



Kingdom of the Netherlands



Accelerating Circular Economy for Business (ACE-Biz)

Project Number: 01000995

NARRATIVE REPORT



February 2025



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Abbreviations

CE	Circular Economy
DEESD	Department of Energy Efficiency and Sustainable Development
DIM	Direct Implementation Modality
DONRE	Department of Natural Resource and Environment
EPR	Extended Producer Responsibility
EEl	Ecology and Environment Institution
ESMP	Environmental and Social Management Plan
HCMC	Ho Chi Minh City
ICED	Institution of Circular Economy Development
IESE	Institute of Environmental Science and Engineering
INEST	Institution of Environmental Science and Technology
IP	Implementing Partner
ISEA	Industrial Safety Technique and Environment Agency
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
IZ	Industrial Zone
JSC.	Join Stock Company
LEP	Law on Environmental Protection
MARD	Ministry of Agriculture and Rural Development
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
NAP CE	National Action Plan on Circular Economy
SMEs	Small and Medium Enterprises
SCP	Sustainable Production and Consumption
PPC	Provincial People's Committee
UNDP	United Nations Development Program
UNIDO	United Nations for Industrial Development Organization
VPA	Viet Nam Plastic Association
WWF	World Wide Fund For Nature
WWTP	Waste Water Treatment Plan



I. Introduction

In 2024, the Vietnamese government has concretized the agenda for transformation agenda towards a circular economy (CE) by issuing a series of plans and regulations. The most notably is the National Action Plan for Circular Economy (NAP CE)¹, which was approved in January 2025, along with sectoral and provincial plans, such as the Ministry of Industry and Trade's Directive on promoting the implementation of CE in the industrial sector²; the Plan on "Development of science, application, and technology transfer to promote the CE in agriculture until 2030"³; and the Plan on "Developing the digital economy, sharing economy, and circular economy in Ho Chi Minh City for the period 2020-2025, with a vision to 2030."⁴. These plans all emphasize the common goal of encouraging the development of CE models and sustainable development across various sectors and regions. Additionally, they outline specific plans and roadmaps, from short-term to long-term, while also highlighting the need for cooperation between government agencies, businesses, research institutions, and development organizations to effectively implement the CE strategy.

Under the Portfolio on Circular Economy, Waste and Plastic, UNDP is implementing a number of projects which aim to develop and support both upstream and downstream interventions to accelerate circularity per sector: plastic, solid waste, wastewater, electronic waste, agriculture and chemicals. Specifically, [the Viet Nam Circular Economy Hub](#) (CE Hub), which are moderated by UNDP and the Ministry of Natural Resource and Environment (MONRE), plays the role as a platform to connect and share data on circular economy among stakeholders, as mentioned in NAP CE.

With supports from the Netherlands Embassy, the ACE-Biz project has been implemented since October 2023 to accelerate the transformation of businesses towards circularity, through formulating guidelines enhancing circularity, delivering capacity-building programs, and fostering technology transfer, and demonstrating the certification scheme to promote exchanges of secondary materials and reusable goods through an online marketplace.

The project will be implemented over a period of 2.5 years, with the following 03 outcomes:

Outcome 1: Technical guidelines facilitating recycling activities of enterprises, developed and endorsed

Outcome 2: Capacity of Vietnamese business to demonstrate green production and reduction of environmental pollution through circular economy, enhanced

Outcome 3: Knowledge Management, Monitoring and Evaluation

Almost all project's packages have been designed and commenced in 2024, including development of guidelines on industrial wastewater and eco-design, assessment of plastic scraps demand and develop a database on plastic materials of the value chain, engagement with industrial parks and enterprises to develop the pilot on wastewater reuse and design for the CE capacity building program for enterprises. This report provides updates of activities implemented and proposes changes in workplan for 2025.

¹ Decision 222/QĐ-TTg issued by the Prime Minister in January 2025

² Directive 12/CT-BCT issued by the Minister of MOIT in December 2024

³ Decision 4411/QĐ-BNN-KHCN issued by the Minister of MARD in December 2024

⁴ Plan 4330/KH-UBND issued by PPC of HCMC in July 2024

II. Activities Implemented and Results

II.1. Outcome 1: Technical Guidelines Facilitating Recycling Activities of Enterprises, Developed and Endorsed

a) Output 1.1: Technical guidelines and standards to reuse industrial water as input materials, developed

There is a gap between water supply and demand of approximately 40% by 2030⁵, in which municipal wastewater production across regions in 2015 is 380 billion cubic meters, and it jumps to 470 and 574 billion cubic meters, in 2030 and 2050, respectively. Water is integrated into the SDG6, which has an ambitious target to improve wastewater management and safe reuse. SDG6 requires circular solutions for wastewater sector. In Viet Nam, an expected national urbanization rate of 45% in 2025 and 50% in 2030, and industrialization following Resolution No. 23/NQ/TW, by 2030, the industrial sector will make up over 40% of GDP, are the key drivers of wastewater resource and reuse.

However, wastewater reuse in Viet Nam is facing a number of barriers and challenges, such as:

- Unclear responsibilities between central and local government bodies to implement schemes on wastewater reuse
- Lack of guidelines available towards businesses to understand the steps to adopt circular wastewater practices
- Insufficient data and information on wastewater production, collection, treatment and reuse
- Inadequate technological designs, which do not adequately consider both technically and economically feasible
- Dated wastewater treatment infrastructure and weak collection networks of wastewater
- Wastewater tariff and environment protection fee are mutually exclusive. The treatment prices are still low and managed by the local/provincial authorities.
- Weak monitoring of compliance, risks management
- Lack of adequate financing strategies for cost recovery of wastewater treatment services

Based on the findings mentioned above, a draft framework technical guideline has been developed and consulted with enterprises interested in wastewater reuse. From technical aspects, the guideline shall provide wastewater treatment technologies for reuse and cover all applications of wastewater reuse in areas of industries, agriculture and urban. From management aspects, the guideline also introduces regulations for managing wastewater reuse for various purposes, and procedure to plan and execute wastewater treatment and reuse projects, in which responsibility of related ministries (ie. MONRE, MARD, MOIT), local DONRE, owner of wastewater reuse projects (ie: management board of industrial park, industrial park investor, enterprise, shall be clarified.

The [draft framework of the technical guideline](#) has been developed and introduced at [the Consultation workshop on “Technical Guidelines and Partnerships to Accelerate Wastewater and Sludge Reuse, Resource Recovery”](#). As planned, the draft technical guideline on wastewater reuse will be consulted with enterprises and management agencies at central and local levels for finalization by end of Q3, 2025. Timeline to develop the technical guideline is presented in the **Annex 1** of this Report.

⁵ Wastewater Turning Problem to Solution, UNEP, 2023

b) *Output 1.2: Roadmap on eco-design including technical guidelines focusing on plastic packaging and products, developed*

While the circular economy focuses on the efficient use of resources and energy, aiming to prolong the "lifetime" of the product, eco-design focuses on reducing environmental impact throughout the product lifecycle from the design stage. Therefore, eco-design plays an important role in the process of implementing a circular economy, determining the ability to reuse, recycle and remanufacture the product.

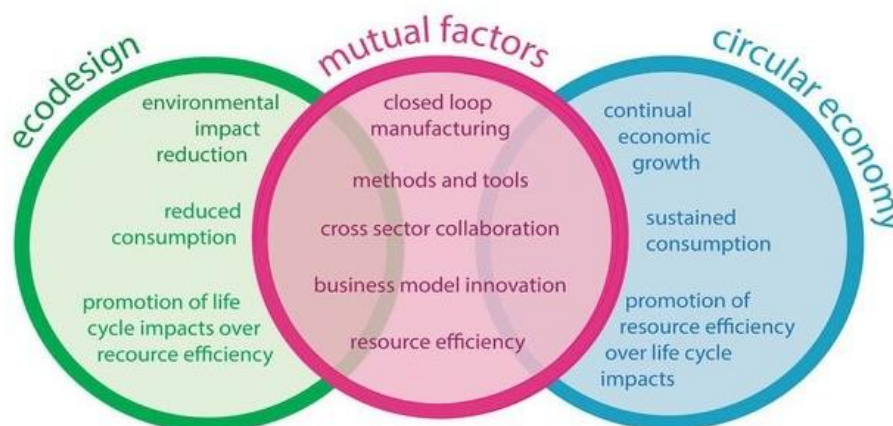


Figure 1. Relationship between eco-design and circular economy⁶

In Viet Nam, implementation of eco-design has been indicated in the NAP CE 2025 as a solution to promote the adoption of the circular economy in production, business, and consumption activities. This plan includes a proposal to develop a directive/decision by the Prime Minister on eco-design to meet the criteria of the circular economy. Besides, the enforcement of the Extended Producer Responsibility (EPR) regulation associates with the need to strengthen collecting and recycling products at the post-consumer stage. The National Action Programme on Sustainable Production and Consumption for the period 2021–2030 highlighted the need to develop regulations and technical standards on sustainable production, sustainable design, eco-design, and design for recycling and reuse across various industries. However, eco-design in Viet Nam currently lacks specific regulations and guidelines, for example, guidelines to design products that are easier to recycle and dispose, for potential sectors, such as plastic packaging, textile, electronics, etc.

