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Assessing the Necessity of Integrating Remanufactured Goods Provisions in Regional Trade Agreements: Considerations and Implications for Thailand

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Abstract

The world is moving towards a circular economy to achieve sustainable development. This model offers substantial environmental benefits while also generating economic opportunities for communities worldwide. Remanufacturing plays a pivotal role in realising the circular economy's potential by restoring used goods or cores to like-new condition. However, international trade in remanufactured goods often faces barriers in many economies, as they are typically classified as used goods.

The objective of this study is to examine and analyse the necessity of incorporating provisions, including measures or regulatory requirements, for remanufactured goods within Free Trade Agreement (FTAs) in the context of Thailand.

Key words

Sustainability, circular economy, green customs, remanufactured goods, import restrictions or bans, Free Trade Agreement (FTAs), trade in remanufactured goods, market access, rules of origin, wholly obtained articles, treatment of recovered materials, regulatory requirements for remanufacturing.

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Introduction

Given the utmost importance of environmental issues and sustainability, the global trend has shifted from the “Take-Make-Waste” linear economy to the circular economy.¹ The latter envisages a sustainable production and consumption model where goods or materials are reused, repaired, remanufactured, or recycled to maximise their economic value. The expansion of the life cycle of goods helps eliminate waste and pollution. Additionally, when more specialised work is required for circular activities, it can enhance competitiveness and foster economic growth.

This concept is relevant on three different levels: international, regional, and national.

At the international level, the United Nations (UN) established the 17 Sustainable Development Goals (SDGs) in 2015 to call for action in various aspects for a better world. The circular economy is recognised as a practical tool for achieving several SDGs, such as SDG 9 (Industry, Innovation and Infrastructure) and SDG 12 (Responsible Consumption and Production etc.²).

Within the Customs domain, “Green Customs” has been a priority for the World Customs Organization (WCO) to ensure that Customs activities or WCO tools and instruments contribute to the global green economy and achieve sustainable development goals.³ The circular economy is highlighted for its impact on traditional trade flows and its potential effects on the roles of Customs in border control.⁴ One of the challenges is the effective implementation of international agreements, including Multilateral Environmental Agreements (MEAs) and Regional Trade Agreements (RTAs)/Free Trade Agreements (FTAs) related to trading in circular economy goods and environmental issues.⁵ For remanufactured goods, which are a type of circular product, certain RTAs include provisions to facilitate their free movement between trading partners by preventing them from being treated as used goods subject to import restrictions. In this context, strong national environmental policies and a robust regulatory framework are needed for effective implementation among all stakeholders.

At the regional level, the Association of Southeast Asian Nations (ASEAN)⁶ adopted the Framework for Circular Economy for the ASEAN Economic Community (AEC) in October 2021. The framework provides guiding principles, strategic priorities, and possible initiatives to accelerate the adoption of a circular economy in ASEAN.⁷ Two strategies concerning circular products were prioritised to ensure smooth transitioning to a circular economy in the region: the first is the standard harmonisation and mutual recognition of circular products and services, and the second is trade facilitation in circular goods and services.

At the national level in Thailand, environmental policies are designed within the long-term national strategy, master plan and action plan to achieve sustainable development in various respects. However, the policy for remanufactured goods is not explicitly prescribed. When provisions for

¹ WCO, Study Report - Transition to a Circular Economy and Implications for Customs Administration (2023) 6

² Netherlands Enterprise Agency, Circular Economy & SDGs (2020)

³ WCO, Strategic Plan 2022-2025

⁴ WCO, Summary Report - Green Customs Global Conference (2022) 10

⁵ WCO, Study Report - Transition to a Circular Economy and Implications for Customs Administration (2023) 7

⁶ ASEAN has ten Member States: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

⁷ ASEAN, Framework for Circular Economy for the ASEAN Economic Community 4

remanufactured goods are proposed in trade negotiations, they lead to divergent views among concerned authorities. On one hand, these provisions could significantly contribute to environmental benefits, on the other hand, many concerns are raised, such as the standards for control, protection of local consumers, or the potential for waste-related crime.

In this study, we aim to examine the need for provisions on remanufactured goods under RTAs in the context of Thailand. This will be achieved through a structured approach involving document reviews of remanufactured goods provisions in existing FTAs of other countries, case studies from experienced nations, and analysis specific to Thailand.

The study is organised into three main sections. The first section will focus on Thailand's circular economy policies and its national circumstances related to remanufacturing, including current MEAs and RTAs/ FTAs involving Thailand.

The second section will review the scope of remanufactured goods under existing RTAs, comparing text provisions, examining case studies that highlight implementation practices in experienced countries, and exploring how the Harmonized System (HS) can facilitate trade in remanufactured goods.

Finally, the last section will analyse the necessity and implications of including provisions for remanufactured goods in Thailand's context, considering the findings from the document review and case studies.

This structured approach aims to provide a comprehensive understanding of the issues surrounding remanufactured goods provisions under RTAs, particularly focusing on their relevance and potential impact within Thailand's trade framework.

I. State of play in Thailand

1. Circular economy policy in Thailand

The circular economy concept has been integrated into three different dimensions of Thailand's policy.

First, this concept aligns with the National Strategy (2018-2037), specifically the Strategy for Eco-Friendly Development and Growth, which aims to achieve sustainability in health, society, economy, and environment.⁸

Secondly, the circular economy was explicitly referred to in the 13th National Economic and Social Development Plan (2023-2027) as Milestone No. 10 "Thailand is a Circular Economy and Low Carbon Society". The national-level plan elaborates on the target, direction, and strategy to enhance efficiency in manufacturing and services based on the circular economy. The aim is to reduce, reuse, recycle and minimise waste from production processes.⁹

Thirdly, the Bio-Circular-Green Economy (BCG) Action Plan 2021-2027 was established to serve as a framework for relevant agencies to implement the National Strategy.¹⁰

In this context, the circular economy was introduced to enhance the sustainable competitiveness of Thai BCG industries and build a new economy through recycling and upcycling. This includes promoting investment opportunities in the circular economy, supporting research, technology, and innovation for goods and services derived from recycling and upcycling, developing management systems to support the circular economy, and raising public awareness of sustainable production and consumption.

This policy establishment illustrates that Thailand is in transition to a circular economy. At this initial stage, many aspects need to be synchronised, such as strong cooperation and collaboration between government agencies to move forward in the same direction, effective enforcement of laws and regulations in alignment with long-term and short-term plans, financial support or incentives for circular activities, particularly in small and medium-sized enterprises (SMEs), and consumer awareness, which can potentially impact the market.¹¹

2. What could be considered as remanufactured goods?

Remanufacturing is a crucial element for implementing a circular economy. In general, it involves returning used goods to a like-new state with their original performance specifications, maximizing the use of materials and resources. This circular process entails restoring the core of used products by disassembling, cleaning, inspecting, replacing, and testing components.¹² Typically, this remanufacturing activity has been applied to complex industrial products.

⁸ Office of the National Economic and Social Development Board, National Strategy 2018-2037 (Summary) 17

⁹ Office of the National Economic and Social Development Board, Thirteenth National Economic and Social Development Plan (2023-2027) 97

¹⁰ National Science and Technology Development Agency, Bio-Circular-Green Economy Action Plan 2021 – 2027 (Summary) 2

¹¹ Ministry of Industry, Framework for Developing Thai Industries with Circular Economy (2020) 17-18

¹² USITC, Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade (2012) ch 1, 7

A study by the European Remanufacturing Network (ERN) revealed the major remanufacturing sectors in Europe, which include aerospace, automotive, heavy-duty and off-road (HDOR) equipment, Electric and Electronic Equipment (EEE), machinery, and medical equipment.¹³ The remanufacturing process results in reduced materials and energy consumption, benefiting both the environment and the economy. Customers can obtain lower-priced products with the same quality as new goods, and economic growth is supported through the creation of skilled jobs and specialised businesses.¹⁴

Currently, there is no common definition for remanufactured goods, as it can vary depending on countries, industrial sectors, and contexts. For example, the United States Trade Representative (USTR) defines the term for the purpose of a remanufactured goods study as *“non-agricultural goods that are entirely or partially comprised of parts that (i) have been obtained from the disassembly of used goods; and (ii) have been processed, cleaned, inspected, and tested to the extent necessary to ensure they have been restored to original working condition or better; and for which the remanufacturer has issued a warranty.”*¹⁵

The FTA between the European Union (EU) and Vietnam stipulates in Article 2.3 Definitions that *“(k) ‘remanufactured good’ means a good classified in HS Chapter 84, 85, 87, 90 or heading 94.02, except those listed in Appendix 2-A-5 (Goods Excluded from the Definition of Remanufactured Goods), which: (i) is entirely or partially comprised of parts obtained from goods that have been used beforehand; and (ii) has similar performance and working conditions as well as life expectancy compared to the original new good and is given the same warranty as the original new good.”*

This definition limits the scope to specific chapters of the Harmonized System (HS) and excludes certain lists of goods. These elements depend on the result of negotiations, which vary from agreement to agreement. In terms of implementing RTA provisions regarding remanufactured goods, the definition and scope need to be clear and well-understood by relevant private sectors and government officials, particularly Customs authorities.

