, and recycling plastic waste. This approach is also suitable for industries such as transportation, information technology, and the food industry.

## POLICIES, ECONOMIC INSTRUMENTS AND INCENTIVES FOR THE TRANSITION TO CIRCULAR ECONOMY IN VIET NAM

### 1. Current status of policies, economic instruments, and incentives related to circular economy principles

By sharing common purposes of saving resources, minimizing environmental pollution, and creating environmentally friendly products, investment activities to implement CE in Vietnam can receive similar incentives. Vietnam has issued policies to encourage production and consumption activities that reflect its CE principles. Some policies have been specified in the Law on Environmental Protection 2014 (LEP 2014) and Decree No.19/2015/ND-CP detailing the implementation of a number of articles of the LEP 2014. To illustrate, policies on incentives and supports for enterprises to produce environmentally friendly products are stipulated in Decree No.19/2015/ND-CP. Enterprises producing environmentally friendly products can enjoy preferential policies on corporate income tax and export tax, exemption or reduction of land rent, and receive governmental supports for site clearance or price support. Government agencies are responsible for strengthening communication and promotion of environmentally friendly products, as well as prioritizing the purchase of environmentally friendly products. Currently, the Ministry of Finance issued a number of preferential policies for the production of environmentally friendly products following the Decree 19/2015/ND-CP, including Circular No.212/2015/TT-BTC dated December 31, 2015, guiding corporate income tax for environmental protection activities.

In Vietnam, the economic instruments in environmental management have been legalized, but the enforcement of such regulations is not as effective as expected. The Law on Environmental Protection 2005 provided 10 articles regulating financial measures, including provisions on environmental taxes, environmental deposits, environmental protection fees, and the government's financial support measures (e.g. exemption, reduction, or price subsidy for recycled products from waste). On that basis, the LEP 2014 also regulates incentives and support for environmental protection, environmental protection fees, natural resources tax, environmental restoration deposit, biodiversity compensation, environmental damage compensation, and other related measures. These measures have created the necessary economic momentum, changing the behavior of waste source owners, especially encouraging them to recycle and reuse waste to save resources and minimize the risk of environmental pollution in their business activities.

Current policies, incentives, and economic instruments applied in environmental management in Vietnam are presented in Table 3 below.

**Table 3: Policies, incentives, and economic instruments applied in environmental management in Vietnam**

No	Economic instrument	Responsible agency	Relevant legal documents
<b>I</b>	<b>Economic instruments applied in environmental management</b>		
<b>I.1</b>	<b><i>Economic tools related to tax and fee</i></b>		
1	Environmental protection tax	The Government	<ul style="list-style-type: none"> <li>- Law No. 38/2019/QH14 on Tax Administration</li> <li>- Law No. 83/2015/QH13 on State Budget</li> <li>- Law No.57/2010/QH12 on Environmental Protection Tax</li> <li>- Law No. 45/2009/QH12 on Severance tax</li> </ul>
2	Environmental protection fee	The Government Related ministries	<ul style="list-style-type: none"> <li>- Law No. 38/2019/QH14 on Tax Administration</li> <li>- Law No. 83/2015/QH13 on State Budget</li> <li>- Law No. 97/2015/QH13 on Fees and Charges</li> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Government's Decree No. 154/2016/ND on environmental protection fee on wastewater</li> <li>- Government's Decree No. 154/2016/ND on environmental protection fee on mineral extraction</li> <li>- Government's Decree No. 38/2015/ND on the management of waste and discarded materials</li> </ul>
<b>I.2</b>	<b><i>Financial tools</i></b>		
1	Environmental protection deposit	The Government MONRE	<ul style="list-style-type: none"> <li>- Mineral Law No. 60/2010/QH12</li> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Government's Decree No. 19/2015/ND-CP detailing the implementation of a number of articles of Law on Environmental Protection 2014</li> </ul>

No	Economic instrument	Responsible agency	Relevant legal documents
			<ul style="list-style-type: none"> <li>- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection</li> <li>- Prime Minister's Decision No.18/2013/QD-TTg on environmental remediation and environmental remediation deposits in mineral extraction</li> </ul>
2	Payment for Environmental Services	The Government MARD MONRE	<ul style="list-style-type: none"> <li>- Law on Forestry No. 16/2017/QH14</li> <li>- Law on Biodiversity No. 20/2008/QH12</li> <li>- Government's Decree No.99/2010/ND-CP dated 24/9/2010 on payment for forest environment services</li> <li>- Government's Decree No. 147/2016/ND-CP amending a number of articles of Decree No. 99/2010/ND-CP</li> </ul>
3	Liability insurance for environmental damages	The Government MOF MONRE	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection</li> <li>- Government's Decree No. 03/2015/ND-CP dated 06/01/2015 on environmental damage assessment</li> </ul>
4	Green credit	MOF	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Law No. 47/2010/QH12 on credit institutions</li> <li>- Prime Minister's Decision No. 986/QD-TTg approving the development strategy of Vietnam's banking sector to 2025, with a vision to 2030</li> </ul>

No	Economic instrument	Responsible agency	Relevant legal documents
5	Environmental protection fund	National Assembly Ministries and localities	Law No. 55/2014/QH14 on Environmental Protection
<b>I.3</b>	<b>Market making tools</b>		
1	Eco-label	MONRE	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Ministry of Natural Resources and Environment's Circular No. 41/2013/TT-BTNMT providing procedures for and certification of eco-labels for environmentally friendly products</li> </ul>
<b>II</b>	<b>Policies on management of environmental protection</b>		
1	Development of environmental industry	The Government MOIT	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Prime Minister's Decision No. 192/QD-TTg approving "Scheme for developing Vietnam's environmental industry by 2025"</li> </ul>
2	Development of environmental service and goods	The Government Related ministries	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Decision No. 1393/QD-TTg dated 25/9/2012 of Prime Minister approving National strategy on green growth</li> </ul>
3	Incentives and support for environmental protection activities	The Government MONRE	<ul style="list-style-type: none"> <li>- Law No. 55/2014/QH14 on Environmental Protection</li> <li>- Government's Decree No. 19/2015/ND-CP detailing the implementation of a number of articles of Law on Environmental Protection 2014</li> <li>- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection</li> </ul>

## 1.1. Environmental protection tax

### a) Current legal framework on environmental protection tax

- The Law No. 38/2019/QH14 on tax administration dated 13/6/2019. This Law provides for administration of taxes and other amounts payable to the State Budget. According to the Law, other amounts payable to the state budget collected by tax authorities include: fees and charges prescribed in the Law on Fees and charges; land levies payable to the state budget; **rents for land and water surface; payment for the mining permit;** payment for the water resources exploitation permit; amounts payable to the state budget derived from revenue from the sale of the property on lands, transfer of land use rights as prescribed in the Law on Management and use of public property; fines for administrative tax offenses and customs offenses; late payment interest and other revenues as prescribed by law. Other amounts payable to the state budget not collected by tax authorities include: **payments for dumping at sea prescribed in the law on natural resources, the environment of sea and islands;** fees for protection and development of paddy soils in compliance with provisions on land; fines for administrative violations following provisions on the imposition of penalties for administrative violations other than administrative tax offenses and customs offenses; amounts payable to the state budget under provisions on management, use of public property collected from the management, use, exploitation of public property for purposes of a business, renting, joint venture, association, after completion of tax, fee and charge liabilities; foreign aids; other revenues as prescribed by law.