Taking into consideration of the above gaps, the following guidelines and handbooks on eco-design, technical standard and roadmap on recycled contents in products will be developed:

- A guideline/manual on eco-design for business and policy makers to provide core concepts, benefits, regulations, case studies and initial recommendations
- A technical guideline on design for recycling for plastic packaging to facilitate reuse, recycling and promote circular economy for plastic industry.
- A technical standard and a phased roadmap to gradually increase the recycled content in plastic packaging products
- A handbook on good practices and sustainable models on SCP and CE in priority industries (plastics, packaging, food and beverage...)

⁶ https://www.researchgate.net/publication/301779162_Circular_Economy_Is_it_Enough



These guidelines are designed to bring tools and enhance capacity of business in prioritized sectors to develop and adopt their circular plans and business models. Engagements with industry leaders, interested enterprises and government management agencies, through technical meetings and surveys, will be organized to gather feedback and build consensus on the proposed roadmap, guidelines and technical standards. These guidelines and the handbook are subjected to be approved by MOIT and published by the Publishing House for Industry and Trade.

As discussed at the kick-off meeting between UNDP, DEESD, ICED and EEI, the timeline to develop the above-mentioned documents is from February to December 2025, in which technical meetings and a policy dialogue to assess the set-out priorities in supporting businesses for their transition, will be organized.

c) Output 1.3: Assessment of demand of plastic scraps in manufacturing and of constraints hindering the use of recycled plastic to support MOIT in implementing Decision 1316/2021/QĐ-TTg, conducted

Plastic industry in the period 2010 – 2023, is one of the industries with the highest growth in Viet Nam with an annual increase of 16% – 18% (only after the telecommunications and textile industries)⁷, there are fast products. Up to 2023, the whole plastic industry in Viet Nam consists of more than 4,000 companies stretching from the North to the South and mainly concentrated in Ho Chi Minh City (more than 84% in HCMC). Domestic companies accounted for 85%, foreign companies only accounted for 15% in number but accounted for 40% of investment capital⁸. Regarding the structure of plastic products, they can be divided into the following main product groups: packaging- PE, PP, PET (39%), household furniture- PP, PS, ABS (32%), construction- PE, PVC (14%), and technical/ engineering appliances- PVC, PP, PU (9%)^{9,10}.

Despite the development, Viet Nam's plastic industry is still mainly known as an economic and technical industry in plastic processing, while it is not fully active in the source of input materials when producing and lack of the supporting industry and a strong secondary market for recycled plastic.

In fact, comprehensive data on plastic materials following their value chain is not consolidated sufficiently, resulted in challenges for management agency to develop strategy for plastic industry and plastic waste management. In 2024, the Ministry of Natural Resource and Environment (MONRE) and the Viet Nam Plastic Association (VPA) have requested the project to support to develop a Study on plastic material flows in Viet Nam, which shall provide comprehensive database of plastic industry, from input materials to production, consumption, end of use, collection and treatment. Therefore, the following deliverables under this output are being developed:

- Assessment of plastic scraps demands:
 - o Updated dataset for domestic demanders for plastic scraps, recycled materials as feedstocks for production in the plastic industry (at least 400 entries).
 - o Projection of plastic scraps demand in manufacturing and imported plastic scraps with reference to Decision 13/2023/QĐ-TTg in order to fulfil the remaining needs, and of constraints hindering the use of recycled plastic.
- The Study on plastic material flows:

⁷ <https://vioit.org.vn/en/strategy-policy/overview-of-vietnam-s-plastic-industry--part-1--4796.4144.html>

⁸ <https://daiaiplastic.com/en/major-obstacles-to-the-sustainable-growth-of-vietnams-plastic-industry/>

⁹ <https://halana.vn/bai-viet/tong-quan-ve-thi-truong-nganh-cong-nghiep-nhua-tai-viet-nam>

¹⁰ <https://lienthuan.vn/nganh-nhua-viet-nam-va-xu-huong-phat-trien/>

- Methodology to estimate volume of plastic input materials, plastic products, plastic wastes from post industry and post-consumer, recycling rates of collected plastic wastes at end-of-life treatment.
- Comprehensive data on plastic material flows, including raw material data per polymer types, production and consumption data per product categories, waste generation and recycling data.
- Baseline, roadmaps and scenarios to reduce Viet Nam's dependence on imported sources, and promote the use of domestic sources for secondary plastic
- An Issue brief presenting key findings of the plastic material flows in Viet Nam, recommendations for plastic industry and plastic waste management

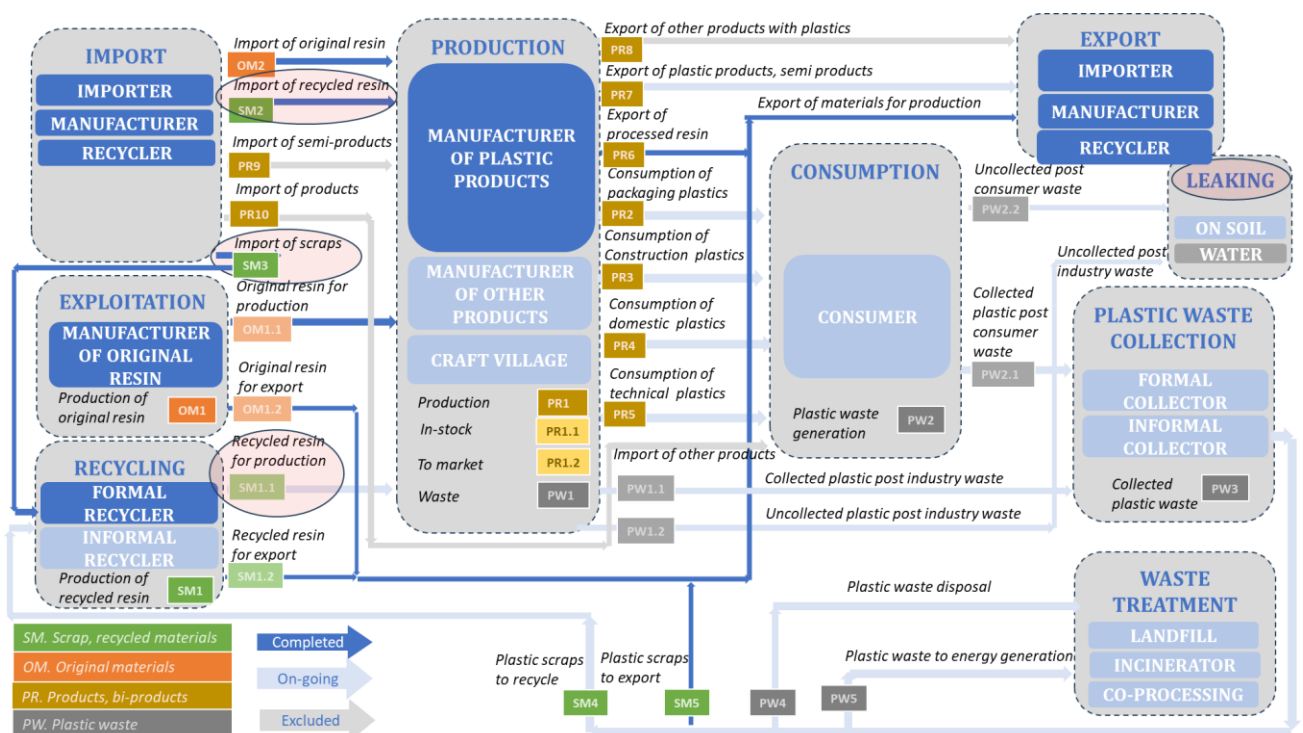


Figure 2. Plastic material flow in Viet Nam

By Dec. 2024, over **3,000 enterprises** have been contacted, of them 269 responded and 52 was interviewed. A database of 2000 manufacturers and recyclers has been developed with contact information, accounts and passwords and gradually filled up with activities data of import, production and export per material flows. Data on (1) import of original resin, recycled resin and scraps, (2) production of original resin as well as (3) export of processed resin, original resin, recycled resin and scraps have been finalized per plastic materials groups (PET, PP, PVC...) and verified by VPA and are updating to the online database (<https://www.phelieunhua.org/>). Currently, the database includes import export data of 2,396 enterprises (import - exporter, manufacturer and recyclers) along the value chain of the plastic sector.

As planned, data on domestic scraps will be verified through surveys at big plastic recyclers (ie Duy Tan Plastic Recycling, Vikohasan, etc.), then volume of plastic scraps for production will be projected with



expert method from VPA. In addition to this, production of plastic products as well as plastic waste flow will be conducted with formal sector.