3. National circumstances in relation to remanufacturing

While Thailand has emphasised the concept of the circular economy at various levels of national strategy and planning, a clear policy on remanufactured goods has not been established. Regarding investment promotions for circular activities, the Board of Investment of Thailand (BOI) provides incentives for companies manufacturing recycled products or products made from recycled materials.¹⁶ However, these promotions are limited to recycling processes in certain sectors such as plastic pellets, pulp, and paper. In Thailand, remanufactured goods are not recognised by national legislation to distinguish them from used goods. It is uncertain whether remanufactured goods will be treated as used or new goods, especially since certain types of used goods require import license or are prohibited for importation. Import restrictions and prohibitions on used goods include the following:

¹³ ERN, Remanufacturing Market Study (2015) 42

¹⁴ USAID, Remanufacturing in Malaysia - An Assessment of the Current and Future Remanufacturing Industry (2015) 12

¹⁵ USITC, Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade (2012) ch 1, 1

¹⁶ Thailand Board of Investment, Investment Promotion Guide (2023)

- 1) A permit issued by the Department of Industrial Works, Ministry of Industry, is required to import used EEE for reuse, repair, rebuilding, or dismantling.¹⁷ The scope of used EEE products includes, for instance, refrigerators, air conditioners, washing machines, microwave ovens, cell phones, monitors, printers, and copy machines. The importer must fulfil different conditions based on their intention of import. For example, to rebuild the used EEE to its original function, the importer must have a factory license with a capacity in line with the amount of imported used products, a certificate of goods with usage of less than three years (except for copy machines, which must be less than five years old), proof of the economic value of activities, and a waste management plan. The preamble of this regulation clarifies that it is intended to control hazardous substances and prevent harm to humans, animals, plants, assets, or the environment. This requirement could potentially impact on the remanufacturing business in the country if the core of used goods cannot be supplied domestically and needs to be imported from other countries.
- 2) The Department of Foreign Trade (DFT), Ministry of Commerce, imposes an import ban on used tyres or retreaded tyres including waste and scrap of tyres, except for bus and lorry tyres.¹⁸ Subject to an import permit, this exception allows imports for the purpose of retreading for exportation only. Permission shall be examined by the designated committee and granted by DFT. Tyre retreading involves multiple steps in the remanufacturing process to replace worn-out tread with renewed tread on used tyres.¹⁹ For the tyre remanufacturing industry, the cores of used bus or lorry tyres can be imported, but the administrative requirements must be completed beforehand in accordance with the regulation of the Ministry of Commerce.
- 3) Another import ban is imposed on used vehicles.²⁰ Some types of vehicles are allowed subject to permission, such as tow lorries or ambulances. Besides personal use, used cars can be imported for specific purposes only, such as diplomatic use, re-importation or re-exportation, and exhibition. It is legal to import used cars to be modified or repaired for exportation in specific areas, namely, Free Trade Zone regulated by Industrial Estate Authority of Thailand (IEAT) and Free Zone regulated by Customs Administration. Like used bus or lorry tyres, the import of used cars intended for circular activities is allowed for exportation only.

According to the current national regulations, if domestic materials are not sourced, remanufacturing activities to rebuild cores in Thailand are significantly limited. This is because certain types of used goods are only allowed to be imported for specific purposes and under certain conditions. Furthermore, it is unclear whether imported remanufactured goods will be treated as used goods, which means the import restrictions or bans might apply to imported remanufactured EEE products, tyres, or vehicles. Arguably, there is no clear policy or guidance

¹⁷ Notification of Department of Industrial Works on Criterion for Import of Used Electrical and Electronics Equipment Considered as Hazardous Substances into the Kingdom of Thailand (3rd Edition) B.E. 2550 (A.D. 2007)

¹⁸ Notification of Ministry of Commerce on Used Tyres as Prohibited Goods or as Products Requiring Permit for Importation and shall be in Compliance with the Administrative Measure on Importation into the Kingdom of Thailand B.E. 2556 (A.D. 2013)

¹⁹ Jeevan Gaidhane, Asmit Karadbhajane, Abhay Khalatkar and Inayat Ullah, 'An Application of Quality Tools to Improve the Tyre Remanufacturing Process' (2022) 1259 IOP, 3

²⁰ Notification of Ministry of Commerce on Used Vehicles as Prohibited Goods or as Products Requiring Permit for Importation into the Kingdom of Thailand B.E. 2562 (A.D. 2019)

regarding remanufactured goods in Thailand, and current legislation does not seem supportive of remanufacturing in general.

In terms of international economic integration, Thailand has 14 active FTAs with 18 partners,²¹ none of which have provisions related to remanufactured goods. This has resulted in limited experience among officers, the private sector and consumers. In recent years, this issue has become more controversial as it has been raised during negotiations for upgrading existing FTAs and new trade agreements. Relevant government agencies have raised many practical concerns, including the need for a clear scope to define “remanufactured goods”; origin verification; safety and standards of the goods for consumer protection; domestic measures or regulatory frameworks for effective implementation at borders; and methods to combat e-waste crime. As the gatekeeper of international trade, Customs will need to facilitate trade in circular products while also combating illegal waste trafficking.²² These important issues should be addressed and discussed deliberately before making any commitments to remanufacturing elements during the negotiations.

4. Multilateral Environmental Agreements (MEAs) and Regional Trade Agreements (RTAs)/Free Trade Agreements (FTAs) of Thailand

4.1 Multilateral Environmental Agreements (MEAs)

As discussed previously, one challenge for Customs in circular trade is effectively enforcing laws related to cross-border reverse supply chains. Cross-border reverse supply chains involve trading in waste intended for product life extension through circular activities such as reuse, repair, remanufacturing, or recycling.²³ In this context, MEAs play a crucial role in regulating the movement of substances or waste that could harm humans, animals, or the environment. Thailand has ratified several MEAs, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention), the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention), the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), or the Minamata Convention on Mercury, among others.

The Basel Convention established a regulatory framework allowing for the transboundary movement of hazardous wastes, provided that the importing or transit country has given their consent prior to the exportation.²⁴ Consequently, this convention is particularly relevant to cross-border reverse supply chains. In recent developments, to combat e-waste dumping from foreign countries, Thailand strictly prohibited the importation of e-waste in 2020, covering 428 types of e-waste classified under the Basel Convention, specifically chapters 84 and 85 of the HS, with tariff statistical code 899.²⁵ Through collaboration between the Customs Department of Thailand and

²¹ Nine ASEAN Member States, China, Japan, South Korea, India, Australia, New Zealand, Hong Kong, Peru and Chile

²² WCO, Study Report - Transition to a Circular Economy and Implications for Customs Administration (2023) 69

²³ *ibid* 31.

²⁴ <https://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx#>

²⁵ Notification of Ministry of Commerce on Determination of Electronic Waste as Prohibited Goods for Importation into the Kingdom of Thailand B.E. 2563 (A.D. 2020)

other relevant government agencies, a national tariff statistical code “899” was designated for imported goods as e-waste under the Basel Convention to manage the transboundary movement of such goods, which are not easily distinguishable under the Harmonized System.

However, this ban may disproportionately affect recycling companies compared to remanufacturing factories, as the components of e-waste, often a mixture of discarded electric parts or scraps with contamination, may not be fully restored to their original functionality.