- Law No. 83/2015/QH13 on State Budget dated 25/6/2015. This Law deals with the planning, implementation, audit, statement, and supervision of state budget; responsibilities and entitlements of agencies, organizations, units, and individuals relevant to the state budget.

- Law No. 57/2010/QH12 on Environmental protection tax dated 15/11/2010. This Law provides for a taxable subject, un-taxable subject, taxpayers, tax base, tax declaration, tax calculation, tax payment, and environmental protection tax refund. Under this law, environmental protection tax means indirect-collected tax, collected on products and goods when used to cause negative environmental impacts.

- Law No. 45/2009/QH12 on Severance tax dated 25/11/2009. This Law provides for severance tax-liable objects, severance taxpayers, severance tax bases, and severance tax declaration, payment, exemption, and reduction. Severance tax-liable objects include metallic minerals, non-metallic minerals, crude oil, natural gas, coal gas, natural forest products other than animals, natural aquatic products including marine animals and plants, natural water including surface water and groundwater, natural swallow's nests, and other resources prescribed by the National Assembly Standing Committee. Furthermore, in some cases, severance taxpayers shall be defined as follows:

- For a mining enterprise established based on a joint venture, the joint-venture enterprise shall pay a severance tax.
- For Vietnamese and foreign parties to a business cooperation contract to exploit natural resources, the parties' liability to pay severance tax must be specified in such contract.
- In case an exploiter conducts small-scale exploitation of natural resources and sells them to a principal purchaser that has a written commitment or an approval to declare and pay severance tax on the exploiter's behalf, the principal purchaser shall pay severance tax.

#### **b) Existing inadequacy related to environmental protection tax**

Prior to 2010, Vietnam did not have its own separate environmental taxation collected on products and goods. The Government has issued and implemented many financial measures to encourage investors to participate directly in environmental pollution treatment activities as well as use resources economically and effectively, thus contributing to environmental restoration. These measures are implemented through a number of taxes such as land tax, agricultural land use tax, natural resource tax, excise tax, corporate income tax, and through fees and charges applied to the activities affecting the environment such as environmental protection fee for wastewater, environmental protection fee for mineral exploitation, environmental protection fee for solid waste. In addition, tax policies such as special consumption tax, corporate income tax, export tax, and import tax were imposed to promote environmental protection activities. However, the revenues from such environmental protection fees is still very limited because these fees have low legal status and low rates, resulting in low impact and efficiency. Incentives for investment in environmentally friendly products, zero-import tax rate, or low tax rates on eco-friendly purchases have not directly affected consumer behavior and production of products that pose negative impacts on the environment.

On November 15, 2010, the National Assembly passed the Law on Environmental Protection Tax, effective January 1, 2012. This Law has created a synchronous and stable legal framework that comprehensively regulates actions that cause adverse environmental impact. It contributes to the behavioral changes among organizations and individuals, raising awareness on environmental protection in investment, production, and consumption, overriding any previous policies that were ineffective, and creating additional financial resources for environmental protection activities.

According to the Law on Environmental Protection Tax 2010, the taxable items only apply to goods but does not include services that cause negative impacts on the environment. Article 3 of the Law regulates 8 groups subject to environmental protection tax, including: (1) Gasoline, oil, grease; (2) Coal; (3) Hydrogen-chlorofluorocarbon liquid (HCFC); (4) Taxable-plastic bag; (5) Herbicide which is restricted from use; (6) Pesticide which is restricted from use; (7) Forest product preservative which is restricted from use; and (8) Warehouse disinfectant which is restricted from use. As can be seen, the above groups are essential goods used in daily life. However, there are many other products that cause environmental pollution that has not been subject to an environmental protection tax.



An appropriate roadmap is needed to revise the list of goods subject to environmental protection tax based on the following principles: (i) manufactured and imported goods that cause negative environmental impacts when being used; (ii) compliance with international commitments to which Vietnam is a contracting party and with international practices; and (iii) ensure feasibility and taking into account the harmony with economic development that do not affect the competitiveness of Vietnamese goods, especially exported goods.

## **1.2 Environmental protection fees**

### **a) Current legal framework on environmental protection tax**

- The Law No. 38/2019/QH14 on tax administration dated 13/6/2019. This Law provides for the administration of taxes and other amounts payable to the State Budget. According to the Law, other amounts payable to the state budget collected by tax authorities include: fees and charges prescribed in the Law on Fees and charges; land levies payable to the state budget; rents for land and water surface; payment for the mining permit; payment for the water resources exploitation permit; amounts payable to the state budget derived from revenue from the sale of the property on lands, transfer of land use rights as prescribed in the Law on Management and use of public property; fines for administrative tax offenses and customs offenses; late payment interest and other revenues as prescribed by law. Other amounts payable to the state budget not collected by tax authorities include payments for dumping at sea prescribed in the law on natural resources, the environment of sea and islands, fees for protection and development of paddy soils in compliance with provisions on land, fines for administrative violations following provisions on the imposition of penalties for administrative violations other than administrative tax offenses and customs offenses, amounts payable to the state budget under provisions on management, use of public property collected from the management, use, exploitation of public property for purposes of a business, renting, joint venture, association, after completion of tax, fee and charge liabilities, foreign aids, and other revenues as prescribed by law.

- Law No. 83/2015/QH13 on State Budget dated 25/6/2015. This Law deals with the planning, implementation, audit, statement, supervision of state budget, responsibilities and entitlements of agencies, organizations, units, and individuals relevant to the state budget.

- Law No. 97/2015/QH13 on fees and charges dated 25/11/2015. This Law regulates the list of fees and charges; fee and charge payers, fee and charge collecting agencies, principles of determination of the level of collection, exemptions, remissions, payment, management, and use of fees, charges, authority and responsibility of regulatory agencies, and other organizations in the management of fees and charges. According to the Law, environmental protection fees include fees for wastewater, fees for air emission, fees for mineral extraction, and fees for assessment of environmental impact assessment reports, detailed environmental protection project; fees for assessment of planning for environmental remediation.

- Law No. 55/2014/QH14 on Environmental protection defines the environmental protection fee in Article 148. Organizations, individuals discharging waste into the environment, or causing negative effects on the environment shall pay an environment protection fee. The rate of environmental protection fee depends on: (i) Amount of waste discharged into the environment, scale of negative effects on the environment; (ii) Levels of toxicity, levels of hazard for the environment; and (iii) Capacity of the waste-receiving environment. The rate of environmental protection is adjusted to the requirements of environmental protection and socio-economic conditions of the country in each stage. Collected environmental protection fees shall be used for environmental protection activities.

- Government's Decree No. 154/2016/ND on environmental protection fee on wastewater. This Decree stipulates the matter for which the fee is charged, fee payers, fee exemption, fee rate, declaration, payment, collection, and use of the environmental protection fee on wastewater. The environmental protection fee defined in this Decree is imposed on industrial and domestic wastewater, except as the exemptions such as water discharged from hydropower plants, water that circulates in a production and processing facility and is not discharged into the environment in any form (liquid, solid and gas), seawater discharged after being used for salt production.

- Government's Decree No. 164/2016/ND on environmental protection fees on mineral extraction. This Decree deals with objects subject to environmental protection fees, payers, fees, calculation method, declaration, payment, and use of environmental protection fees on mineral extraction. Objects subject to the environmental protection fees on mineral extraction prescribed in this document include the extraction of crude oil, natural gas, coal gas, metallic minerals, and non-metallic minerals.