II.2. Outcome 2: Capacity of Vietnamese Business to Demonstrate Green Production and Reduction of Environmental Pollution Through Circular Economy, Enhanced

a) Output 2.1: Circular training program targeting SMEs in prioritized sectors, designed, delivered and lessons learned collected and disseminated

Capacity building program on CE

Taking into consideration that enterprise is facing challenges on lack of motivation and difficulties on limited awareness and knowledge, insufficient training and expertise, clear guidelines, collaboration across supply chains, data availability and monitoring tools. Therefore, addressing these limitations may require coordinated efforts, including enhanced capacity building programs, development of regulations and technical guidelines/standard, and consumer awareness campaigns to foster a business environment that embraces SCP and circular practices more effectively.

Within ACE-Biz project, the Capacity building program on CE 2025 will be co-organized by the DEESD/MOIT and UNDP. The program's design comprises of the following activities:

- Design agenda and develop curriculum for the Capacity building program on CE and SCP, based on results of training needs assessment from business and stakeholders
- Co-host to organize training programs for groups of business, policy makers, local authorities and relevant stakeholders, on the interested topics such as international standards, tools for eco-design, how to develop and quantify effectiveness of models on CE and SCP, ESG, policy/regulations/technical guidelines, good practices and sustainable models, including:
 - Training courses for at least 100 enterprises from prioritized sectors (ie: plastic, food and beverage, textile, chemicals, etc.), including:
 - 01 basic training (at least 01 day/training, in Da Nang/Ho Chi Minh City) to deliver topics on principles of CE and SCP, updates on policy and regulations, eco-design, innovation, good practices and Resource Efficiency and Cleaner Production (RECP) models, ESG
 - 02 in-depth trainings (at least 01 day/training, in Da Nang/Ho Chi Minh City), focusing on CE interventions and SCP models in prioritized sector, tools for eco-design, tools to quantify effectiveness of such models on CE and SCP
 - 01 training course for 70 policy makers, local authorities, and stakeholders (01 day/training, face-to-face in Hanoi and online from other provinces/cities)
 - 01 Demo Day in hybrid mode in Ha Noi and technical working sessions to connect enterprises and policy makers, to enhance partnership among enterprises.

Regarding progress, this package is expected to be commenced by early March, in which the trainings courses are planned by end of Q2, 2025.

b) Output 2.2: Close-loop models for industrial wastewater facilitated and piloted

Within 2024, number of technical meetings and discussions have been organized with Nam Cau Kien IZ and experts to identify technology diagrams, which are suitable for the purposes of using treated wastewater, ie. for cooling tower, chiller, or boiler. Two pilot phases in total 12 months have been designed, treatment capacity of 24m³/day, combining Nano and RO filtration membrane systems. However, in October 2024, Nam Cau Kien IZ informed that they would like to withdraw from the project's pilot because they have changed business mindset, in which wastewater reuse is no-longer prioritized by the IP.

To select another demonstration site as a replacement, the project has met and discussed with other partners who already expressed their interest in wastewater reuse, such as DEEPC IP in Hai Phong City, Heineken in Tien Giang province, Thang Long IP in Ha Noi City and other development partners, ie UNIDO, WWF. DEEPC IP has expressed their willingness to become an eco-industrial park, in which wastewater reused is a must indicator. Therefore, the project has organized a site visit at the Waste Water Treatment Plan (WWTP) of DEEPC IP in Hai Phong:

- To explore current wastewater reuse practices/upcoming projects, including demand on wastewater reuse of DEEPC Industrial Zones in Hai Phong and Quang Ninh
- To initially identify wastewater treatment technology for reuse and discuss possibility of formulating a pilot on wastewater reuse within the framework of ACE-Biz project

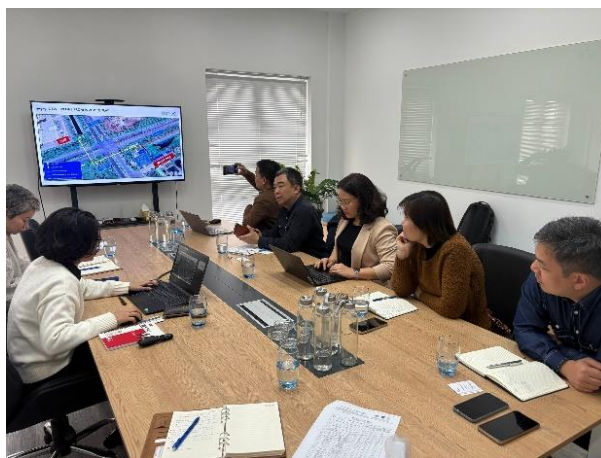


Figure 3. Meeting and Site visit at WWTP of DEEPC IP Hai Phong

The design capacity of the WWTP in DEEPC is 6,000 m³/day and current receiving volume of wastewater from Zone 1 and Zone 2 of the IP is 1,700 m³/day. Flat Co. Ltd, a glass production company located in DEEPC IP Hai Phong, is a potential receiver of treated wastewater from the WWTP, for cleaning purpose during production. Currently, the demand of Flat company is roughly 2,700 m³/day.

Based on data collected from DEEPC and field visits results, 04 scenarios on technology diagram have been identified for the pilot as below.

- Diagram 1: Sand filtration + Activated carbon filtration + NF filtration + RO filtration
- Diagram 2: Sand filtration + Activated carbon filtration + Softening + RO filtration
- Diagram 3: Sand filtration + NF filtration + RO filtration for testing NX filtration
- Diagram 4: 2-stage RO filtration to increase recovery rate and save energy

The expand of 04 pilot scenarios shall provide more viable options in term of cost and benefit analysis, for a full-scale investment for wastewater reuse. Details of these technology diagrams are presented in the **Annex 2** of this Report. The pilot design is presented here: [ACE-Biz Wastewater pilot design.pptx](#)

Responsibilities of each team, including (i) IESE (the project's service provider of RO filtration system), NXF (the project's service provider of Nano filtration system) and (iii) DEEPC IP (the project's partner), have been identified, following the pilot' procedure:

- Installation of the wastewater treatment system for reuse, following technology diagrams presented in the Annex 2, including import, customs clearance, transportation, installation, dismantling of the two filtration systems
- System Operation during the pilot, including trainings on operation and maintenance, test run and hand over of the Nano and RO systems to DEEPC, daily operation recording, coordinate for troubleshooting
- Sampling and sample analysis following identified sampling points and parameters; collect operation and maintenance data; data processing; prepare a summary report
- Data collection in the DEEPC IP, develop the feasibility study for a wastewater treatment and reuse system with a capacity of 1,000 – 1,800 m³/day
- Develop technical guideline and advocate policy to support wastewater reuse

The project bears the cost to purchase the RO filtration system equipment and hire the Nano filtration system equipment, during the pilot. While DEEPC IP shall cover the operation cost (operating workers, electricity) and cost for sample analysis. Detailed responsibility of service providers and DEEPC IP is described in the Annex 3 of this Report. A Memorandum of Agreement is being drafted to provide role of each party and detailed activities to be implemented during the pilot.

II.3 Outcome 3: Knowledge management and dissemination

a) Output 3.2: Knowledge management and dissemination

Consultation workshop on “Technical Guidelines and Partnerships to Accelerate Wastewater and Sludge Reuse, Resource Recovery”

Held on December 11, 2024, this workshop brought together over 74 participants (43% female), representing government agencies (MONRE, MOIT, and DONREs), industrial park management boards, enterprises, international organizations, and service providers of water and wastewater treatment solutions and equipment. The workshop focused on sharing Vietnamese and international best practices for industrial wastewater reuse and other applications, with the goals of fostering collaborations for pilot projects within the ACE-Biz project and establishing a network to support future circular economy initiatives. The workshop also sought stakeholder input on the draft technical guidelines framework for wastewater reuse to ensure its practical applicability.

At the workshop, participants raised multiple challenges in wastewater reuse, on regulatory and legal barriers, technological and infrastructure gaps, market and policy incentives, which were highlighted below:

- Unclear Regulations: While Decree 08:2022/BTNMT allows wastewater reuse, detailed technical guidelines are lacking, causing confusion.

- **Complex Licensing Process:** Enterprises must adjust their Environmental Permit (EP) when transferring treated wastewater for reuse, which is time-consuming and labor-intensive.
- **Lack of Reuse Pipeline Infrastructure:** Enterprises must invest in separate pipelines, as the treated wastewater cannot be mixed with the regular water supply system. In industrial parks, the entity investing in infrastructure often differs from the one operating wastewater treatment plants, creating contractual and regulatory complications.
- **Inconsistent Water Quality Needs:** Different industrial park tenants have varied water quality requirements, making it difficult to standardize treatment processes.
- **High Initial Investment:** The cost of wastewater treatment and reuse infrastructure is significant, discouraging businesses from adopting reuse practices. Advanced technologies like RO filtration provide good quality but are often too expensive for widespread use.
- **Hidden Costs and Risks:** Water scarcity and supply disruptions could lead to future economic losses, but businesses often do not factor these into decision-making.

Future opportunities for wastewater reuse were also discussed by identification of concrete actions, for example:

- **Integration with Circular Economy:** Industrial parks can use treated wastewater for road cleaning, irrigation, and cooling systems if permitted.
- **Need for Clear Guidelines:** More specific standards and regulations will help industrial parks and businesses scale up wastewater reuse.