4.2 Regional Trade Agreements (RTAs)/ Free Trade Agreements (FTAs)

Regarding trade agreements, Thailand has enforced 14 RTAs, comprising six bilateral agreements and eight multilateral agreements (Box 1). Regional Comprehensive Economic Partnership (RCEP) is the most recent trade agreement, which came into effect on 1 January 2022.²⁶ Additionally, the latest achievement was the conclusion of the Thailand-Sri Lanka FTA, signed in February 2024. Both parties are still undergoing their domestic processes for ratification. The 15 FTAs do not explicitly include provisions on the treatment of remanufactured goods, but there are some elements in the rules of origin chapters related to circular trade flows, including the process of remanufacturing.

Active FTAs in Thailand	
Bilateral Agreements	Multilateral Agreements
<ul style="list-style-type: none"> • Thailand-Australia • Thailand-New Zealand • Thailand-Japan • Thailand-Peru • Thailand-Chile • Thailand-India 	<ul style="list-style-type: none"> • ASEAN Trade in Goods Agreement (ATIGA) • ASEAN-Australia-New Zealand • ASEAN-China • ASEAN-India • ASEAN-Japan • ASEAN-South Korea • ASEAN-Hong Kong • Regional Comprehensive Economic Partnership (RCEP)

These elements concern an article of wholly obtained goods, which is one of the basic requirements to confer the originating status of goods under the preferential trade regime. Typically, goods considered wholly obtained or produced in a party are natural products acquired in that party or goods obtained from such products. Examples include live animals, plants, minerals, or goods of sea-fishing.

However, the elements pertaining to circularity are more relevant to industrial products obtained in an exporting party, covering three types of goods: (i) waste and scrap derived from operations there; (ii) parts or materials recovered from articles that can no longer perform their original purpose; or (iii) used goods collected there.

While slight differences in conditions can be found in each agreement, the main concept used for determining the origin is that the goods can no longer perform their original function and are fit only for recovery of raw materials, recycling or disposal.

²⁶ RCEP entered into force on 1 January 2022, among first ten ratifying parties: Australia, Brunei Darussalam, Cambodia, China, Japan, Laos, New Zealand, Singapore, Thailand and Vietnam. Afterwards, it took effect on 1 February 2022 for South Korea, on 18 March 2022 for Malaysia and on 2 June 2023 for the Philippines.

Based on a text comparison among 15 RTAs provided in Annex I, the origin elements concerning the circular economy can be categorised into three groups:

1) First category – Limited scope

This scope provides that only waste or scrap can be considered originating under wholly obtained criteria. Furthermore, this waste or scrap must be derived from either (i) production operations conducted in the exporting country or (ii) used goods collected there, provided that the waste or scrap is fit only for the recovery of raw materials.

This rule is laid down solely in the trade agreement between Thailand and Sri Lanka (Box 2).

<p>Box 2</p> <p>Thailand-Sri Lanka FTA</p> <p>Article 3.3 Wholly Obtained or Produced Goods</p> <p>The following goods shall be considered as wholly obtained or produced entirely in the territory of a Party:</p> <p>...</p> <p>(j) waste or scrap derived from:</p> <ul style="list-style-type: none">(i) production carried out there, or(ii) used goods collected or salvaged there, provided that the waste or scrap is fit only for the recovery of raw materials; and <p>...</p>

2) Second category – General scope

The most common qualifying requirements for this type of wholly obtained goods comprise two types of goods: (i) waste and scrap; and (ii) used goods. This approach is adopted in 13 FTAs:

For waste and scrap to be within the scope of wholly obtained articles (Table 1), they must meet the following criteria:

1. **Derived from Production or Processing Operations:** waste and scrap can result from production or processing carried out in a country. Six FTAs (Thailand-Chile, ASEAN-Australia-New Zealand, ASEAN-China, ASEAN-Japan, ASEAN-Hong Kong, and RCEP) specify that such waste and scrap which must be fit only for the recovery of raw materials. Additionally, ASEAN-Hong Kong and RCEP explicitly include the purpose of recycling processes in their definitions.
2. **Derived from Used Goods Collected in a country:** waste and scrap can also come from used goods collected in a country, provided they are fit only for the recovery of raw materials. Among four FTAs, only Thailand-India and ASEAN-India use the phrase “all products that can no longer perform the purpose for which they were produced” instead of “used goods” and elaborate on processing operations. These operations include not only industrial or chemical processes but also mining, agriculture, construction, refining, incineration and sewage treatment operations. These detailed

definitions assist issuing bodies of certificates of origin, Customs officers, and the private sector in having a clearer understanding of waste, scrap, and used goods when implementing this rule.

Requirements	Wast and scrap from production/processing operation	Wast and scrap from production/processing operation, or used goods which are fit only for the recovery of raw materials
Thailand-Australia	✓	
Thailand-New Zealand	✓	
Thailand-Peru	✓	
Thailand-Chile	✓ (Note: provided that such goods are fit only for the recovery of raw materials)	
Thailand-India		✓ (Note: 1. all products that can no longer perform the purpose for which they were produced and are fit only for the recovery of raw materials; 2. processing operations including all types of processing, not only industrial or chemical but also mining, agriculture, construction, refining, incineration and sewage treatment operations)
ATIGA		✓
ASEAN-Australia-New Zealand	✓ (Note: provided that such goods are fit only for the recovery of raw materials)	
ASEAN-China	✓ (Note: provided that such goods are fit only for the recovery of raw materials)	
ASEAN-India		✓ (Note: 1. all products that can no longer perform the purpose for which they were produced and are fit only for disposal for the recovery of raw materials; 2. processing operations including all types of processing, not only industrial or chemical but also mining, agriculture, construction, refining,

		incineration and sewage treatment operations)
ASEAN-Japan	<p style="text-align: center;">✓</p> <p style="text-align: center;">(Note: 1. processing operations including mining, agriculture, construction, refining, incineration and sewage treatment operations 2. provided that such goods are fit only for disposal or for the recovery of raw materials)</p>	
ASEAN-South Korea		✓
ASEAN-Hong Kong	<p style="text-align: center;">✓</p> <p style="text-align: center;">(Note: provided that such goods are fit only for the recovery of raw materials or for recycling purposes)</p>	
RCEP	<p style="text-align: center;">✓</p> <p style="text-align: center;">(Note: provided that such goods are fit only for disposal, for the recovery of raw materials, or for recycling purposes)</p>	

For used goods (Table 2), the main principle laid down in 13 agreements is consistent: used goods or goods that cannot perform their original purpose can be considered wholly obtained in a party if they are collected there and fit only for recovery of raw materials. Furthermore, six RTAs (Thailand-Chile, Thailand-India, ATIGA, ASEAN-India, ASEAN-Japan, and ASEAN-South Korea) provide additional details in their qualifying requirements. These agreements explicitly include goods that are unable to be restored or repaired and must be fit for specific purposes related to processes that turn such goods into valuable materials or reintegrate them into the production process. This clarity helps all stakeholders determine the origin of goods more precisely.

Table 2		
Summary for used goods		
Requirements	used goods which are fit only for the recovery of raw materials	goods which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for disposal or recovery of parts of raw materials, or for recycling purposes
Thailand-Australia	✓	
Thailand-New Zealand	✓	
Thailand-Peru	✓	
Thailand-Chile		✓
Thailand-India		✓

ATIGA		✓
ASEAN-Australia-New Zealand	✓	
ASEAN-China	✓	
ASEAN-India		✓
ASEAN-Japan		✓
ASEAN-South Korea		✓
ASEAN-Hong Kong	✓ (Note: provided that such goods are fit only for the recovery of raw materials or for recycling purposes)	
RCEP	✓ (Note: provided that such goods are fit only for disposal, for the recovery of raw materials, or for recycling purposes)	

3) Third category – Wide scope

In addition to the two types of goods in the second category, the trade agreement between Thailand and Japan uniquely allows parts or raw materials recovered in a country from goods that cannot perform their original functions or be restored or repaired to qualify as originating. In other words, used goods that are transformed into parts or raw materials through a recovery process in the exporting country shall be considered wholly obtained products. The provision supports trading in recovered materials or secondary raw materials, making it a distinctive feature of the Thailand-Japan agreement.