- Government's Decree No. 38/2015/ND on the management of waste and discarded materials. This Decree stipulates collection, transportation, and treatment fees daily-life solid waste. The revenues to pay for the collection, transportation, and treatment of daily-life solid waste shall include cleaning fees and other revenues as prescribed by law. The expenses of collection, transport, and storage of daily-life solid wastes generated from the individuals, households, and public places shall be covered through the local budget. The expenses of daily-life solid waste treatment shall be a basis for the valuation of the services and a basis for contracting the services of daily-life solid waste treatment.

## **b) Existing inadequacy related to environmental protection fees**

Currently, the environmental protection fee for exhaust emissions has not been issued. Previously, the Prime Minister issued Decision No. 49/2011/QĐ-TTg on the roadmap for the application of exhaust emission standards to manufactured, assembled, and imported brand-new automobiles and two-wheeled motorcycles. Under this Decision, the Ministry of Finance is responsible for developing and promulgating a charge tariff for testing of exhaust emission of cars and motorbikes according to level 3, 4, and 5 of exhaust emission standards.

The environmental protection fee is specified in Article 148 of the Law on Environmental Protection 2014. The Law on Fees and Charges 2015 stipulates a list of fees in the field of environmental protection, including environmental protection fees for wastewater, environmental protection fees for emissions, and environmental protection fees for mineral exploitation. However, the Law on Fees and Charges does not provide detailed regulations for the above environmental protection fees. Instead, the calculation of fees is based on the provisions of the Law on Environmental Protection. According to the State Budget Law 2015, all revenues from the environmental protection fee is integrated into the State budget revenue, then being reallocated to environmental protection expenditures. This has reduced the efficiency and transparency in the collection of environmental protection fees.

### **1.3 Environmental protection deposit**

#### **a) Current legal framework on environmental protection deposit**

- Mineral Law No. 60/2010/QH12 stipulates that before conducting mineral mining activities, mining organizations and individuals shall pay a deposit for environmental rehabilitation and restoration according to the Government's regulations<sup>1</sup>.
  
- Law on Environmental Protection 2014 prescribes that in course of prospecting, extraction, and processing of minerals, interested organizations or individuals must provide environmental remediation deposits in accordance with laws<sup>2</sup>.
  
- Government's Decree No. 19/2015/ND-CP detailing the implementation of a number of articles of Law on Environmental Protection 2014. According to this Decree, deposit making for environmental renovation and restoration is that the organizations or individuals deposit an amount of money in the Vietnam Environment Protection Fund or the local environmental protection fund to ensure the responsibility for the environmental renovation and restoration of organizations and individuals for mineral extraction activities.
  
- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection. The Government's Decree No. 40/2019/ND-CP provides amendments to Article 8 of the Government's Decree No. 19/2015/ND-CP on deposit making for environmental renovation and restoration of mineral extraction activities:
  - The deposit must be equal to the funding for environmental renovation and restoration according to the contents of environmental renovation and restoration approved by the competent authority.

<sup>1</sup> Clause 3, Article 30, Mineral Law 2010

<sup>2</sup> Point dd, Clause 1, Article 38, Law on Environmental Protection 2014

- The calculation of deposit must apply the norm and unit price of localities at the time of preparation for the plan. In case the locality has no norm or unit price, the norm or unit price of the respective Ministry or sector. In case the Ministry or sector has no norm or unit price, the market price shall be applied.
- Organizations and individuals extracting minerals must make deposits annually or by each stage taking into account inflation factors.
- Organizations and individuals extracting minerals must deposit in the Vietnam Environment Protection Fund or the local environmental protection fund. The deposit shall be refunded in Vietnam dong.
- The deposit may earn interest which is equal to the borrowing interest of the environmental protection fund where the deposit is made and is calculated from the time of depositing. Organizations and individuals shall draw interest only once after having a decision on mineral mine closure.
- The refund of deposit shall be done based on organizations' and individuals' completion of each part of the whole of the contents of environmental renovation and restoration under the approved plan.
- Where the organizations and individuals have made a deposit but been dissolved and have not carried out the environmental renovation and restoration per the approved plan, the agency having authority to approve the project of mine closure shall use the amount of deposit including its interest for implementation of environmental renovation and restoration.

- Prime Minister's Decision No.18/2013/QĐ-TTg on environmental remediation and environmental remediation deposits in mineral extraction: This decision applies to organizations and individuals licensed to extract mineral extraction and involved organizations and individuals within the territory of the Socialist Republic of Vietnam. Environmental remediation in the exploration and extraction of petroleum, mineral water. Besides natural hot water has not been regulated by this Decision.

#### **b) Existing inadequacy related to environmental protection deposit**

Current regulations stipulate that environmental protection deposit shall be paid every year or in a specific period. Such regulations, however, are not strongly enforced and leads to delays, late payments, or even no payment. According to the local statistics, the number of organizations and individuals that strictly implement the deposit payment for environmental rehabilitation and restoration in mineral exploitation is only 40 – 45%. In addition, the regulation should be revised where organizations or individuals licensed to mineral mine pay the Vietnam Environment Protection Fund or the local environmental protection fund to guarantee environmental improvement and rehabilitation. The revision aims to ensure transparency in the management of such a deposit.

Based on the practical implementation of this economic tool, it is suggested to apply to some activities that have potential risks to the environment, namely the production of toxic chemicals, exploitation of water resources, landfills, and projects causing soil contamination.

## **1.4 Payment for ecosystem services**

### **a) Current framework on ecosystem services**

- Law on Forestry No. 16/2017/QH14 stipulates payment for forest environmental services in Section 4 (from Article 61 to Article 65). The main principle is that users of forest environmental services shall pay relevant charges to their forest environmental service providers. Charges for forest environmental safety services shall be paid directly or indirectly. Charges for forest environmental services shall be added to prime costs of goods or services of users.

- Law on Biodiversity No. 20/2008/QH12 indicates that organizations and individuals using environmental services related to biodiversity shall pay charges to service providers<sup>3</sup>.

- Government's Decree No. 99/2010/ND-CP dated 24/9/2010 on payment for forest environment services. This Decree provides for the policy on payment for forest environment services in Vietnam, covering:

- Types of forest environment services that are paid for by users to providers defined in this Decree.
- Providers and users of forest environment services.
- Management and use of the payment for forest environment services.
- Rights and obligations of providers and users of forest environment services.
- Responsibilities of state management agencies at all levels and of all sectors for the payment for forest environment services.

- Government's Decree No. 147/2016/ND-CP dated 02/11/2016 amending a number of articles of the Decree No. 99/2010/ND-CP.

<sup>3</sup> Article 74 of Law on Biodiversity 2008

## **b) Existing inadequacy related to payment for ecosystem services**

In 2010, the financial mechanism for Payment for Forest Environmental Services (PFES) was introduced in Vietnam. Forest owners are the recipients of PFES payments, including organizations, households, and individuals that are allocated forest land by the government for forest protection and development. Forest owners also include national parks, natural protected areas, forest companies, the Protection Forest Management Board, farmers, and the commune's authorities. Four sectors, including hydroelectricity, ecotourism, water supply, and industrial sectors that benefit from forest environmental services, such as water supply, clean water, and natural beauty, have obligations to pay for FES. Payment rates have been determined for each sector. The Forest Protection and Development Fund (FPD) is assigned by the Government to provide the PFES transfer service.