Therefore, a key outcome of the workshop was the significant interest and valuable feedback received on the draft outline for the wastewater reuse guideline. This feedback directly informed the refinement and finalization of the guideline's outline on wastewater reuse, ensuring it effectively and sufficiently address the practical needs of businesses, managers, and other stakeholders.



Figure 4. The difficulties in reusing wastewater and sludge of delegates participating the workshop

Furthermore, the workshop generated considerable momentum for the wastewater reuse pilot. Several potential enterprises and partners, including Viglacera Corporation, Thang Long 2 Industrial Park, DEEP C Industrial Park, VSIP Industrial Park, Heineken Vietnam Company, and My Tho Industrial Park, expressed strong interest in participating.

Following the workshop, UNDP, IESE, and NX Filtration conducted interviews and on-site assessments, ultimately selecting DEEP C IP in Hai Phong (as detailed in the previous section). To maximize knowledge sharing and learning, [recordings and materials](#) from the workshop were distributed to all participants.



Figure 5. Participants of the technical workshop on wastewater reuse

National CE Forum 2024

The project strategically leveraged the National Circular Economy Forum 2024, “From Planning to Action”, to present innovative solutions and practices in sectors to implement CE and highlight role of private sector to implement CE.

This high-profile event, with its broad stakeholder engagement, provided an ideal platform to disseminate circular economy principles to a wider audience. The project's participation resulted in engaging 204 stakeholders (51% female) from diverse sectors, including policymakers, businesses, development partners, NGOs, and academia.

Critically, the forum's agenda included a dedicated session on Sustainable Production & Consumption, featuring presentations and discussions focused on wastewater reuse and a thematic discussion on circular design for plastic packaging. This strategic engagement significantly advanced the project's objectives by raising awareness and fostering dialogue on key circular economy themes relevant to businesses and policymakers.



Figure 6. Opening remark by Ms. Ramla Khalidi, Resident Representative, UNDP in the National CE Forum 2024

Promoting the Viet Nam Circular Economy Hub

The project supported MONRE in revising the National Action Plan on Circular Economy, following feedback from the Government Office to sharpen strategic tasks and solutions for a circular transition. This resulted in the government's January 2024 approval of Decision No. 222/QĐ-TTg, the National Action Plan for Circular Economy Implementation until 2035. Critically, the plan mandates research and development of a circular economy network to facilitate information sharing and knowledge exchange on circular economy models. This directly supports the mission of the CE Hub, a platform hosted by ISPONRE and UNDP in Viet Nam since 2022.

In 2024, the CE Hub significantly advanced circular economy implementation by hosting 12 events (webinars, workshops, training sessions, policy dialogues, and forums) covering key topics related to accelerating the circular economy, waste management, and resource efficiency. These activities leveraged synergies with other UNDP circular economy projects, including ACE-Biz, to maximize impact through joint efforts. These events attracted a total of 1,069 participants (49% female), as detailed in the Table 1. Notably, to further support the development of a secondary material marketplace and the pilot of wastewater reuse models, the CE Hub disseminated key resources and insights gleaned from the event on its website, facilitating learning and accelerated take-up of the project's case studies.



Table 1. Events organized by the CE Hub in 2024

No	Type	Name	No. participants	Male	Female	Number of Businesses
1	Webinar	Boosting NDCs' Ambitions Through Circularity in the Agricultural Sectors – Introducing the CE Toolbox	95	50	45	11
2	Workshop	Consultation Workshop on marketplace for secondary materials	68	43	25	17
3	Webinar	Bioplastics - A solution to plastic pollution?	141	47	94	71
4	Training	Training on circular economy in the coffee value chain	85	44	41	3
5	Matchmaking	PREVENT Matchmaking Session: Connecting stakeholders in Viet Nam's plastic and textile recycling value chains through digital solutions	32	14	18	9
6	Webinar	Fostering Innovation: Addressing Plastic Pollution to Propel the Blue Economy in Viet Nam	99	63	36	15
7	Policy dialogue	Promoting international cooperation and multi-sectoral coordination for circular agriculture	111	47	61	20
8	Training	Training on circular economy in the rice value chain	67	46	21	-
9	Workshop	Technical discussion: Pathway for Platforms Accelerating Trade in Plastic and Textile Secondary Materials	40	19	21	18
10	Workshop	Consultation Workshop on CE models in coffee and rice	53	29	23	6
11	Conference	Viet Nam Circular Economy Forum 2024	204	100	104	77
12	Workshop	Technical guidelines and partnerships to accelerate wastewater and sludge reuse, resource recovery	74	42	32	20
Total			1069	544	521	267

In 2024, the CE Hub curated and updated a number of showcases, studies, research, policy library and shared to the community as a learning hub on circular economy. By the end of December 2024, the CE Hub website attracted 4,500 page views per month on average. Moreover, [Quarterly newsletters](#) have been developed and sent to the CE Hub's network members.

Development and dissemination of project materials in a gender-sensitive way

A set of visual guidelines and template, covering the use of graphic elements, photography and filming, illustrations and icons, and data visualization and infographics for all projects associated with the CE Hub has been developed. In the process of developing project products, the guidelines will help regulate the



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use of language and images, avoiding gendered assumptions and stereotypical portrayals. During dissemination, we also ensure that both men and women have equal opportunities to receive the information.

Regarding the project's communication products, the following communication materials have been identified to develop:

- A Working Paper on material flow analysis in plastic sector, demand of plastic scraps for domestic manufacturing and demand of plastic scraps imported for Viet Nam
- A policy brief on Industrial wastewater reuse - a close the loop model: a showcase under ACE-Biz project
- A policy brief to provide recommendations on roadmap to promote eco-design in prioritized sectors/products
- Lessons Learned/Guidance Note on "Driving the Adoption of Circular Practices among Vietnamese businesses"
- A set of communication visuals to promote the circular economy training program for businesses and attract participants, including a key visual adapted to 2 photos used for social posts on Facebook and LinkedIn to generate interest from businesses, event materials (1 backdrop & 1 standee for use during the training).
- 02 videos, approximately 3 - 5 minutes long, one to summarize the main activities and content of the circular economy training program, and the other to highlight a pilot model of industrial wastewater reuse

III. Project Logical Framework

Table 2. The Project Outputs, Indicators and Results Achieved

EXPECTED OUTPUTS	OUTPUT INDICATORS[1]	RESULTS BY DEC.24	DESCRIPTION OF ACTIVITIES
COMPONENT 1: TECHNICAL GUIDELINES FACILITATING RECYCLING ACTIVITIES OF ENTERPRISES, DEVELOPED AND ENDORSED			
<i>Output 1.1: Technical guidelines and standards to reduce and reuse industrial water as input materials, developed</i>	# of technical guidelines and standards on reuse of industrial wastewater developed # of stakeholders from industrial sector and government consulted (disaggregated by gender and sector)	Result partly achieved (to be continued in 2025): 01 outline of technical guideline for wastewater reuse developed 74 representatives from IPs, enterprises, governmental agencies including MOIT, MONRE, DONRE and NGOs with a 44/56 women /men ratio consulted	The draft outline of technical guideline for wastewater reuse was developed and consulted with stakeholders by survey questionnaire - The Consultation Workshop "Technical Guidelines and Partnerships to Accelerate Wastewater and Sludge Reuse, Resource Recovery" organized on December 11, 2024 https://vietnamcirculareconomy.vn/technical-guidelines-and-partnerships-to-accelerate-wastewater-and-sludge-reuse/?lang=en



<i>Output 1.2: Roadmap on eco-design including technical guidelines focusing on plastic packaging and products, developed</i>	• # of guideline to enhance the circularity for plastic packaging products in the food and packaging sector, developed • # of roadmap for using recycled content in products (eco-design) drafted	Result partly achieved (to be continued in 2025): The following guidelines are under development process: • A guideline/manual on eco-design for business and policy maker to provide core concepts, benefits, regulations, case studies and initial recommendations • A technical guideline on design for recycling for plastic packaging to facilitate reuse, recycling and promote circular economy for plastic industry. • A technical standard and a phased roadmap to gradually increase the recycled content in plastic packaging products • A handbook on good practices and sustainable models on SCP and CE in priority industries (plastics, packaging, food and beverage...)	• An outline of the guideline on eco-design for business and policy maker, has been developed. • An outline of the technical guideline on design for recycling for plastic packaging to facilitate reuse, recycling and promote circular economy for plastic industry, has been developed.
<i>Output 1.3: Assessment of demand of secondary plastic in manufacturing and constraints hindering the use of recycled plastic to support MOIT in implementing Decision 1316/2021, conducted</i>	• Availability of an assessment report on regulatory framework (considering gender issues) and standards related to the use of recycled plastic • 01 roadmap to reduce Viet Nam dependence on imported plastic sources	Result partly achieved (to be continued in 2025): • One assessment report on regulatory framework (considering gender issues) and standards related to the use of recycled plastic is drafted • A draft roadmap to reduce Viet Nam dependence on imported plastic sources and to promote domestic sources of plastic materials is draft • A new added report as per requested by MONRE and VPA: A study on plastic material flow provide database on volume of plastic materials, plastic products, and plastic wastes, per type of polymers, following the sector value chain	• 3000 enterprises have been surveyed, of them 269 responded and 52 was interviewed • An online database for plastic material flow has been developed: https://www.phelieunhua.org/. Currently it includes import export data of 2,396 enterprises in plastic sector. • Detailed flow of Plastic material flows in Viet Nam has been developed. • Data on (1) import of original resin, recycled resin and scraps, (2) production of original resin as well as (3) export of processed resin, original resin, recycled resin and scraps have been finalized per plastic materials groups (PET, PP, PVC...)