<p>Box 3</p> <p>Japan-Thailand Economic Partnership Agreement (JTEPA)</p> <p>Article 28 Originating Goods</p> <p>2. For the purposes of subparagraph 1 (a) above, the following goods shall be considered as being wholly obtained or produced entirely in a Party:</p> <p>...</p> <p>(i) articles collected in the Party which can no longer perform their original purpose in the Party nor are capable of being restored or repaired and which are fit only for disposal or for the recovery of parts or raw materials;</p> <p>(j) scrap and waste derived from manufacturing or processing operations or from consumption in the Party and fit only for disposal or for the recovery of raw materials;</p> <p>(k) parts or raw materials recovered in the Party from articles which can no longer perform their original purpose nor are capable of being restored or repaired; and</p> <p>...</p>
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These three categories illustrate how Thailand's existing FTAs are relevant to a circular economy model. In all FTAs, waste and scrap are widely recognised as wholly obtained goods if they result from production operations in a party or from used goods collected there. Trade in waste and

scrap among FTA partners is allowed, subject to schedules of tariff commitments, domestic import regulations, and particularly requirements in accordance with the Basel Convention.

In most agreements, except for the Thailand-Sri Lanka FTA, used goods or goods that can no longer perform their original purpose or cannot be restored or repaired, when collected in a country, qualify for wholly obtained status. These goods can potentially be traded for further processing in recovery, recycling or even remanufacturing industries, as the wholly obtained articles specified that used goods must be fit only for the recovery of parts or raw materials. Consequently, qualified parts or materials obtained from such goods might be used in the production of remanufactured goods.

Additionally, under the JTEPA, the recovery process of used goods in a country forms parts or raw materials that qualify as wholly obtained goods, regardless of the origin of the used goods. This specific process can transform used goods into recovered materials or secondary raw materials, minimising waste and maximising resources in line with the circular economy concept. The originating recovered parts or raw materials could be imported for further processing in remanufacturing activities in Thailand or Japan, through import restrictions or prohibitions need to be considered.

It is evident that some elements of wholly obtained articles in existing FTAs connect to the value chain of remanufacturing. However, in practice, trading in these circular materials might be challenging due to import restrictions or prohibitions.

II. Treatment of remanufactured goods

1. Refurbish vs. Remanufacture

The terms “remanufacturing” and “refurbishing” need to be highlighted to avoid any misunderstanding and confusion. The distinctions exist, for example in the United States (U.S.) within the medical device industry. According to the U.S. Food and Drug Administration (FDA), the U.S. medical imaging device industry typically considers itself as refurbishers.²⁷ The FDA defines a “remanufacturer” as “*any person who processes, conditions, renovates, repackages, restores, or does any other act to a finished device that significantly changes the finished device’s performance or safety specifications, or intended use.*”²⁸

The DITTA Good Refurbishment Practice (GRP) Working Group, aiming to promote medical imaging equipment refurbished by Original Equipment Manufacturers (OEM) and the concept of GRP, clarified that refurbished medical imaging equipment does not significantly change the performance, safety specifications, or intended use. Therefore, it does not fall within the scope of the term “remanufacturer” as defined by the U.S FDA.²⁹

However, in the context of the European Union (EU)-Vietnam Free Trade Agreement (FTA), the Working Group observed that a refurbished medical imaging device could be considered as a remanufactured good due to the different definitions of “remanufactured goods” specified in the trade agreement.³⁰ The definition of refurbishment can be found in various medical device instruments (Box 4). This indicates that different terminologies can lead to different conclusions. Therefore, the scope and definition of concerned goods need to be clear for the application and implementation of legal instruments. In this regard, this study focuses exclusively on “remanufactured goods” in international trade agreements.

Box 4

Examples of definitions of refurbishing in medical device instruments

International Standard on Good refurbishment practices for medical imaging equipment (IEC 63077) by International Electrotechnical Commission (IEC)

Refurbishment means a “process or combination of processes applied during the expected service life to restore used medical imaging equipment to a condition of safety and performance according to the specification of the manufacturer”³¹

ASEAN Medical Device Directive

Article 2 Definitions and Scope

(q) “**refurbished medical device**” means a medical device of which the whole or any part thereof has been substantially rebuilt, whether or not using parts from one or more used medical devices of that same kind, so as to create a medical device that can be used for the purpose originally intended by the

²⁷ USITC, Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade (2012) ch 1, 5

²⁸ See Code of Federal Regulations Title 21 Part 820

²⁹ DITTA GRP Working Group, Refurbished Medical Imaging Devices: Dossier for the Government of the Socialist Republic of Vietnam (2019) 5

³⁰ *ibid*

³¹ APEC, Trade in Remanufactured Goods in APEC: The Case of Refurbished Medical Imaging Devices (2021) 5

product owner of the original medical device, and which may have had the following work carried out on it:

- (i) stripping into component parts or sub - assemblies;
- (ii) checking their suitability for reuse;
- (iii) replacement of components/sub-assemblies not suitable for reuse;
- (iv) assembly of the reclaimed and/or replacement components/sub - assemblies;
- (v) testing of the assembled device against either original or revised release criteria; or
- (vi) identifying an assembled medical device as a refurbished medical device.

REGULATION (EU) 2017/745 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC (L117)

Article 2 Definitions

(31) ‘**fully refurbishing**’, for the purposes of the definition of manufacturer, means the complete rebuilding of a device already placed on the market or put into service, or the making of a new device from used devices, to bring it into conformity with this Regulation, combined with the assignment of a new lifetime to the refurbished device;

2. Remanufactured goods provisions in RTAs/FTAs

In international trade, remanufactured goods often face trade barriers in many economies as they are typically classified as used goods.³² Consequently, import bans or import licensing requirements are applied. In some jurisdictions, domestic laws do not recognise these circular goods, leading to ambiguity for businesses and local authorities. To support trade in remanufactured goods, certain provisions have been introduced in FTAs to reduce these barriers.³³ For instance, the U.S. has included remanufactured goods provisions in several FTAs, which provide definitions, rules of origin, equal treatment and market access for such goods.³⁴

In consideration of global development, this section will compare elements related to remanufactured goods established in six trade agreements: the United States-Mexico-Canada Agreement (USMCA), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)³⁵, the U.S.-Australia FTA, the EU-Japan FTA, the EU-Vietnam FTA, and the United Kingdom (UK)-Australia FTA.

The first component will focus on discussing the scope and definition of recovered materials and remanufactured goods. The second component will examine measures aimed at preventing remanufactured goods from being incorrectly categorised as used goods. Lastly, emphasis will be placed on the element concerning origin requirements.

³² Jack Barrie, Patrick Schröder and Marianne Schneider-Petsinger, *The Role of International Trade in Realizing an Inclusive Circular Economy* (Royal Institute of International Affairs 2022) 27

³³ *ibid* 28.

³⁴ USITC, *Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade* (2012) ch 2, 21

³⁵ CPTPP entered into force on 30 December 2018 for Australia, Canada, Japan, Mexico, New Zealand and Singapore, on 14 January 2019 for Vietnam, on 19 September 2021 for Peru, on 29 November 2022 for Malaysia, and on 21 February 2023 for Chile and on 12 July 2023 for Brunei Darussalam.

2.1 Scope and definitions

The clear scope and definition of relevant terms are of great importance for cross-border trade in remanufactured goods among FTA partners. A comparison table of definition provisions from six FTAs is provided in Annex II. It appears that the definition of “recovered materials” and “remanufactured goods” are given in all FTAs except for those between the EU-Japan and the EU-Vietnam, which define only the term “remanufactured goods”. The four FTAs establish the same concept of what constitutes recovered materials, which are materials resulting from two elements: (i) the disassembly of used goods into individual parts; and (ii) the processing operations necessary to restore those parts to sound working condition. In other words, recovered materials pertain to parts of materials obtained from used goods that have undergone through a series of processes.

Box 5

Example of the definition of recovered material

UK-Australia FTA

Article 1.4 General Definitions

“recovered material” means a material comprising one or more individual parts that results from:

(a) the disassembly of a used good into individual parts; and

(b) the cleaning, testing or other processing of those individual parts as necessary for improvement to sound working condition;

For the term “remanufactured goods”, all six FTAs limit the scope of such goods to machinery products. In the USMCA, CPTPP, EU-Japan and UK-Australia, remanufactured goods can be machinery products classified in HS Chapters 84 through 90 or heading 94.02. Among the six FTAs, the EU-Japan is the only agreement to include goods under heading 40.12 in the definition, which could be retreaded tyres, the only remanufactured goods identified in the Harmonized System.³⁶ Additionally, all agreements except for the EU-Japan FTA exclude some goods at the heading or subheading level from the definition article, while the EU-Vietnam FTA provides the exclusion list in its Appendix 2-A-5. The Harmonized System (HS) codes listed in scopes and exclusions vary from agreement to agreement. However, the principles for defining remanufactured goods are common. Three components need to be ascertained for the determination of remanufactured goods.