Although the PFES has become an additional financial funding for forest protection and biodiversity conservation in Vietnam since 2011, there have been shortcomings in the implementation of PFES:

- Payments for FES from the water supply and tourism sectors are much lower than the benefits the companies can have from forest environmental services. Therefore, it is required to increase water prices and expand PFES revenues for water supply and tourism companies. For example, in the case of hydroelectricity, it is estimated that benefits from forest environmental services vary from 63 to 368 VND/kwh, compared with the PFES rate of 36 VND/kwh. When it comes to water supply companies, the benefits of forest environmental services is about 65 VND/m<sup>3</sup> of water while the PFES rate is only 52 VND/m<sup>3</sup>.
- There is no law that regulates companies in the aquaculture sector participating in FES.

Also, there is no detailed regulation to guide the payment mechanism for ecosystem services or the application of payment for ecosystem services to other ecosystems such as wetlands, marine, and rocky mountains.

## **1.5 Liability insurance for environmental damages**

### **a) Current framework on liability insurance for environmental damages**

- Law on Environmental Protection No. 55/2014/QH14 stipulates liability insurance for environmental damages in Article 167. Organizations, individuals operating in production, business, and services who are at risk of causing significant damage to the environment must buy liability insurance for environmental damages.

- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection. This Decree prescribes a list of activities subject to environmental liability insurance, including 4 lines of business; oil and gas activities (including oil and gas exploration and extraction); operation of seagoing ships specialized for shipment of petroleum, petroleum preparations, and other dangerous goods in seaport waters and territorial sea of Vietnam; manufacture and trade in chemicals, petrol, and oil; and storage, transportation and treatment of hazardous waste. These entities may either buy environmental liability insurance or set aside a risk reserve fund as per the law.

- Government's Decree No. 03/2015/ND-CP dated 06/01/2015 on environmental damage assessment. This Decree promulgates responsibility for claiming compensation and environmental damage assessment including collection of evidence for environmental damage assessment, calculation of environmental damage, and compensation for environmental damage caused by pollution or degradation.

#### **b) Existing inadequacy related to liability insurance for environmental damages**

- According to the Law No.24/2000/QH10 on insurance business, liability insurance for environmental damage is not compulsory insurance. After the LEP 2014 was enacted, there are still no guiding legal documents on insurance premiums, insurance participants, management of insurance, and policies on encouragement and support to participate insurance market.

Meanwhile, awareness of the authorities, communities, and businesses on liability insurance for environmental damage is still low. There is lack of research on risk assessment for each type of production to identify an appropriate level of insurance premiums and compensation payments. Due to the difficulties in quantifying the environmental risks and compensation, some insurance companies are not willing to participate in the supply of this insurance product in Vietnam. At the same time, if environmental pollution occurs, the cost of insurance could be very high that exceed the financial capacity of the insurance company.

### **1.6 Eco-labeling**

#### **a) Current legal framework on eco-labeling**

- Law on Environmental Protection No. 55/2014/QH14 regulates that agencies, organizations, family households, or individuals shall be responsible to manufacture and consume eco-friendly products and services. The head of state budget-funded institutions shall bear their responsibility for preferring eco-friendly products and services that have been recognized as ecolabels under legal regulations.



- Ministry of Natural Resources and Environment’s Circular No. 41/2013/TT-BTNMT dated 02/12/2013 provides procedures for and certification of eco-labels for environmentally friendly products. Ecological labels as specified in this Circular shall be named as Vietnam Green Label. Applying the Vietnam Green Label is voluntary, and not under the scope of regulation of laws on the labeling of goods.

## **b) Existing inadequacy related to eco-labeling**

The Vietnam Green Label Program (VGLP) is the national eco-labeling program in Vietnam that has been implemented since 2009. The VGLP aims to improve and maintain the quality of the environment by minimizing the use of energy and materials and preventing waste generated in production, trading, and consumption of products and services.

The legal framework for the VGLP in Vietnam, for example, provisions on incentives and supports prescribed in the LEP 2014 and the Decree 19/2015/ND-CP, has not been specified. In particular, the Ministry of Finance has not yet issued the sub-laws for guiding the regulations on corporate income tax incentives and green public procurement. Since certification with Vietnam Green Label is not mandatory, most manufacturers seem disinterested in taking part in the practice.

## **1.7 Green credit**

### **a) Current legal framework on green credit**

- Law on Environmental Protection No. 55/2014/QH14 regulates that providing green credits is one of course of actions that are encouraged to take to protect the environment<sup>4</sup>.

- Law No. 47/2010/QH12 on credit institutions. This Law provides the establishment, organization, operation, special control, reorganization, and dissolution of credit institutions; and the establishment, organization, and operation of foreign bank branches and representative offices of foreign credit institutions and other foreign institutions engaged in banking operations.

- Decision No. 986/QD-TTg dated 08/8/2018 of Prime Minister approving the Strategy for the development of the banking industry to 2025 with a vision towards 2030. One of the main goals indicated in the Decision is to promote “green credit” and “green banking” with the aim of transforming the economy towards green growth and increasing the proportion of bank credit capital invested in renewable energy, clean energy, low-carbon manufacturing, and consumption.

<sup>4</sup> Clause 7, Article 6, Law on Environmental Protection 2014



## **b) Existing inadequacy related to green credit**

- Current regulations on green credit are not specific. Projects that meet the criteria to reduce social and environmental risks mainly lead to more investment costs, thus reducing economic efficiency. Many industries related to green growth are relatively new in Vietnam such as solar power, wind power, waste to energy that may cause confusion in project evaluation.

- The system of tools to promote green projects is facing many difficulties, particularly in terms of technical assistance, project appraisal. In fact, banks and financial institutions have limited experience and skills in the evaluation of green projects.

## **1.8 Environmental protection fund**

### **a) Current legal framework on environmental protection fund**

- Law on Environmental Protection No. 55/2014/QH14 provides regulations on environmental protection funds in Article 149. The Environmental Protection Funds include the central environment protection fund, environment protection funds of Ministries and specialized authorities, and provincial environment protection funds that are established to support environmental protection activities. Capital for national and provincial environmental protection funds is derived from the following sources: state budget; environmental protection fees; compensation to the state for environmental damages; grants, aids, and entrusted investments from domestic and overseas entities.

### **b) Existing inadequacy related to environmental protection funding**

- Despite the lack of specific guiding documents on the organization and operation of the provincial environmental protection fund, 46/63 provinces and cities directly under the Central Government have managed to establish their funds in 2020. However, there have been lots of challenges related to the organizational model, operating mechanism, and operating capital which have resulted in the ineffectiveness of such funds. The main reason is the lack of a concrete legal corridor for the organization and operation of the Provincial Environmental Protection Fund. To illustrate, currently, each locality has different perceptions and applications due to inconsistency in the relevant existing legal documents on its environmental protection funding.

## 1.9 Environmental industry development

### a) Current legal framework on environmental industry development

- Law on Environmental Protection No. 55/2014/QH14 stipulates that the environmental industry refers to an economic sector that involves the supplying of technological solutions, equipment, services, and products used to suit the requirements for environmental protection. The Government shall invest and provide favors and supports to individuals, organizations being involved in the development of the environmental industry; in the construction and upgrading of technical infrastructure for waste treatment and recycling; in the establishment and development of centralized waste treatment and recycling sites; and in the production and supply of equipment, products in service of environmental protection<sup>5</sup>.