COMPONENT 2: CAPACITY OF VIETNAMESE BUSINESS TO DEMONSTRATE GREEN PRODUCTION AND REDUCTION OF ENVIRONMENTAL POLLUTION THROUGH CIRCULAR ECONOMY, ENHANCED

<i>Output 2.1: Circular training program targeting SMEs in prioritized sectors, designed, delivered and lessons learned collected and disseminated</i>	• # of workers and managers trained by sector and gender on circular economy programs • # of investable business plans developed through training/support • # of jobs supported. Measure 1) employees of supported company at inception and 2) employees of supported company at end of project	The Capacity building program for enterprises on CE and SCP is planned to be organized in 2025, with the following activities: • Training courses for at least 100 enterprises from prioritized sectors (ie: plastic, food and beverage, textile, chemicals, etc.), including: ▪ 01 basic training (at least 01 day/training, in Da Nang/Ho Chi Minh City) ▪ 02 in-depth trainings (at least 01 day/training, in Da Nang/Ho Chi Minh City), focusing on CE interventions and SCP models in prioritized sector, tools for eco-design, tools to quantify effectiveness of such models on CE and SCP • 01 training course for 70 policy makers, local authorities, and stakeholders (01 day/training, face-to-face in Hanoi and online from other provinces/cities) • 01 Demo Day in hybrid mode in Ha Noi and technical working sessions to connect enterprises and policy makers, to enhance partnership among enterprises.	• Capacity building program on CE 2025 will be co-organized by the DEESD/MOIT and UNDP, in which EEI and ICED will provide expertise and logistic service needed. • Experts from Saxion University will support to develop the training agenda and deliver lectures during the training.
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<i>Output 2.2: Close-loop models for industrial wastewater in DEEPC Hai Phong Industrial Park, facilitated and piloted.</i>	• Volume of industrial wastewater treated for reuse • # of workers and managers trained and / or received advisory on industrial wastewater reuse by sector and gender	• The pilot site has been changed due to the withdraw of Nam Cau Kien IP after all setting requirements, including pilot technology diagram and infrastructure, have been identified and agreed among parties. • By end of December, the project has conducted 02 technical meetings with DEEPC Hai Phong IP and 02 technical meetings with Heineken Viet Nam to discuss their demand on wastewater reuse and cooperation potentials. • In order to identify the most viable solution for reuse, in term of technical and financial aspects, more technology scenario will be developed and included in the feasibility study.	• Institute of Environmental Science and Engineering is the project's consulting firm to provide RO filtration membrane system and develop the feasibility study for the pilot. • The service provider of Nano filtration system is NXF. • Infrastructure for the pilot, including available land for installation of equipment system and operation costs, will be provided by the selected IP. • Milestones to kick-off the pilot, operation training, monitoring campaign are included in the pilot plan, which will be agreed by all parties.
<i>Output 2.3: Strengthening the current market-place tools for recycled material to further enhance circular economy opportunities</i>	• Guidance on the quality and social / environmental certification of plastic scraps and recycled and reusable textile sold through web-based marketplace	• This output was not implemented in 2024. The plan is to develop tools/guidelines on quality of recycled materials to be exchanged through current market place, to enhance transparency, traceability of these materials.	• UNDP has conducted a baseline report to inform the design of marketplaces. • UNDP is providing support with a mentoring program and piloting with three marketplaces (GRAC, Flowwaste, and Reverse Resources) targeting plastic and textile waste.
COMPONENT 3. KNOWLEDGE MANAGEMENT, MONITORING AND EVALUATION			
<i>Output 3.1: Project inception, monitoring and evaluation.</i>	• # of monitoring and evaluation project reports delivered by type of report	Result partly achieved (to be continued in 2025): • One Annual project workplan and procurement plan 2024 • One Project's inception report • A draft project's ESMP • The project report on Social and Environmental Screening with updates of the wastewater reuse pilot site	• The project implemented SES Audit Site Visit in June 2024



<i>Output 3.2: Knowledge management and dissemination</i>	• # of people disaggregated by gender and type of communication media reached and increasing their knowledge about circular economy • # of people visiting the project website and leaving feedback	Result partly achieved (to be continued in 2025): • 1,741 people (52% women/48% men) reached and increasing their knowledge about circular economy as of 2024. • 23,460 people have visited the project website and 80% interacting (viewing another page)	• In 2024, CE Hub conducted 12 events (webinars, workshops, training sessions, policy dialogues, and forums) covering key topics related to accelerating the circular economy, waste management, and resource efficiency. These events attracted a total of 1,069 participants (49% female). • Notably, the events included a National CE Forum (204 participants, 51% female) and a workshop on wastewater and sludge reuse (74 participants, 43%) • https://vietnamcirculareconomy.vn/viet-nam-circular-economy-forum-2024/?lang=en • https://vietnamcirculareconomy.vn/technical-guidelines-and-partnerships-to-accelerate-wastewater-and-sludge-reuse/?lang=en
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IV. Project Disbursement in 2024

	(in United States dollars)		
	Prior years (1)	2024 (2)	Cumulative to 2024 (3)
Income/Revenue			
Annual Contributions Revenue ^a	210,192.35	456,645.23	666,837.58
Other Revenue ^b	-	-	-
Transfer to/from other funds	-	-	-
Refunds to donors	-	-	-
Total - Income/Revenue	210,192.35	456,645.23	666,837.58
Expenses			
Staff and other personnel costs	-	3,994.85	3,994.85
Supplies, commodities, materials	-	-	-
Equipment, vehicle and furniture including depreciation	-	-	-
Contractual services	-	52,828.55	52,828.55
Travel	-	2,706.83	2,706.83
Transfers and grants to counterparts	-	-	-
General operating and other direct costs	333.63	14,535.15	14,868.78
Subtotal	333.63	74,065.38	74,399.01
Programme support costs ^c	26.70	5,135.88	5,162.58
Total Expenses	360.33	79,201.26	79,561.59
Balance^d	209,832.02	587,275.99	587,275.99
Future Expenses^e			
Balance of un-depreciated assets & inventory purchased	-	-	-
Commitments	156,653.73	297,509.83	297,509.83
Subtotal	156,653.73	297,509.83	297,509.83
Receivables Past due, less advance receipts^e			
Less: Contributions receivable from donors	-	-	-
Available Resources^f	53,178.29	289,766.16	289,766.16
Total Contributions Revenue^g	895,920.43	(18,017.33)	877,903.10
Total Contributions Revenue Received^h	210,192.35	456,645.23	666,837.58
Total Receivablesⁱ	685,728.08	211,065.52	211,065.52
Deferred Revenue and Advance Receipts^j	-	-	-

V. Annual Work Plan 2025

Table 3. Project Annual Work Plan 2025

No.	Packages	Type of contract	Procurement & Contract award	Implementation timeline 2025				Stakeholders
				Q1	Q2	Q3	Q4	
1	Development of technical guidelines on eco-design and agenda for circular economy training program for enterprises	International Firm	done					Saxion UAS
2	Development of a close-the-loop model to reuse industrial wastewater in industrial parks	Consulting Firm	done					IESE
3	Develop guidelines, standards and business models on Sustainable Production and Consumption and Circular Economy	Consulting Firm	done					EEI & ICED
4	Development of branding, video production and design services for communications activities	Consulting Firm	done					RIO JSC.
5	Support the development of secondary material marketplace and eco-design, advancing CE in industry	IC	done					ISPONRE
6	Assessment the demand of plastic scraps for domestic manufacturing and demand of plastic scraps imported for Viet Nam	Consulting Firm	done					EPRO
7	Study on plastic material flows in Viet Nam, by type of input plastic materials and distribution by products	Consulting Firm	done					VPA
8	National Consultant to develop Environmental and Social Management Plan (ESMP)	IC	done					Mr. Ngo Huy Toan
9	Capacity building program on Circular Economy and Sustainable Consumption and Production for business and stakeholders	Consulting Firm	On-going					
10	Support the development of CE standards in Viet Nam, following ISO 59010 and ISO 59020	IC	Q2/2025					
11	Implementation of NAP CE 2025 priorities on capacity building, guidelines for CE implementation	IC	Q2/2025					
12	Development of a certification scheme of quality recyclable materials in plastic and textile	IC	Q3/2025					
13	International expert for quality control of technical guidelines, CE capacity building and knowledge documents	IC	Q1/2025					
14	Study tour (in coordination with Saxion UAS) on adoption of CE interventions, and with Netherlands enterprises on wastewater treatment, textiles and plastic.		Q2/Q3 2025					