First, a good is entirely or partially composed of recovered materials. In the EU-Japan and EU-Vietnam FTAs, recovered materials are not referred to in the text, but the goods can be composed of parts obtained from used goods. This could be a reason that recovered materials are not defined since the term is not mentioned in those FTAs.

Second, a good has a similar life expectancy and performance compared to a new good. The last component is that it has a factory warranty similar to such a new good. If a core is rebuilt until three conditions are met, the final product will qualify as a remanufactured good. In this context, it is observed that without a clear definition of recovered materials, the element of remanufacturing activity is omitted from these two free trade agreements (EU-Japan and EU-Vietnam FTAs). It

³⁶ Jack Barrie and Gael Grooby, *Going Circular: How the Harmonized System Codes Can/Not Support a Circular Economy and What Else Could Be Done* (Friedrich-Ebert-Stiftung 2023) 11

remains unclear which processing operations are required to contribute to the restoring of used goods.

Box 6

Example of the definition of remanufactured good

EU-Vietnam FTA

Article 2.3 Definitions

"(k)" "remanufactured good" means a good classified in HS Chapter 84, 85, 87, 90 or heading 94.02, except those listed in Appendix 2-A-5 (Goods Excluded from the Definition of Remanufactured Goods), which:

- (i) is entirely or partially comprised of parts obtained from goods that have been used beforehand; and
- (ii) has similar performance and working conditions as well as life expectancy compared to the original new good and is given the same warranty as the original new good."

2.2 Market access

A provision to ensure the equal treatment of remanufactured goods as new goods is crucial to reducing trade restrictions among FTA partners. This provision could serve as a tool for market access for remanufactured goods. Based on the comparison table of remanufactured goods provisions in Annex III, the agreement between the U.S. and Australia, which entered into force on 1 January 2005, did not include a remanufactured element in national treatment and market access chapter. Only the definition and origin requirements can be found in the U.S.-Australia FTA. In the other five FTAs, two main principles were established in the remanufactured goods provision:

- 1) Equal treatment – This concept ensures non-discrimination between new goods and remanufactured goods. The EU-Japan and EU-Vietnam stipulate that remanufactured goods shall receive the same treatment as new goods. This includes the application of any measures, tariff rates, documentation, or import licensing requirements that apply to new goods. In contrast, the USMCA, CPTPP, and UK-Australia take a negative approach, by specifying that prohibitions or restrictions applicable to used good shall not apply to remanufactured goods. These agreements further clarify that, as an exception under Article XI of the General Agreement on Tariffs and Trade (GATT) 1994, prohibitions or restrictions on goods may apply to remanufactured goods. While the texts of these agreements may vary, they share the common principle of refraining from treating remanufactured goods as used goods, thereby ensuring cross-border trade in remanufactured goods.
- 2) Identification for distribution or sales – All five FTAs allow a requirement to specify or label a product as remanufactured when it is distributed or sold in domestic markets. This helps shape consumer perception of remanufactured goods positively. Additionally, members of the USMCA, CPTPP, and UK-Australia can enforce technical regulations that apply to an equivalent new good condition to remanufactured goods under this provision.

In this regard, it should be noted that under CPTPP, Vietnam reserved the right not to implement this provision for certain goods listed in Table 2-B-1 of Annex 2-B for three years after the date of entry into force, which was on 14 January 2019. The reservation included, for instance, certain

types of fans, air conditioners, dishwashing machines, or motorcycles, etc. Additionally, in the EU-Vietnam FTA, there was also a transitional period to implement this provision no later than three years from the date of entry into force, which was 1 August 2020. Currently, the importation of any remanufactured goods as defined in the CPTPP or the EU-Vietnam FTA into Vietnam should not be subject to prohibitions or restrictions that apply to used goods.

Box 7

Example of a market access provision

CPTPP

Article 2.11: Remanufactured Goods

1. For greater certainty, Article 2.10.1 (Import and Export Restrictions) shall apply to prohibitions and restrictions on the importation of remanufactured goods.

2. If a Party adopts or maintains measures prohibiting or restricting the importation of used goods, it shall not apply those measures to remanufactured goods.^{5, 6}

Note:

⁵ For greater certainty, subject to its obligations under this Agreement and the WTO Agreement, a Party may require that remanufactured goods:

(a) be identified as such for distribution or sale in its territory; and

(b) meet all applicable technical requirements that apply to equivalent goods in new condition.

⁶ This paragraph shall not apply to the treatment of certain remanufactured goods by Vietnam as set out in Annex 2-B (Remanufactured Goods).

2.3 Rules of origin

Based on a table provided in Annex IV, it appears that initially, the origin element concerning remanufactured goods was included in the wholly obtained definition. This is evident in the U.S.-Australia FTA where the provision stipulates that a recovered good qualifies as wholly obtained good if it is derived from used goods in the parties' territories and subsequently used in the production of remanufactured goods. However, in recent agreements (the USMCA, CPTPP and UK-Australia FTA), this element is specified in an article on the treatment of recovered materials. These three agreements establish a common principle for recovered goods to be considered originating. Their provisions state that a recovered material derived in the territory of one or more parties shall be treated as originating when used in the production of, and incorporated into, a remanufactured good. In fact, both approaches could lead to the same result in determining the originating status of remanufactured goods, as similar key conditions apply to recovered goods qualifying as originating materials for other goods. In contrast, the EU-Japan and EU-Vietnam FTAs do not provide special treatment for recovered materials used in the production of remanufactured goods.

Box 8

Example of an origin provision

USMCA

Article 4.4: Treatment of Recovered Materials Used in the Production of a Remanufactured Good

1. Each Party shall provide that a recovered material derived in the territory of one or more of the Parties is treated as originating when it is used in the production of, and incorporated into, a remanufactured good.

2. For greater certainty:

(a) a remanufactured good is originating only if it satisfies the applicable requirements of Article 4.2 (Originating Goods); and

(b) a recovered material that is not used or incorporated in the production of a remanufactured good is originating only if it satisfies the applicable requirements of Article 4.2 (Originating Goods).

For clarity, the USMCA, CPTPP and the UK–Australia FTA further emphasise the rules of origin requirements for remanufactured goods and recovered materials that are not used or incorporated into remanufactured goods. In such cases, the general requirements establishing goods as qualifying as originating will apply.

For example, under Article 3.2 on Originating Goods in the CPTPP, a remanufactured good can be considered as originating if it meets three applicable requirements: (i) it is wholly obtained in one or more parties in accordance with a wholly obtained article; (ii) it is produced entirely in one or more parties exclusively from originating materials; and (iii) it satisfies the Product-Specific Rules (PSRs) where non-originating materials are used in production. If the material used in production is imported from a non-party, the third requirement necessitates substantial transformation of that non-originating material, such as through a Change in Tariff Classification (CTC) or Regional Value Content (RVC) rule as specified in the PSRs.³⁷

In this regard, when an old product is imported for remanufacturing in a country, the remanufacturer/exporter needs to check the applicable rules of the final product as set out in the PSRs. According to provisions on treatment of recovered materials under these three FTAs, a recovered good derived from such a product can be treated as originating. Consequently, the remanufactured goods may have a greater chance of meeting the applicable PSRs, regardless of the origin of the core product.

For example, if the PSR applicable to a printer requires an RVC of at least 40 percent, the value of recovered materials derived from used printers of undetermined origin and incorporated into a remanufactured printer can count towards the value of originating materials used to calculate the RVC for that remanufactured printer.

For a deeper understanding of how to apply rules on originating goods alongside provisions on the treatment of recovered materials, please refer to specific examples provided in the U.S. Code

³⁷ <https://www.dfat.gov.au/trade/agreements/in-force/cptpp/outcomes-documents/guide-to-obtaining-preferential-tariff-treatment-when-exporting-and-importing-goods-using-cptpp>

of Federal Regulations, 19 CFR Part 182.³⁸ This resource includes examples that illustrate the determination of origin for remanufactured water pumps under an RVC rule and remanufactured bulldozers under a Change in Tariff Subheading (CTSH) rule in the context of the USMCA.