- Decision No. 192/QĐ-TTg dated 13/2/2017 of Prime Minister approving “Scheme for developing Vietnam’s environmental industry by 2025”. This Decision indicates primary principles for developing the environmental industry in Vietnam as follows:

- Environmental industry development is a significant aspect in the whole that is the nation’s socio-economic development;
- Provisions of technology, equipment, services, and products serving as environmental protection must be simultaneously developed to meet the requirements and conditions of the national socio-economic development and the international development trends;
- The Government encourages and enables every domestic and foreign organization and individual to invest in the development of Vietnam’s environmental industry.

### b) Existing inadequacy related to the development of the environmental industry

Although the investment demand for environmental protection in many economic sectors is very large, the system of mechanisms and policies to promote the environmental industry has not been completed. For example, the Government has not issued a Decree on environmental development and its supporting industries. The linkage in the production and supply of components in these industries has not yet been formed. In addition, most existing enterprises have limited capacity for production and low competitiveness, while many investors worry about the low benefits yielded from environmental services.

<sup>5</sup> Article 153, Law on Environmental Protection 2014

Preferential policies to support the development of the environmental industry have been regulated but difficult to implement due to the lack of identification of beneficiaries from such incentives, along with the lack of environmental industrial products itemization. Furthermore, the environmental industry is not considered as a branch in the national economic system. Many contents under Decision No.192/QD-TTg dated February 13, 2017, of the Prime Minister has not been legalized to create a legal corridor for the development of the environmental industry in Vietnam.

## **1.10 Environmental service and goods development**

### **a) Current legal framework on the development of environmental service and goods**

- Law on Environmental Protection No. 55/2014/QH14 stipulates the development of environmental services in Article 150. Under this Article, the Government encourages organizations, individuals to establish environmental service business through bidding, public-private partnership (PPP) in the following areas: Collecting, transporting, recycling and treating waste; observing, analyzing environmental, assessing environmental treatment; developing, transferring environmental friendly production technology, environmental technology; providing environmental consultancy, training, and information; carrying out environmental appraisal towards goods, machinery, equipment, and technology; and appraising environmental damage and health, and other environmental protection services.

- Decision No. 1393/QD-TTg dated 25/9/2012 of Prime Minister approving National strategy on green growth. One of the implementation solutions for three strategic tasks<sup>6</sup> is to boost goods production and environmental services. Specifically:

- Making planning for the development of sectors, production activities and services of pollution prevention and control, restoring and improving the environment, creating more jobs in urban centers and rural areas.
- Implementing policies to transfer the majority of the production activities and environmental services from public and subsidized activities to the operation according to market principles in a dynamic and efficient manner.
- Encouraging localities to implement priority and supporting policies for green economic sectors to develop and integrate into development programs, hunger elimination and poverty reduction, as well as enhancing the quality of landscape and environment.

<sup>6</sup> 3 strategic tasks: (1) Reducing the intensity of greenhouse gas emissions and boosting the use of clean energy, renewable energy; (2) Production greening; and (3) Greening lifestyle and boosting sustainable consumption.

## **b) Existing inadequacy related to the development of environmental services and goods**

In Vietnam, the legal corridor promoting socialization of environmental protection needs to be completed. Currently, organizations and individuals have invested in many types of environmental protection services that have initially formed a system of non-public environmental services, including waste collection, transportation, and treatment, collection and transportation of hazardous solid waste, concentrated domestic wastewater treatment, and small-scale decentralized domestic wastewater treatment. Nevertheless, the mobilization of private investment in environmental services still has many limitations. For example, it has not specified the types of environmental services while there is no roadmap for such mobilization in Vietnam. It is said to be hard to attract both domestic and foreign investors to participate in the field of environmental services due to large initial investment capital, low recovery capital, and lack of specific mechanisms to support and encourage the involvement of private economic sectors.

Most of the enterprises providing environmental services are small and medium enterprises, so they may not have enough capacity to participate in solving the nation's major and urgent environmental issues. Meanwhile, there are currently no specific regulations to support the establishment of large-scale enterprises in the supply of environmental services.

New policies only focus on the promotion and support for the providers rather than the users of environmental services, which likely have not created the needed balance between supply and demand for environmental services in the market. Some legal documents related to the development of environmental services have not been promulgated, leading to less effective enforcement in the practice. For example, Clause 2, Article 150 of the LEP 2014 stipulates that the Minister of Natural Resources and Environment coordinates with Ministers, Heads of ministerial-level agencies to guide the implementation of regulations on the development of environmental services. Nevertheless, no specific guiding documents are released until now.

Moreover, in the context of global economic integration and trade liberalization, Vietnam has signed numerous new-generation free trade agreements such as CPTPP, EVFTA. Such FTAs also introduce new provisions on "environmental goods and services". Therefore, to promote the process of incorporation of international commitments into legal systems in Vietnam, it is necessary to add new provisions on the development of markets for environmental goods and services, particularly prescribing the principles of environmental goods and services market, policies on investment mechanisms, incentives and support for investment in specific environmental goods and services, and the role of the Government in the environmental services market. The country is expected to contribute to the sustainable development of the potential environmental goods and services market in Vietnam as well as encouraging all economic sectors to invest in the supply of environmental goods and services. However, the promulgation of the new provisions needs to be consistent with the FTAs signed by Vietnam.

## 1.11 Incentives and support for environmental protection activities

### a) Current legal framework on incentives and support for environmental protection activities

- Law on Environmental Protection No. 55/2014/QH14 regulates incentives and support for the following environmental protection activities<sup>7</sup>: construction of domestic wastewater treatment systems, construction of plants for recycling, treatment of conventional solid waste, hazardous waste, and waste landfill sites; construction of environmental monitoring stations; construction of environmental industrial bases, environmental protection works for the benefits of public interests; manufacturing and trading eco-friendly products; and transforming operations of industrial parks, industrial complex, and entities that cause serious pollution to the environment.

- Government's Decree No. 19/2015/ND-CP detailing the implementation of a number of articles of Law on Environmental Protection 2014 also provides detailed regulations on incentives and support for environmental protection activities; Principles of incentives and support (Article 37); Subjects entitled to incentives and support (Article 38); Incentives and support on infrastructure and land (Article 39, 40, 41); Incentives and support on capital and tax (Article 42, 43, 44, 45); Support on price and product consumption (Article 46, 47); and other incentives and support (Article 48, 49).

- Government's Decree No. 40/2019/ND-CP on amendments to decrees on guidelines for Law on Environment Protection. The Decree No. 40/2019/ND-CP amended Article 43 and Article 44 of the Decree No. 19/2015/ND-CP on preferential enterprises income tax and preferential import and export tax, respectively.

### b) Existing inadequacy related to incentives and support for environmental protection activities

Since the regulations on incentives and supports for environmental protection activities were not specific, their enforcement has not been effective. The existing incentives and supports have not been effective in attracting the participation of enterprises in the field of environmental protection. Also, the environmental protection industry is one of the few industries that may pose high risk factors for investors due to the large amount of invested capital combined with a slow rate of capital recovery. Moreover, the investors must comply with many strict regulations of the Government. Statistically speaking, workers in the field of environmental sanitation, scrap recycling are more exposed to high risks of occupational accidents and diseases. Many workers are often at risk of respiratory and skin diseases caused by exposure to hazardous wastes in a poor working environment.