VI. Review and Update Risk Log

Table 4. Updated Risk Log

Event	Cause	Impact(s)	Risk Category and Sub-category	Impact, Likelihood & Risk Level	Risk Valid From/To	Risk Owner	Risk Treatment & Treatment Owner
There's a risk that the high cost of technology for treating industrial wastewater will make it difficult to replicate this model in other industrial zones or enterprises.	Industrial wastewater is a mixed of high contaminants, which may adhere to filtration membrane surface, thus reducing membrane efficiency, increasing energy consumption, and necessitating more frequent and intensive cleaning or, in some cases, complete replacement. Besides, the treatment technology applied within this project is required with a combination of nano and RO filtration membrane systems.	The cumulative effect of these factors significantly inflates the overall costs of maintenance and replacement, potentially limiting the feasibility of replicating this model in other industrial zones and enterprises.	1. SOCIAL AND ENVIRONMENTAL (1.11. Pollution prevention and resource efficiency) - UNDP Risk Appetite: CAUTIOUS	Likelihood: 3 - Moderately likely Impact: 2 - Minor Risk level: LOW (equates to a risk appetite of CAUTIOUS)	From: 01-Jan-24 To: 31-Dec-25	Mr. Vu Thai Truong, Head of CCE Unit	Risk Treatment 1.1: Comprehensive Wastewater Analysis: Conduct a thorough analysis of the wastewater composition to choose appropriate nanofiltration membranes based on the characteristics of the wastewater. Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP Risk Treatment 1.2: Advanced Monitoring and Data Analytics: Use advanced monitoring and data analytics tools to track membrane performance and predict maintenance needs. Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP Risk Treatment 1.3: Sitting of filtration membrane systems: the system should be installed at the end of the wastewater treatment system where most of the pollutants are removed. This could improve the membrane efficiency and prolong the filtration membrane system.

								Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP
There's a risk that the project will have imbalance d gender participati on among NCK tenants, governme ntal agencies in consultatio ns activities, trainings and pilot, due to low awareness of gender sensitivity among responsibl e parties (NCK IZ, DEESD, ISEA)	As a result of perpetual gender gaps and absence of visible female role models in industries like wastewater treatment and manufacturing, NCK IZ, DEESD, ISEA may not fully understand the concept of gender mainstreaming or its importance and not be aware of the benefits it can bring in terms of better policy outcomes and social equality.	Limited gender equality and inclusion might result in not inclusive and ineffectiveness of regulations, strategies and development plans of relevant sectors: circular economy, sustainable consumption and production,, wastewater management, plastic, textile.	1. SOCIAL AND ENVIRONMENT AL (1.2. Gender equality and women's empowerment) - UNDP Risk Appetite: CAUTIOUS	Likelihood: 3 - Moderately likely Impact: 2 - Minor Risk level: LOW (equates to a risk appetite of CAUTIOUS)	From: 01-Oct-23 To: 31-Dec-25	Mr. Vu Thai Truong, Head of CCE Unit	Risk Treatment 2.1: Training and awareness building: UNDP will integrate in trainings and awareness-raising programs to understand the specific sensitivities related to women workers and promote gender inclusion during policy advocacy. Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP Risk Treatment 2.2: Promote gender balance in project activities: The Project plans to organize a series of training and will promote the participation of women in these trainings. Local women unions also will be invited to have more encouragement. Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP	
There's a risk that workers in	When a new technology, especially a complex one, is introduced, workers may not	Workers may suffer from accidents and physical injuries,	1. SOCIAL AND ENVIRONMENT AL (1.10.	Likelihood: 2 - Low likelihood	From: 01-Apr-25	Mr. Vu Thai Truong,	Risk Treatment 3.1: EHS training: Comprehensive training will be provided, by the project with participation of experts, to workers on the nature of	

the wastewater treatment facilities will suffer from Environmental, Health and Safety (EHS) risk.	be familiar with its operation, maintenance, and potential hazards.	which could lead to work disruption and affect productivity of the entire operation.	Labour and working conditions) - UNDP Risk Appetite: CAUTIOUS	Impact: 2 - Minor Risk level: LOW (equates to a risk appetite of CAUTIOUS)	To: 31-Dec-25	Head of CCE Unit	the materials they will handle, potential hazards, proper safety procedures, and standard operating procedures for safe handling. Risk Treatment Owner: Hoang Thi Dieu Linh, UNDP Programme Officer Risk Treatment 3.2: Personal Protective Equipment (PPE): Workers will be ensured to have access to and use appropriate personal protective equipment such as gloves, masks, goggles, and protective clothing. Risk Treatment Owner: Ms. Hoang Thi Dieu Linh, UNDP Programme Officer, UNDP Risk Treatment 3.3: Regulation Improvement: Safety procedures will be included in the standard operating procedures (SOPs) of the wastewater treatment system of the IPs. Risk Treatment Owner: Hoang Thi Dieu Linh, UNDP Programme Officer Risk Treatment 3.4: Incident response drills: participated IPs will conduct environmental Incident response drills periodically. Risk Treatment Owner: Ms. Hoang Thi Dieu Linh, UNDP Programme Officer, UNDP
There's a risk that private sector will not be interested in participati	Insufficient awareness from private sector, especially small and medium enterprises. Additional procedures, meaning additional work to private sector when	Low participation from private sector leads to slow down the pilot activity and missed out business opportunities with environmentally conscious consumers	1. SOCIAL AND ENVIRONMENTAL (1.12. Stakeholder engagement) - UNDP Risk Appetite: CAUTIOUS	Likelihood: 3 - Moderately likely Impact: 3 - Intermediate	From: 01-Jan-24 To: 31-Dec-25	Mr. Vu Thai Truong, Head of CCE Unit Analyst	Risk Treatment 4.1: Stakeholder engagement: The project will engage and consult with online marketplace owners, operators and vendors, during the formulation of guidelines for certification to gain insight into their concerns and challenges regarding the adoption of certification schemes and SES compliance procedures. Green or Eco Industrial Parks which have financial capable and been pioneering in



Kingdom of the Netherlands



ng/being engaged in pilot program for plastic and textile marketplaces.	participating in the new platform.	that prioritize sustainable sourcing and production.		Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)			the sustainability development or environmental protection will be targeted. Risk Treatment Owner: Mr. Hoang Thanh Vinh, Programme Analyst, UNDP
Relevant governmental bodies might not collaborate smoothly in the development of technical guidelines facilitating recycling activities.	This can happen as a result of overlapping in mandates of relevant ministries, especially between MONRE and MOIT when coming to responsibility for standard and technical regulations on recycled wastewater and design of products.	Delays in the project's implementation. When governmental bodies fail to collaborate effectively, decision-making can slow down, leading to holdups in the development and implementation of technical guidelines.	7. STRATEGIC (7.3. Stakeholder relations and partnerships) - UNDP Risk Appetite: OPEN TO SEEKING	Likelihood: 3 - Moderately likely Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 01-Jan-24 To: 31-Dec-25	Mr. Vu Thai Truong, Head of CCE Unit	Risk Treatment 4.2: Visibility incentives: As an incentive for online marketplaces that embrace the certification scheme, the project will offer enhanced visibility within CE Hub's network. This increased visibility can further encourage marketplace owners to participate and promote SES compliance. Risk Treatment Owner: Hoang Thanh Vinh, Programme Analyst, UNDP
							Risk Treatment 5.1: Regular Coordination Meetings: Schedule regular coordination meetings or working groups where representatives from each body can discuss progress, challenges, and solutions. Risk Treatment Owner: Ms. Hoang Thi Dieu Linh, UNDP Programme Officer, UNDP



VII. Gender

The Gender marker rating of this project: ☐ GEN-3; ☒ GEN-2; ☐ GEN-1

Implementation		
1	Whether this project directly, or indirectly resulted / would result in the promotion of gender equality, such as promoting women's advancement, strengthening women's decision-making role, assisting women with caring responsibilities in taking care of her families etc.?	- The project is designed to benefit and support women in many different ways. It includes support, training, as well as informal waste sector research and survey that addressed the social exclusion and environmental health and risk issues than often come with the work of women in plastic value chains. - Besides, recognition of gender differences will be integrated in development of technical guidelines such as the guidelines on to reuse industrial wastewater as input materials.
2	Whether part of the resources has been allocated in a manner that intentionally, or unintentionally addressed/ would address the identified needs of women and men?	- Part of the project's resources has been allocated intentionally to address the identified needs of workers, both woman and man, in the following sector: (i) the value chain of plastic material flow, especially the informal sector to collect and recycle plastic wastes after end of use. (ii) Demand of enterprises on wastewater reuse (iii) The needs on capacity building and awareness building, the needs on livelihood improvements, during implementation of capacity building program on CE and SCP References: - Survey questionnaire survey on plastic material flow - Survey questionnaire regarding enterprise's wastewater demand
3	Have women and men been equally involved in programme/project activities? Please indicate the representation rate of women in each activity of the programme /projects; and also briefly explain if the project is taking measures to increase women participation.	While the project encourages equal participation from women and men, the gender ratio varies across different activities due to their varying target audiences. For example: - The CE Forum 2024: 51% female / 49% male