It is observed that provisions on the treatment of recovered materials establish favourable requirements for determining the originating status of remanufactured goods. Essentially, these modern FTAs advocate for the remanufacturing industry within the territory of one or more parties, irrespective of the origin of the used goods. For example, a core of unknown origin could be imported into one CPTPP member for disassembling, cleaning or testing. The recovered material obtained could then be exported to another CPTPP member to produce a remanufactured good. In this latter country, such recovered material would be treated as originating.

In contrast, under the EU-Japan or EU-Vietnam FTAs, recovered materials must meet the PSRs to qualify as originating; otherwise, they are considered non-originating materials. Without these favourable treatment provisions, it appears challenging for remanufactured goods to qualify as originating goods.

Regarding RVC requirements, the recovered material of unknown origin could constitute a significant component of a remanufactured good, potentially contributing to a high value of non-originating materials for RVC calculation purposes. Conversely, for rules based on CTC, used goods and remanufactured goods typically fall under the same tariff line. Therefore, remanufacturing processes carried out in a party cannot change the HS code of a non-originating component derived from used goods.

In summary, the absence of specific provisions regarding the treatment of recovered materials in the FTAs between the EU and Japan or the EU and Vietnam could effectively restrict remanufacturing operations to using recovered materials originating within the signatory countries of these agreements if they wish to use these agreements.

The comparison of six trade agreements illustrates that there is no standard package for remanufactured goods provisions in FTAs. Different rules laid out in various chapters reflect remanufacturing policies of different economies. Some provisions are established to enable cross-border trade in remanufactured products between FTA partner countries, while others favour the production of such goods regardless of the origin of the cores.

3. Measures or regulatory requirements for the remanufacturing industry

Two key elements essential for the remanufacturing business are the supply of cores and the trade in remanufactured goods.³⁹ To effectively implement provisions for remanufactured goods, measures to support or requirements to regulate the remanufacturing business undertaken by experienced countries are highlighted. This section will examine implementation practices in two areas: (i) the role of a remanufacturing hub; (ii) international trade in remanufactured goods including the role of the HS in facilitating circularity.

3.1 In the role of a remanufacturing hub

As a remanufacturer, a reliable supply of cores is essential for business. If the import of cores or used goods faces trade barriers, the source of cores will be limited to what can be sourced on the domestic market. For countries that support remanufacturing, cores can be imported without

³⁸ CFR is the codification of the general and permanent rules published in the Federal Register by the departments and agencies of the U.S. Federal Government. See details available at <https://www.ecfr.gov/>

³⁹ Michikazu Kojima, 'Remanufacturing and Trade Regulation' (2017) 61 *Procedia CIRP* 641, 641

restrictions, as seen in the U.S. and Singapore.⁴⁰ In 2011, the U.S. imported cores worth \$1.8 billion, while exporting cores valued at around \$2.0 billion⁴¹.

However, due to the e-waste problem, Singapore has imposed restrictions on used electrical and electronic equipment (EEE). The import of used EEE intended for reuse, repair, or refurbishment is subject to approval by the National Environmental Agency of Singapore.⁴² Importers are required to submit supporting documents to prove they have a contractual agreement with the EEE manufacturer to repair or refurbish the equipment, a repair facility, and a ready market for that equipment.⁴³ This is an example of a country facilitating circular trade while also implementing administrative controls to prevent the illegal shipment of e-waste.

A summary paper prepared by the Asian Network showed that among Japan, Hong Kong, and the ten ASEAN Member States, only Japan does not impose trade restrictions on the import of used EEE.⁴⁴ Developing countries in Asia tend to apply either import restrictions or prohibitions on used EEE. As a consequence, the import of cores in the IT sector for remanufacturing could be inevitably affected.

In terms of domestic regulations for products sold in the domestic market, these regulations are more likely to apply to certain products, particularly medical equipment. Examples can be found in the U.S. and Malaysia. The U.S. FDA includes remanufacturers in the definition of manufacturers under the Federal Food, Drug, and Cosmetic Act (FD&C Act). As a result, firms remanufacturing medical devices are subject to the same applicable requirements as manufacturers.⁴⁵ This includes but is not limited to establishment registration and medical device listing, quality system regulation, and labelling requirements.⁴⁶

As discussed above, it should be noted that the definition of remanufacturing under the FD&C Act and trade framework agreements has some differences. To comply with national legislation, firms need to thoroughly examine the scope of terms defined in the domestic regulation. In this regard, the FDA launched guidance on the remanufacturing of medical devices to provide more clarification on how to determine remanufacturing activities and comply with regulatory requirements.⁴⁷

In Malaysia, the Medical Device Authority issued Circular Letter No.3 Year 2022 to regulate refurbishment activities of medical devices, including registration, conformity assessment, compliance with Good Refurbishment Practice of Medical Device (GRPMD) or labelling with

⁴⁰ *ibid* 644.

⁴¹ USITC, *Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade* (2012) ch 2, 18 - 19

⁴² Circular No. PCD/BASEL/07-01 on Import and Export of E-wastes and Used Electronic Equipment

⁴³ See Annex I of Circular No. PCD/BASEL/07-01

⁴⁴ The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes is an informal network among the competent authorities to the Basel Convention in Asia.

https://www.env.go.jp/en/recycle/asian_net/Annual_Workshops/2023_PDF/Summary_of_Import_Regulation_on_UEEE_in_Asian_Countries.pdf

⁴⁵ U.S. Food and Drug Administration, *Remanufacturing of Medical Devices: Guidance for Industry, Entities That Perform Servicing or Remanufacturing, and Food and Drug Administration Staff* (2024) 17

⁴⁶ *ibid*

⁴⁷ *ibid* 1.

“refurbished”.⁴⁸ The definition of the term “refurbishment” needs to be carefully considered by stakeholders.

To ensure the quality and reliability of remanufactured products, some countries introduce quality certification systems or technical standards for certain types of remanufactured products. On one hand, these measures are operated by government agencies; on the other hand, some countries implement the systems based on voluntary demand by third-party entities.

For example, in Korea, the quality certification system was established pursuant to the Act on the Promotion of the Conversion to an Environment-friendly Industrial Structure.⁴⁹ It is operated by the Korean Agency for Technology and Standards (KATS) under the auspices of the Ministry of Trade, Industry and Energy (MOTIE). The scope of products includes automotive parts and EEE parts.⁵⁰

In Malaysia, according to the Malaysia Automotive Remanufacturing Roadmap (MARR), the MS 2697:2018 standard is established to provide requirements for remanufacturing activities of motor vehicle parts and components, followed by the 4R2S Certification Scheme.⁵¹ SIRIM Berhad is an agent company operating the certification system, as appointed by the Department of Standards Malaysia. The policy establishment and implementation system aim to transform Malaysia into the centre of automotive remanufacturing in ASEAN.⁵²

In the UK, a variety of technical standards and certification systems are managed by third-party organisation. The British Standards Institution (BSI) established the BS 8887 series as a standard for remanufacturing processes.⁵³ The institution also provides a Kitemark certification scheme to certify that remanufacturing processes conform to the BS 8887 standard.⁵⁴ The products covered by the certification include, among others, mobile phones, electric appliances and laptop computers. These standards and systems can assure consumers of the safety and quality of the remanufactured goods they purchase and help improve the positive perception of these circular goods.