<sup>7</sup> Article 151 of Law on Environmental Protection 2014

According to Decree No.19/2015/ND-CP, regulations on incentives and supports for investment activities and production of environmentally friendly products are mainly referred to as other laws and sub-laws. Such provisions have not been specified or lack the guiding documents. To illustrate, the MONRE has not issued detailed instructions on the List of environmentally friendly products to be certified by the Vietnam Green Label and the List of products from the recycling and treatment of waste certified by state authorities. The enterprises can only benefit from incentives and supports as long as their products are certified with Vietnam Green Label criteria. On the other hand, MONRE has just issued a few Vietnam Green Label criteria for specific types of products. This could make it difficult for many enterprises to approach the Government's incentives and supports.

## 1.12 Conclusion

In recent years, the legal system on environmental protection has been improved step-by-step to enhance environmental protection in economic activities. Many laws and sub-laws, namely the Law on Environment Protection, Law on Environmental Protection Tax prescribe market approaches and economic tools in environmental protection. The polluter pays principle and beneficiary pays principle has initially incorporated into relevant regulations. However, in practice, there are many shortcomings related to mechanisms for quantifying and accounting for environmental costs, especially the damage caused by the degradation of natural resources and environmental pollution. Economic tools have not been effectively adopted or applied to achieve environmental protection, while the existing economic tools have not been comprehensively evaluated for replication. As a result, such environmental protection mechanisms need to be improved in line with the transition to a circular economy in the coming years.

Mechanisms and policies on environmental protection are not fully consistent with the market economy institutions. To illustrate, environmental taxes and fees based on the polluter pay principle and the beneficiary pays principle have not been promoted as the economic tools that can regulate at a macro level to restrict activities that cause environmental damage. The existing regulations have not created a legal corridor nor favorable environment to encourage sustainable production and consumption. Moreover, regulations should support the development of environmental services, environmentally friendly products and goods, and help mobilize the involvement of stakeholders.

The Law on Environment Protection 2014 has not specified regulations on the application of taxes, fees, and other economic tools in environmental protection. In addition, the LEP 2014 does not clearly stipulate incentives and supports, for example, incentive policies and support for taxes, fees, loans, infrastructure for environmental protection activities, incentives, products and services, and green procurement.

## 2. Recommendation for appropriate policies and economic instruments to enhance the transition to circular economy

Vietnam has faced many obstacles in the transition from a linear economy to a circular economy. A number of solutions should be taken into account, specifically:

Firstly, it should build models of economic growth and development that effectively use materials, and apply scientific and technological innovations to industries, especially in the field of waste treatment to regenerate new materials.

Secondly, it should engage the communities in the transition to circular economy. The transition from a linear economy to circular economy requires changing the whole socioeconomic system, focusing on the roles of the Government and enterprises, namely mining and raw materials companies, processors, distribution, and retail companies.

Thirdly, it should create a clear legal corridor for the formation and development of circular economy models. Vietnam may develop its roadmap to circular economy based on the two popular existing CE approaches, including a whole systemic economy-wide approach and the approach through the re-design of selected sectors, products, and materials. Furthermore, the proposed roadmap should include other activities, such as encouraging renewable energy, promoting the use of eco-friendly products, and finalizing existing circular economy-related models.

To promote the circular economy, manufacturers need to clearly define what the top priority of their businesses is. Instead of making the product as quickly and as cheaply as possible, it should focus on the durability of the products and the sustainability of the manufacturing processes. Products need to be designed to be easily recyclable so that they can be recycled after use rather than going to landfills. In addition, enterprises should make efforts to develop environmentally friendly supply chains. In particular, one of the most difficult tasks in the transition to circular economy is to convince consumers to change their consumption habits.

The Law on Environmental Protection (LEP) 2014 is now being revised in accordance with the National Assembly's Resolution No.78/2019/QH14 dated June 11, 2019, on the Law and Ordinance Development Program 2020. The LEP revision requires comprehensive institutionalization of the Party and the Government's outlook on environmental protection and adaptation to climate change, in line with the reform of growth models towards green growth and circular economy. At the same time, the LEP revision requires synchronization with relevant legal systems such as legislation on investment, public investment, construction, water resources; completing economic instruments and financial mechanisms that are in line with market economy institutions to regulate environmentally friendly behaviors.



The revision aims to amend and supplement provisions on economic instruments and incentives for environmental protection, thus encouraging the development of clean and renewable energy, using natural resources effectively and sustainably, promoting ecological agriculture, promoting sustainable production and consumption, and promoting environmentally friendly lifestyle and behavior. It should be clarified in the LEP (revised) existing incentives already regulated in sub-law to classify environmental protection activities that are entitled to incentives or supports, add provisions on environmental protection tax, policies on green consumption, and draft preferential policies to support the production, distribution, and use of environmentally friendly products and services.

Some recommendations for amending and supplementing articles and clauses in the LEP (revised) to promote the implementation of circular economy principles in Vietnam, are as follows:

## **2.1 Environment protection tax**

### **a) Proposed solutions**

- Supplement provisions on environmental protection tax in the draft LEP (revised) to comply with the Law on Environmental Protection Tax;
- Regulate the purposes of the environmental protection tax, and tax bases;
- Add provisions in which revenues from environmental protection tax is prioritized for investment in environmental protection activities.
- Supplement provisions on the responsibilities of the Ministry of Natural Resources and Environment and the Ministry of Finance to issue the list of the taxable subject, tax calculation, tax bracket, tax rates, and to develop a roadmap for converting a number of charges into a waste tax that is suitable to the development of production technologies. Waste generated from production and business activities is measured to identify the tax rate.

### **b) Impact assessment of the proposed solutions**

Law on Environmental Protection (LEP) regulates the environmental protection activities in Vietnam. The inclusion of provisions on environmental protection tax in the LEP aims to create consistency between the current regulations on tax and regulations on environmental protection. As a result, it is proposed to include in the draft LEP (revised) the provisions on the taxable subject; tax calculation, tax bracket, tax rate; providing a framework for the comprehensive management of environmental protection tax in accordance with the current socio-economic development conditions. These proposed provisions are expected to be more comprehensive and appropriate than the Law on Environmental Protection Tax. The environmental protection tax subjects are defined as wastes generated from production, business, and service activities, and products and goods when used to cause environmental damage.



The introduction of provisions on environmental protection tax in the draft LEP (revised) could integrate key ideas of Vietnam Communist Party's Resolutions such as: Resolution No.41- NQ/TW dated 15/11/2004 of the Politburo on environmental protection in the period of accelerated national industrialization and modernization; Resolution No.24-NQ/TW dated 3/6/2013 of the Central Executive Committee on proactively responding to climate change, strengthening natural resource management and environmental protection; Conclusion No.02-KL/TW dated 26/4/2016 of the Central Executive Committee on the review of 10 years of implementation of Resolution 41-NQ/TW; Conclusion No.56-KL/TW dated 23/8/2019 of the Central Executive Committee on continuing to implement the Resolution on proactive response to climate change, strengthening natural resource management and environmental protection; Resolution No.07-NQ/TW dated 28/11/2016 of the Party Central Committee on guidelines and solutions to restructure the state budget and manage public debt to ensure a safe and sustainable national financial system.

According to current regulations, the production, business, and service establishments generating wastewater and exhaust gases must install monitoring systems that automatically transmit data to environmental state management agencies. Some means of transport, especially cars, are required to be registered annually so that it is feasible to calculate the vehicles' exhaust gas concentration at the time of registration to provide a basis for paying tax on waste. Therefore, it is possible to change some fees into taxes in line with the international commitment to reduce greenhouse gas emissions, especially for CO<sub>2</sub>.