		- The consultation workshop on wastewater reuse: 43% female / 57% male - CE Hub knowledge-sharing activities: 49% female / 51% male
Human Resources		
4	Has gender expertise/knowledge been included in TORs for projects' consultancies, reviews, procurements, consultancy teams, etc.?	Yes. Including the TOR on "Assessment of plastic scraps demand for domestic manufacturing and demand of plastic scraps imported for Viet Nam" .
5	Have all project staff (incl. project manager) responsible for the different stages of work (design, implementation, monitoring and evaluation) been briefed or given training on gender issues?	Yes. All project staff have been briefed on gender issues during design and implementation of project activities, through direct consultations with gender officers, CO's trainings on gender responsive budgeting.
Monitoring & Evaluation		
6	Have gender-disaggregated data and indicators (qualitative or quantitative) been collected or compiled to monitor the process and outcome of this project?	Yes. By number of participants joining the project's activities and surveys.
7	Have relevant gender issues been raised at project meetings, ensuring discussion of the impact of the project on gender equality in the country?	Not yet. Because the nature of the project is to support enterprises to accelerate circular economy. Based on the survey results of the "Assessment of plastic scraps demand for domestic manufacturing and demand of plastic scraps imported for Viet Nam", both women and man, take part in the plastic value chain. No significant gender issues during the survey have been observed.
Communication		
8	Are both women and men represented and visible in the communication products? Are gender stereotypes avoided (avoid portraying childbearing as the sole responsibilities of mother), and women's needs are reflected, and voice supported?	We are developing a set of visual guidelines and template, covering the use of graphic elements, photography and filming, illustrations and icons, and data visualization and infographics for all projects associated with the CE Hub. This guideline will ensure that figures in communication materials are carefully chosen to ensure gender balance, with both genders well-represented. Project publications all feature images of both women and men or maintain gender neutrality.



VIII. Media exposure

#	Details of communications activities	Date	External link (if applicable)
1	Viet Nam Circular Economy Forum 2024: From Plan to Action	12/10/2024	https://en.monre.gov.vn/circular-economy-development-from-plan-to-action-8701.htm
2	ASEAN Viet Nam Information Portal	12/10/2024	https://aseanvietnam.vn/en/post/promoting-the-circular-economy-in-vietnam-from-plan-to-action
3	From Planning to Action	12/10/2024	https://www.undp.org/vietnam/blog/planning-action
4	Viet Nam Circular Economy Forum 2024	12/10/2024	https://www.youtube.com/watch?v=XtQei3qeBkE
5	Technical guidelines and partnerships to accelerate wastewater and sludge reuse, resource, recovery	12/11/2024	https://vietnamcirculareconomy.vn/technical-guidelines-and-partnerships-to-accelerate-wastewater-and-sludge-reuse/?lang=en https://www.facebook.com/undpvietnam/posts/english-below-tham-gia-h%E1%BB%99i-th%E1%BA%A3o-h%C6%B0%E1%BB%9Bng-d%E1%BA%ABn-k%E1%BB%B9-thu%E1%BA%ADt-v%C3%A0-h%E1%BB%A3p-t%C3%A1c-%C4%91a-b%C3%AAn-nh%E1%BA%B1m-th%C3%BAc-%C4%91/894749996167481/
6	Advancing circular economy in Viet Nam's industrial parks for sustainable development	12/04/2024	https://vietnamcirculareconomy.vn/advancing-circular-economy-in-vietnams-industrial-parks-for-sustainable-development/?lang=en
7	CE Hub Quarterly Newsletter	Quarterly	https://vietnamcirculareconomy.vn/en/newsletters/?lang=en



IX. Knowledge Products

#	Title	Type	Target audience	Status
1	Study on Plastic material flows	<i>Study</i>	Policy makers	<i>Achieved</i>
2	Report of consultation workshop on Technical guidelines and Partnership to accelerate wastewater and sludge reuse, resource recovery	<i>Report</i>	Policy makers, IZ investors and manufacturers	<i>Achieved</i>
3	A platform to collect data on the the demand and market for plastic scrap (https://www.phelieunhua.org/)	<i>Platform</i>	Manufacturers, recyclers	<i>On going</i>
4	The draft outline of technical guideline for wastewater reuse	<i>Technical guideline</i>	Policy makers, IZ investors and manufacturers	<i>On going</i>
5	CE Hub visual guideline	<i>Guideline</i>	Project team	<i>On going</i>
6	A Working Paper on material flow analysis in plastic sector, demand of plastic scraps for domestic manufacturing and demand of plastic scraps imported for Viet Nam	<i>Report</i>	Policy makers, manufacturers, associations, waste service provider	<i>On going</i>



X. Annexes

Annex 1. Timeline for preparation of the Wastewater reuse guideline

No	Activity/ Content	2025: March	April	May	June	July	August	September	Remark
1	Compiling the Guidelines component: 1.4 Motivation for reuse: Benefits and Costs of wastewater reuse.								
2	Compiling the Guidelines component: 2.1. Regulations and standards related to wastewater reuse in Vietnam 2.2. Challenges in wastewater reuse business and management.								
3	Compiling the Guidelines component: 3.1. Planning, management and environment considerations 3.2. Feeding wastewater and treatment targets 3.3. Technology selections 3.4. Sizing and equipment selection 3.5. Technical indicators estimation (energy, chemical and materials consumptions)								
4	Compiling the Guidelines component: Chapter 4. Reuse of industrial wastewater: selected applications 4.1 Cooling towers 4.2 Boiler water makeup 4.3 Irrigation and cleaning 4.4 High-technology water reuse								
5	Compiling the Guidelines component: 2.3. Recommendations on a roadmap of wastewater reuse business and management 2.4. Legal process for wastewater business: transfer of reuse wastewater. 2.5. Risk management in wastewater reuse. 2.6. Monitoring and evaluation: involved stakeholders.								
6	Compiling the Guidelines component: Chapter 1. Introduction 1.1 Objectives of the Guidelines 1.2 How to use these Guidelines 1.3 Guidelines terminology								



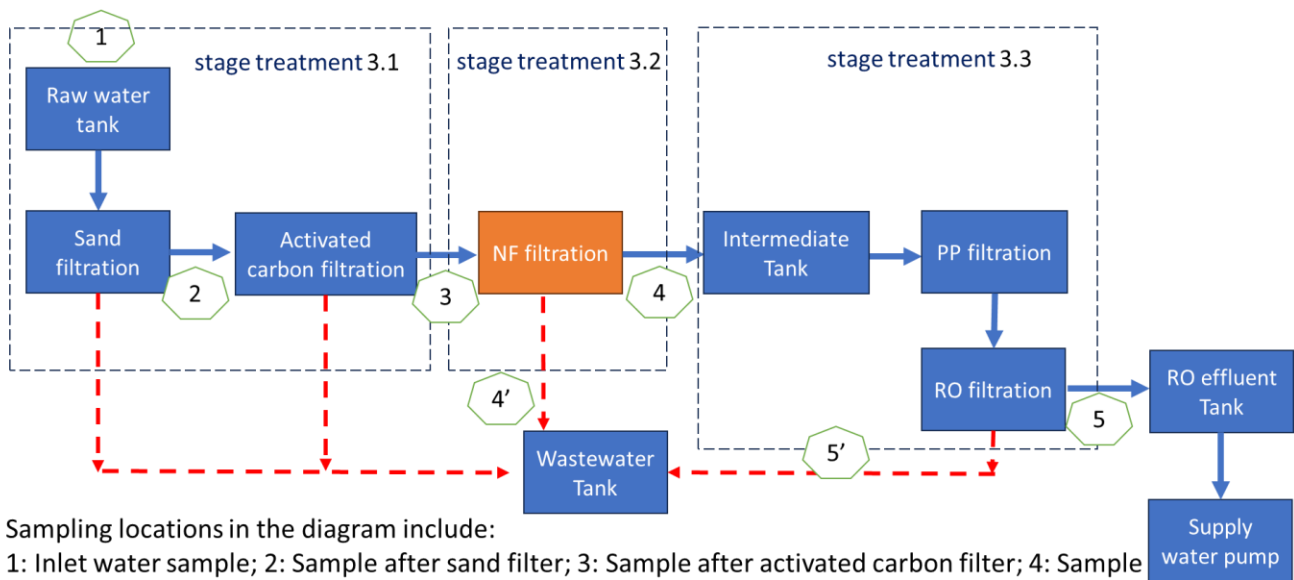
Kingdom of the Netherlands



No	Activity/ Content	2025: March	April	May	June	July	August	September	Remark
7	Compiling the Guidelines component: Overview and summary Conclusions and recommendations								
8	Consultation: workshop and materials sending out for feedback								
9	Finalization and dissemination								