In the role of a remanufacturing centre, four dimensions should be highlighted. First, import constraints applied to certain used goods should be carefully implemented so that they fulfil their legitimate objectives such as national security, human health or the environment, but, considering the need of the import of cores for remanufacturing, still allowing for simple trade in the cores that meet the requirements. Secondly, appropriate measures should be implemented to prevent e-waste trafficking. Thirdly, the terms “remanufacturing”, or “refurbishment” should be clearly defined in relevant national regulations. Lastly, technical standards or certification systems should

⁴⁸ Circular Letter of the Medical Device Authority No.3 Year 2022 of Policy on Implementation and Enforcement under the Medical Device Act 2012 (Act 737) for Refurbishment of Medical Device

⁴⁹ Hong-Yoon Kanga, Yong-Sung Juna, Young-Chun Kima and Hyun-Jung Jo, ‘Comparative Analysis on Cross-national System to Enhance the Reliability of Remanufactured Products’ (2016) 40 *Procedia CIRP* 280, 282

⁵⁰ *ibid*

⁵¹ <https://www.sirim-qas.com.my/our-services/management-system-certification-related-services/4r2s-management-system-certification/>

⁵² *ibid*

⁵³ Hong-Yoon Kanga, Yong-Sung Juna, Young-Chun Kima and Hyun-Jung Jo, ‘Comparative Analysis on Cross-national System to Enhance the Reliability of Remanufactured Products’ (2016) 40 *Procedia CIRP* 280, 283

⁵⁴ <https://www.bsigroup.com/globalassets/documents/energy/remanufactured-and-reconditioned/km-recon-refurb-process-web.pdf>

be developed to assure consumers that remanufactured products are safe and meet all technical requirements.

3.2 International trade in remanufactured goods

In trade framework agreements, market access provisions related to remanufactured goods enable such goods to enter the market of FTA partner countries without being treated as used goods. However, different practices exist regarding how countries facilitate or regulate the entry of remanufactured goods into their territory.

At the border, the U.S. Customs and Border Protection (CBP) provides no special treatment to remanufactured goods in terms of cargo procedures, regulations, classification, valuation or enforcement.⁵⁵ In other cases, as remanufactured medical devices are accorded the same treatment as new devices, their import is also subject to all U.S. FDA regulations and requirements applicable to new medical devices.⁵⁶ This is similar to the regulations in the EU⁵⁷. In Singapore, no marking or labelling is required for remanufactured goods.⁵⁸ Economies that advocate remanufacturing are more likely to allow the import of remanufactured goods without regulating them solely because they are not newly manufactured.

In contrast, some countries do not import remanufactured goods freely. To honour the CPTPP commitment, Vietnam launched Decree No. 77/2023/ND-CP governing the Management of Importation of Remanufactured Goods Under the CPTPP (Decree 77), effective from 1 January 2024. Decree 77 provides extensive details regarding the requirements and procedures for importing remanufactured goods, consisting of 5 chapters and 22 articles.⁵⁹ Three main criteria are required: (i) an import license issued by the relevant authority depending on the type of goods; (ii) goods must satisfy the rules of origin set out in the CPTPP; and (iii) fulfilment of all relevant regulations which apply to equivalent goods in new condition, including product quality, labelling requirements, technical standards, environmental protection, and intellectual property protection.⁶⁰

Moreover, this regulation requires the remanufacturing enterprise or brand owner to apply for a remanufacture code used for importation by providing supporting documents to prove factors such as remanufacturing capacity, fulfilment of CPTPP origin requirements, and commitments on warranty and maintenance.⁶¹ The HS codes of eligible goods are listed in Appendices I to V of the decree, divided into five categories based on the responsibility of various ministries or government agencies.⁶² This regulation illustrates that Vietnam adopts a restrictive approach towards the import of remanufactured goods. On one hand, the decree creates bureaucratic

⁵⁵ https://mddb.apec.org/Documents/2012/MAG/WKSP2/12_mag_wksp2_011.pdf

⁵⁶ APEC, Trade in Remanufactured Goods in APEC: The Case of Refurbished Medical Imaging Devices (2021) 13

⁵⁷ Shatrunjay Shukla, Vivekanandan Kalaiselvan, and Rajeev Singh Raghuvanshi, 'How to Improve Regulatory Practices for Refurbished Medical Devices' (2023) 101(6) Bulletin of the World Health Organization 412, 413

⁵⁸ USITC, Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade (2012) ch 10, 18

⁵⁹ <https://kpmg.com/vn/en/home/insights/2024/01/decree-77-governing-management-of-refurbished-goods-under-cptpp.html>

⁶⁰ <https://www.vietnam-briefing.com/news/refurbished-goods-and-the-cptpp-unpacked.html>

⁶¹ <https://insightplus.bakermckenzie.com/bm/international-commercial-trade/vietnam-remanufactured-goods-from-cptpp-countries-to-be-accepted-for-importation-into-vietnam-from-1-january-2024>

⁶² <https://www.vietnam-briefing.com/news/refurbished-goods-and-the-cptpp-unpacked.html>

procedures for business, on the other hand, it might ensure the reliability of imported remanufactured products placed in the domestic market.

At an international level, the international community also plays an important role. For example, in the Asia-Pacific Economic Cooperation (APEC), 11 interested economies joined the “Pathfinder on Facilitating Trade in Remanufactured Goods” as established in Annex D of the APEC Ministerial Meeting in 2011. This initiative aims to eliminate tariff and non-tariff barriers to remanufactured goods.⁶³ The participating economies are Japan, the United States, Chile, Canada, New Zealand, Chinese Taipei, Papua New Guinea, Australia, Mexico, Singapore, and Korea. As part of this initiative, APEC ministers emphasised the need for capacity-building activities on trade in remanufactured goods.⁶⁴ This emphasis resulted in several workshops designed to increase knowledge about remanufactured goods among APEC economies.⁶⁵

Regarding the universal coding system for international trade of goods, the HS contributes to circular trade by providing the datasets of trade flows in circular products.⁶⁶ This benefits businesses and policymakers by offering a common codification for negotiating trade agreements related to the circular economy and supporting work connected to multilateral environmental agreements.⁶⁷ However, the description of HS codes at the six-digit level has limitations in identifying the characteristics of circular products such as used goods, recovery materials, or waste, as they are classified in the same heading as new goods.⁶⁸

In the revision of the HS 2022, some developments have been made to distinguish waste from normal goods. For example, the new heading 8549 was created for electrical and electronic waste and scrap due to global issues of e-waste movement and high trade volume.⁶⁹ At a national level, to tackle the challenges of the six-digit code, the EU, China, and the U.S. have classified products associated with the circular economy at 8- to 12-digit codes which pertain to their national classification system.⁷⁰

In terms of remanufactured goods, as mentioned above, the only remanufactured goods described in the universal code are retreaded tyres, classified under 4012.11, 4012.12, 4012.13 and 4012.19. National practices regarding classification can be found in some countries. For instance, Mexico has developed a specific classification for certain remanufactured goods such as heavy machinery, but the import is limited to a single port by selected importers.⁷¹

To support cross-border trade in remanufactured goods, it is crucial to establish the principle of equal treatment between remanufactured and new goods need in a trade framework, particularly in countries with trade restriction on remanufactured goods. Along with the policy for implementation, a liberal approach could be adopted, treating the import of remanufactured goods

⁶³ https://www.apec.org/meeting-papers/annual-ministerial-meetings/2011/2011_amm/annex-d

⁶⁴ https://www.apec.org/meeting-papers/annual-ministerial-meetings/2011/2011_amm

⁶⁵ APEC, Trade in Remanufactured Goods in APEC: The Case of Refurbished Medical Imaging Devices (2021)

⁶⁶ Jack Barrie and Gael Grooby, *Going Circular: How the Harmonized System Codes Can/Not Support a Circular Economy and What Else Could Be Done* (Friedrich-Ebert-Stiftung 2023) 9

⁶⁷ *ibid*

⁶⁸ ECLAC, *International Trade Outlook for Latin America and the Caribbean: Pursuing a Resilient and Sustainable Recovery* (United Nations 2021) 160

⁶⁹ *ibid* 161.

⁷⁰ Jack Barrie and Gael Grooby, *Going Circular: How the Harmonized System Codes Can/Not Support a Circular Economy and What Else Could Be Done* (Friedrich-Ebert-Stiftung 2023) 7

⁷¹ *ibid* 12.

without special restrictions, while a more restrictive approach could regulate such importation. Additionally, an international network is crucial for supporting capacity-building activities, considering the needs of partner countries. Lastly, due to the limitations of the HS structure, national classification or statistic codes for remanufactured goods need to be taken into consideration.

III. Analysis in the context of Thailand

As Thailand is in the initial stages of transitioning towards a circular economy society, the principles of the circular economy can be found aligned in its long-term strategy, second-level plan, and action plans. However, the circular activity of remanufacturing is regrettably absent from any national policies and action plans. This omission has led to uncertainty regarding the legal interpretation, application of national regulations or policy negotiations concerning remanufactured goods.