Environmental protection tax is not a new economic instrument. This instrument has complied with the Party's policy where the establishment of environmental protection tax promotes businesses and consumer behavior change. Thanks to rapid technological development, the amount of wastewater and exhaust gas could be monitored and the data could be automatically transmitted to the assigned management agency to determine the environmental protection tax collected. In the short term, the provisions on environmental protection tax in the draft LEP (revised) will not affect production, business, and consumption. In the long term, when implementing a roadmap for converting fees into taxes in line with national socio-economic condition, it is likely to boost enterprises to apply technological innovation to become more sustainable.

## **2.2 Environmental protection fees**

### **a) Proposed solutions**

Supplement the provisions in the draft LEP (revised) on the roles and responsibilities of the Minister of Natural Resources and Environment, the Ministry of Finance, and the Provincial People's Committee to increase the effectiveness of the implementation of fees/charges.

## **b) Impact assessment of proposed solutions**

Currently, the environmental protection fee for wastewater is still applied to households. As for wastewater generated from production, business, and service activities, it is difficult to define the parameters to calculate the fees. The reason is that the regulations on the installation of automatic monitoring systems have not been strictly implemented while the infrastructures for data collection and processing are not synchronous. The same situation is also found in the case of exhaust gas, leading to difficulties in identifying emitters, the amount of exhaust gas, level of pollution, as well as the load capacity of the environment.

With the rapid development of automatic monitoring technologies, there has been new provisions on automatic monitoring systems and data transmission requirement to environmental state management agencies in the draft LEP (revised). Combined with the Government's policy on strengthening the audits process, the environmental protection fee is likely to be successful when put into practice.

Similar to environmental protection tax, environmental protection fee is not a new economic instrument in Vietnam. There is no overlap between environmental protection taxes and fees, so there is no additional burden on the private sector. The amendment and supplementation of provisions on environmental protection fees in the LEP (revised) do not change the current regulations on environmental protection fees in the legal system of fees such as Law on Tax Administration, Law on State Budget. Instead, the adoption of new regulations will further enhance the responsibility of state management agencies on environmental protection and strengthen coordination to improve the effectiveness of environmental protection fees. The environmental protection fees are identified based on the actual volume of waste generated and its toxicity level. This will ensure more fairness and transparency when paying such fees. If enterprises and consumers discharge more waste, they will pay more fees. This may encourage enterprises to apply more innovation to minimize waste, improve competitiveness, and increase financial resources for their environmental protection activities. The environmental protection fee rate will be made flexible so that agencies can adjust the fee rate under socio-economic conditions locally.

## **2.3 Environmental protection deposit**

### **a) Proposed solution**

- Regulate additional project groups that are subject to environmental rehabilitation and restoration deposit, including production of toxic chemicals, exploitation of water resources, solid waste treatment in the form of a sanitary landfill, except for projects funded by the State budget, and other projects causing soil contamination.
- Supplement provisions on responsibilities of organizations and individuals, principles for calculating the deposits, rights of organizations and individuals after fulfilling their responsibilities for environmental rehabilitation and restoration.

## **b) Impact assessment of proposed solutions**

Environmental protection deposit must be made before conducting activities that could cause environmental pollution. Such deposit will be refunded after the authorities assess and agree that those activities do not negatively affect the environment. In the case of environmental rehabilitation and restoration deposit, the manufacturer must pay an amount of money as a deposit in advance to the competent authority at the beginning of the project. This deposit will be refunded when the project ends and the site has been renovated as required. If the project owner does not fulfill their responsibilities for environmental protection, the deposit will be spent on environmental rehabilitation. This economic instrument will ensure that society will not have to suffer environmental consequences due to the failure of businesses to fulfill their environmental protection commitments.

The proposal to add more types of projects subject to environmental rehabilitation and restoration deposit in the draft LEP (revised) avoids missing out types of projects causing serious environmental pollution. Thus, the promulgation of these provisions could be appropriate, and may contribute to the implementation of the environmental protection goals, improve the efficiency and sustainability of resource use, and reduce the risk of environmental degradation. These regulations could help to eliminate projects or investors that are incapable of implementing the responsibility for environmental protection.

## **2.4 Payment for ecosystem services**

### **a) Proposed solution**

Propose supplement in the draft LEP (revised) provisions on payment for ecosystem services, especially important ecosystem services such as wetland, marine ecosystem, and rocky mountain ecosystem.

### **b) Impact assessment of proposed solutions**

The application of this proposed provision is feasible in practice. The payment for use of natural ecosystem resources will create stable resources for regulatory agencies to undertake appropriate activities to maintain, restore, and develop key ecosystem areas. Vietnam has adopted the policy of payment for forest environmental services that is highly feasible and have positive impacts. This could lay a basis for the expansion of payment for various types of ecosystem services in potential regions.

Payment for ecosystem services includes:

- (1) Payment or assistance for the provision of ecosystem services. These payments can occur in kind, cash and tax exemption.
- (2) Stakeholders involving in payment for ecosystem services: A seller is a person who creates ecosystem goods and services through the ecosystem management; and the buyer is the person who must pay for the benefits from the ecosystem goods and services.
- (3) Clearly defined ecosystem services; contract/commitment to maintain or change a specific method of use to ensure the committed service.

The nature of payment for ecosystem services is to provide an economic incentive to promote the effective and sustainable use of ecosystem services. It can be seen that the application of payment for forest environmental services in Vietnam has achieved good results, contributing to forest protection and stable living standards for communities. Therefore, the payment for ecosystem services in the draft LEP (revised) for other ecosystem services is a sustainable and feasible financial mechanism that is in line with the global trend (payment for ecosystem services is currently enforced in many countries and regions in the world). It is suggested to elaborate provisions on principles, providers, users, payment rates for ecosystem services. It is also necessary to carry out the pilot projects and build a roadmap for the application of payment for ecosystem services to other ecosystems such as rocky mountains and marine ecosystems.

Ultimately, it is crucial to implement the payment for ecosystem services because it helps to ensure fairness, creating resources for the rehabilitation and restoration of key ecosystems and natural landscapes. Revenue from payment for ecosystem services should be used for aides to those living in such key ecosystems and natural landscapes, for example, in hunger eradication and poverty reduction. The cost norm and payment method will be adjusted depending on the characteristics and economic conditions of each locality. The legalization of payment for ecosystem services is necessary and consistent with existing relevant regulations.

## **2.5 Liability insurance for environmental damages**

### **a) Proposed solution**

Supplement a provision regulating the buyer of liability insurance for damages caused by environmental incidents (This content is not included in LEP 2014).

## **b) Impact assessment of proposed solutions**

Provisions on liability insurance for environmental damages could contribute to reducing environmental risks by requiring enterprises that are likely to cause potential environmental damages to invest in risk reduction and pollution prevention.

The identification of buyers of liability insurance for damages caused by environmental incidents, however, is not stipulated in the LEP 2014 so that it is recommended to be introduced in the LEP (revised).

## **2.6 Green credit**

### **a) Proposed solution**

Develop new provisions on green credit in the draft LEP (revised). Create a legal basis to provide capital for projects that protect the environment and minimize environmental risks.

### **b) Impact assessment of proposed solutions**

The legal and institutional foundations for green credit and green banking have been formed. The State Bank has issued Directive 03/2015/CT-NHNN on promoting green credit and managing environmental and social risks in credit activities since 2015. In 2017, the State Bank issued Official Letter 9050 on Green Credit Statistics Report, creating a tool to monitor and regulate green credit sources. The proportion of green credit also increased from 1.5% to 4.6% of total outstanding loans in the national economy.