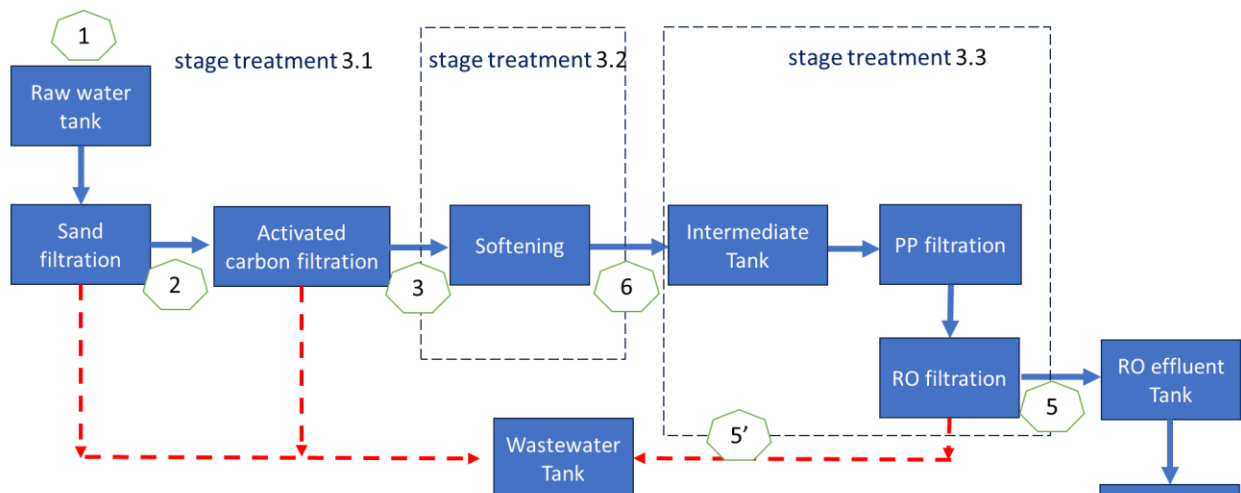
Annex 2. Technology Scenarios designed for the Wastewater reuse pilot in DEEPC IP Hai Phong

Diagram 1: Sand filtration + Activated carbon filtration + NF filtration + RO filtration



1: Inlet water sample; 2: Sample after sand filter; 3: Sample after activated carbon filter; 4: Sample after NF filter; 5: Sample after RO filter; 4': NF waste stream sample; 5': RO waste stream sample

Diagram 2: Sand filtration + Activated carbon filtration + Softening + RO filtration



Sampling locations in the diagram include:

1: Inlet water sample; 2: Sample after sand filter; 3: Sample after activated carbon filter; 5: Sample after RO filter; 5': RO waste stream sample; 6: Sample after Softening

Diagram 3: sand filtration + NF filtration + RO filtration for testing NX filtration

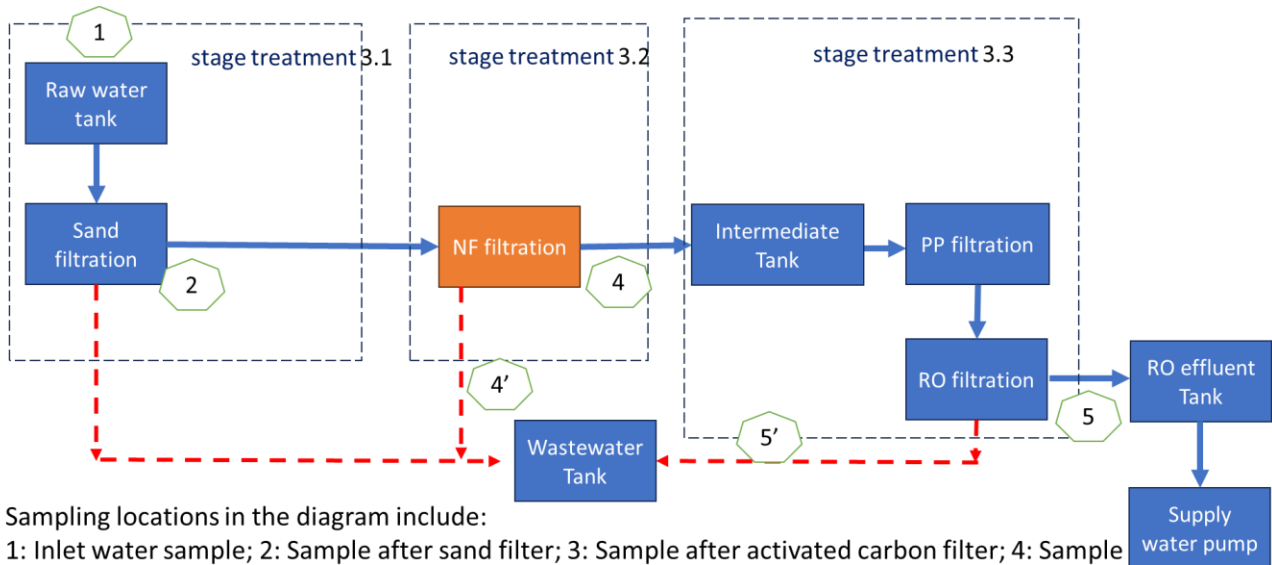
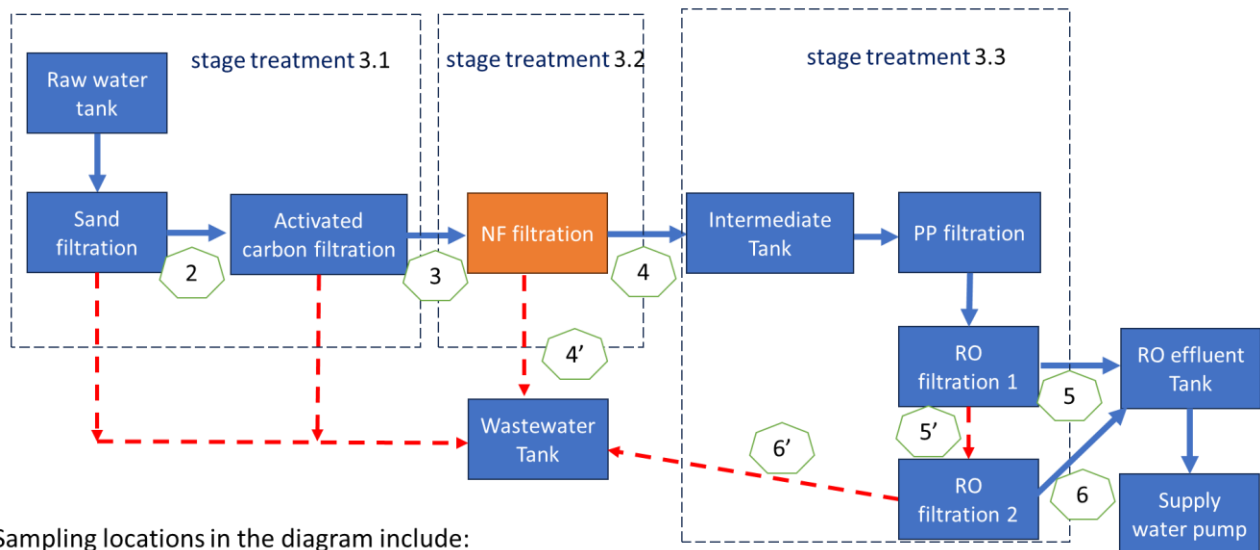


Diagram 4: 2-stage RO filtration to increase recovery rate and save energy





Annex 3. List of tasks for responsible parties to implement the pilot

1. The List of IESE's Work

- Conduct field surveys and collect necessary information
- Provide water treatment equipment (except nano filter and activated carbon filter)
- Provide technical information on the equipment
- Coordinate installation and support installation
- Guide to system operation and maintenance
- Test run and handover
- Coordinate with DEEPC IP to survey actual water use and demand for recycled water at DEEP C Industrial Park; process data; report preparation
- Develop plans and technological diagrams for treatment and reuse for purposes
- Prepare FS report: water treatment and reuse system with a capacity of 1.000 -1.800 m3/day
- Develop technical guideline for wastewater reuse and propose and recommend appropriate policies

2. The List of NX Company's Work

- Provide nano filtration system and filter equipment, post-filter water tank, and electric meter to determine electricity consumption of NX system
- Provide technical information about the equipment set
- Coordinate installation, support installation
- Operation and maintenance instructions

3. The List of DEEPC's Work

- Provide location, installation surface
- Provide operating floor, cover system, roof
- Provide 3-phase power supply, power cable to installation location; electrical cabinet (On, Off, measure power consumption)
- Arrange water tank and pipeline network to connect for reuse purposes
- Coordinate, and support during installation; grasp the system operation principles
- Operate the system (including electricity, chemical, labor costs...)
- Take samples and analyze (send samples, receive results, pay, send results to IESE and related parties)
- Deep C coordinates with NX, and UNDP to receive financial support, do procedures to temporarily re-export equipment