Green credit could create a potential market in mobilizing resources for environmental protection and climate change response. To reduce environmental risks from the loan process of projects, the promulgation of regulations on green credit is necessary and meaningful in both economic and social aspects.

## **2.7 Green Bonds**

### **a) Proposed solution**

Develop a new provision on green bonds in the draft LEP (revised).

## **b) Impact assessment of proposed solutions**

The green bond is considered as an economic instrument to promote development and investment in environmental protection activities of enterprises, such as efficient use of natural resources, protection of natural landscape, renewable energy development, and greenhouse gas reduction. Along with that, the regulations on green bonds allow the establishment of a financial channel for the Government to solve pressing and large-scale problems. The new provision on green bonds in the LEP (revised) would create a legal corridor for the establishment and development of a new financial market in Vietnam. This will likely create opportunities to promote investment in environmental protection activities and create green jobs.

The proposed provision in the LEP (revised) should be consistent with the Law on Public Debt Management. It also needs to clearly define a list of “green projects”.

## **2.8 Development of the environmental industry**

### **a) Proposed solution**

Supplement the provision on the responsibility of the Ministry of Planning and Investment, the Ministry of Industry and Trade, the Ministry of Natural Resources and Environment in the promulgation of the List of environmental industries. Create a legal corridor and mechanism to encourage the development of the environmental industry to produce and supply products for environmental protection.

### **b) Impact assessment of proposed solutions**

The development of the environmental industry helps strengthen the capabilities of domestic enterprises. It should create a legal corridor to promote the production and export of environmental protection products. The environmental industry is believed to be a considerable growing industry in the future, thus creating good income and green jobs for the national economy.

## **2.9 Development of environmental goods and services**

### **a) Proposed solution**

In the draft LEP (revised), the term “environmental goods” should be added to comply with the new-generation FTAs.

## **b) Impact assessment of the proposed solution**

Regulations on the development of the environmental goods and service market could create new markets, new trends, and new investment areas as well as equity for all economic sectors to invest in the provision, both domestically and internationally.

### **2.10 Development of natural capital**

#### **a) Proposed solutions**

Natural capital is one of the important terms in the Prime Minister's Decision No.1393/QD-TTg dated 25/9/2012 approving the National Green Growth Strategy, and Prime Minister's Decision No.622/QD-TTg dated 10/5/2017 on the promulgation of the National Action Plan to implement the Agenda 2030 for Sustainable Development. However, the term "natural capital" has not been officially mentioned in any legal documents. Therefore, a new provision on natural capital in the draft LEP (revised) should be developed.

#### **b) Impact assessment of proposed solutions**

Natural capital is the property of nature, along with social capital, human capital that creates essential services for socio-economic development and human life security. Natural capital includes biological and physical components of nature. It is also a key component of national resources and the foundation for socio-economic development as well as ensure environmental safety and security. On the international level, Vietnam has signed an agreement at the Rio 20 Summit that mentioned the requirement to perform natural capital accounting. Other countries also emphasized the importance of natural capital. For example, the United States considers natural capital and human resources as two basic components of the national economy so that it should invest in natural capital to improve the efficiency in the use of natural capital and ensure the competitiveness of its economy.

Developments and regulations are to be made on natural capital investment, principles of using and managing natural capital, and policies to promote investment in natural capital. These regulations are believed to contribute to promoting social resources to renovate, restore, and develop natural capital. These regulations will create new opportunities and approaches to investment in both public and private sectors to increase the contribution of natural capital to the economy, production, businesses, and service activities. At the same time, this will restore and rehabilitate degraded natural ecosystems. The provisions on natural capital in the LEP (revised) combined with other regulations on incentives for environmental protection, green credit, green bonds, payment for ecosystem services, certification of eco-friendly establishments, products and services, and public-private partnerships will consolidate the legal framework for environmental protection in Vietnam.

## REFERENCES

CCME, 2018. Strategy on zero plastic waste.

Cramer, J., 2014. Moving towards a circular economy in the Netherlands: challenges and directions. Utrecht University.

European Commission, 2019. Report From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Implementation of the Circular Economy Action Plan, COM (190 final, Brussels, Belgium).

Forum, T.W., 2012. The challenge of transposing WEEE II into national law.

Geissdoerfer, M., Savaget, P., Bocken, N.M.P., Hultink, E.J., 2017. The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production* 143, 757-768.

Geng, Y., Fu, J., Sarkis, J., Xue, B., 2012. Towards a national circular economy indicator system in China: an evaluation and critical analysis. *Journal of Cleaner Production* 23, 216-224.

Ghisellini, P., Cialani, C., Ulgiati, S., 2016. A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production* 114, 11-32. Government of Japan, 2010. Establishing a sound material-cycle society: Milestone toward a sound material- cycle society through changes in business and life styles, in: Ministry of the Environment (Ed.), Tokyo.

Kalmykova, Y., Sadagopan, M., Rosado, L., 2018a. Circular economy–From review of theories and practices to development of implementation tools. *Resources, Conservation Recycling* 135, 190-201.

Kalmykova, Y., Sadagopan, M., Rosado, L., 2018b. Circular economy – From review of theories and practices to development of implementation tools. *Resources, Conservation and Recycling* 135, 190-201.

Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling* 127, 221-232.

Korhonen, J., Nuur, C., Feldmann, A., Birkie, S.E., 2018. Circular economy as an essentially contested concept. *Journal of Cleaner Production* 175, 544-552.

Lah, O., 2016. Circular Economy Policies and Strategies of Germany, ERIA Research Project Report 2014- 44, Jakarta: ERIA, pp.59-74.



Merli, R., Preziosi, M., Acampora, A., 2018. How do scholars approach the circular economy? A systematic literature review. *Journal of Cleaner Production* 178, 703-722.

Momete, D.C., 2020. A unified framework for assessing the readiness of European Union economies to migrate to a circular modelling. *Science of The Total Environment* 718, 137375.

Moraga, G., Huysveld, S., Mathieux, F., Blengini, G.A., Alaerts, L., Van Acker, K., de Meester, S., Dewulf, J., 2019. Circular economy indicators: What do they measure? *Resources, Conservation and Recycling* 146, 452-461.

Nam, N.H., Hanh, N.T., 2019. Implementing Circular Economy: International Experience and Policy Implications for Vietnam. *VNU Journal of Science: Economics and Business* 35.

Nam, N.H., Hue, H.T., Phuong, N.T.B., 2019. The Circular Economy and the Inevitable Transition. *VNU Journal of Science: Policy and Management Studies* 35.

Panasonic, 2013. Our Approach to Resources Recycling.

Pearce, D.W., Turner, R.K., 1990. *Economics of Natural Resources and the Environment*. The John Hopkins University Press, Baltimore, Maryland, USA. p.25.

Potting, J., Hanemaaijer, A., Delahaye, R., Hoekstra, R., Ganzevles, J., Lijzen, J., 2018. Circular economy: what we want to know and can measure. Framework and baseline assessment for monitoring the progress of the circular economy in the Netherlands. PBL Netherlands Environmental Assessment Agency, The Hague.

Reike, D., Vermeulen, W.J., Witjes, S., 2018. The circular economy: New or refurbished as CE 3.0?— Exploring controversies in the conceptualization of the circular economy through a focus on history and resource value retention options. *Resources, Conservation and Recycling* 135, 246-264.





[www.switch-asia.eu](http://www.switch-asia.eu)



EUSWITCHAsia



SWITCHAsia