In this regard, this section will analyse (1) the provisions that should be included in trade agreements and (2) measures or regulatory requirements to be implemented within the context of Thailand. The remanufacturing supply chain involves various businesses such as core brokers, remanufacturers, distributors, or traders.⁷² The analysis will be conducted based on two hypotheses: Thailand's role as remanufacturing hub and its role as an importing country of finished remanufactured goods. It should be noted that the analysis in this section does not represent Thailand's position in the negotiations.

1. Thailand as a remanufacturing hub

In this study, a remanufacturing hub refers to a business conducting remanufacturing processes within a country, subsequently exporting the remanufactured products to other countries or selling them in domestic markets. If national policy aims to transform Thailand into a remanufacturing centre, this section will discuss how provisions in trade agreements and implementation measures should be addressed.

1.1 Provisions to be included in trade agreements

Based on the study of six Free Trade Agreements (FTAs), there are three main elements that should be included to support a remanufacturing centre:

1) Scope and definitions

Recovered materials: These goods should result from two elements: (i) the disassembly of used goods into individual parts; and (ii) the processing operations necessary to restore those parts to sound working condition. The second element entails the scope of remanufacturing processes required to constitute recovered materials, which will link with the provision on origin requirements. The discussion of the scope should be conducted among relevant government agencies, technical experts and businesses, considering the needs of remanufacturers.

Remanufactured goods: For the Harmonized System (HS) codes listed in the scope and exclusion from the definition, discussions among all stakeholders are required,

⁷² USITC, Remanufactured Goods: An Overview of the U.S. and Global Industries, Markets, and Trade (2012) ch 1, 7

considering product safety, business needs, and the sectors that the government aims to promote. For example, if the country's policy focuses on the tyre retreading industry, the scope of remanufactured goods should include heading 40.12 like the European Union (EU)-Japan FTA. Additionally, three criteria should be met for the determination of remanufactured goods: (i) the good is entirely or partially composed of recovered materials, (ii) it has a similar life expectancy and performance compared to a new good and (iii) it has a factory warranty similar to that of a new good.

2) Market access

To clearly distinguish between used goods and remanufactured goods, this study recommends adopting a negative approach as established in the USMCA, the CPTPP and the UK-Australia agreements. The provision should specify that prohibitions or restrictions on used goods shall not apply to remanufactured goods, along with an explanation of the exception under Article XI of the General Agreement on Tariffs and Trade (GATT) 1994, where remanufactured goods may be subject to prohibitions or restrictions applying to new goods. Furthermore, to protect consumers' rights, a labelling requirement or technical regulations should be allowed by this rule. More importantly, a transitional period, as in the case of Vietnam in the CPTPP and EU-Vietnam agreements, would be necessary to ensure smooth implementation, given that Thailand has limited experience with remanufacturing issues. The duration of this period should be adequate to prepare appropriate measures or necessary arrangements for relevant authorities, private sectors, and consumers.

3) Rules of origin

As a remanufacturer, the supply of cores possibly comes from a non-party or unknown origin. An article on the treatment of recovered materials used in the production of remanufactured goods should exist to provide favourable requirements for remanufactured goods to qualify for originating status. This provision will allow materials recovered from used goods of unknown origin to be treated as originating, provided that they are used in the production of, and incorporated into, a remanufactured good. As a result, the finished product could have more potential to satisfy the Product-Specific Rules (PSRs) and be eligible for preferential treatment when imported into other parties.

With regard to ongoing negotiations, elements related to remanufactured goods have been discussed, for instance, in the context of upgrading the ASEAN Trade in Goods Agreement (ATIGA) or the Thailand-EU FTA. The proposal from Thailand-EU regarding remanufacturing includes two elements (Box 9): a definition of remanufactured goods and a market access provision.⁷³

First, the definition does not exclude any goods falling under Chapters 84 to 90 or heading 94.02. Secondly, it does not specify the remanufacturing process required for used goods. Thirdly, it lacks a transitional period. Lastly, it does not establish favourable origin requirements for materials obtained from used goods. These issues may pose difficulties for a remanufacturing hub in ensuring that finished remanufactured goods meet the applicable PSRs if cores rely on foreign market.

⁷³ EU textual proposals are publicly available at https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/thailand/eu-thailand-agreement/documents_en

Box 9

Textual proposals from the EU under the Thailand–EU FTA

Article X.2 Definitions

(h) "remanufactured good" means a good classified in HS Chapters 84 to 90 or heading 94.02 that:

- (i) is entirely or partially comprised of parts obtained from used goods;
- (ii) has similar performance and working conditions compared to the equivalent goods, when new; and
- (iii) is given the same warranty as that applicable to the equivalent goods, when new;

Article X.9 Remanufactured goods

1. A Party shall not accord to remanufactured goods of the other Party treatment that is less favourable than that it accords to equivalent goods, when new.
2. A Party may require that remanufactured goods be identified as such for distribution or sale in its territory and that they meet all applicable technical requirements that apply to equivalent goods, when new.

[Placeholder: the EU reserves its right table additional provisions under this Article, notably in order to clarify the relationship between used and remanufactured goods.]

1.2 Measures or regulatory requirements to be implemented

Before the provisions concerning remanufactured goods under the trade agreement come into force, the government should ensure that appropriate measures or regulatory requirements are in place.

At the national level, for goods related to industries promoted by the government, outright bans on those used goods should be eliminated to allow entry of cores for remanufacturing centres. For example, if the objective is to promote the tyre retreading industry, the import ban on used tyres or retreaded tyres imposed by the Department of Foreign Trade, Ministry of Commerce, should be removed. In this respect, import requirements on certain type of used goods might be maintained to fulfil the legitimate objectives. As a remanufacturing hub, the importation of various types of used goods might increase. The government should closely monitor the importation of used Electrical and Electronic Equipment (EEE) for example by requiring an import license to prevent illegal e-waste dumping, as such e-waste is often disguised as used EEE. Currently, the Department of Industrial Works, Ministry of Industry, oversees administrative controls of the importation of used EEE. If national policy aims to promote the electronics sector, existing regulations may need to be reviewed to ensure that measures are appropriate and proportionate.

For remanufactured goods sold in the domestic market, particularly those impacting public health and safety, such as medical devices, they should be monitored and regulated as new goods. Therefore, the terms "remanufacturing" or "refurbishment" should be explicitly included and defined within the Medical Device Act of Thailand. Given the complexity of remanufactured medical devices, further guidelines should be developed to provide clarity and facilitate compliance with national regulations.

Additionally, a technical standard or certification system for remanufactured products should be implemented to ensure consumers of the safety and reliability of these goods. In Thailand, certain types of goods are subject to the Thai Industrial Standard operated by the Thai Industrial Standards Institute (Ministry of Industry). As a remanufacturing hub, establishing standards and a certification scheme for specific remanufactured goods may be necessary to help the industry transition into a trusted remanufacturing centre, similar to the remanufactured automotive sector in Malaysia.

At the international level, parties to FTAs should develop implementation guidelines for the provisions concerning remanufactured goods, particularly regarding the determination of origin for goods produced with or without recovered materials. These guidelines are essential to enhance understanding among private sectors, customs officers, and other regulatory authorities.

2. Thailand as an importing country of remanufactured goods

If Thailand's circular economy policy does not aim to position the country as a remanufacturing centre or hub, but rather as an importing country, this section will highlight elements in the FTA or implementation measures that should be considered.

2.1 Provisions to be included in trade agreements

As an importer, two provisions are necessary:

1) Scope and definitions

Recovered materials: A clear definition of these materials is essential for importers and government authorities, including Customs, to determine remanufactured goods. This definition should include two elements, necessitating stakeholders to specify the level of remanufacturing operations required to process used goods.

Remanufactured goods: Fundamentally, these goods consist of three criteria as analysed previously. The HS codes included within the scope and those excluded from the definition require careful consideration by regulatory authorities and technical experts to ensure the safety and reliability of the products in question.

2) Market access

This provision is fundamental to facilitate international trade in remanufactured goods. As discussed previously, this article should cover four components: (i) a non-discriminatory approach to prevent discrimination between new goods and remanufactured goods; (ii) clarification on the exception under Article XI of the GATT 1994; (iii) a labelling requirement or technical regulations; and (iv) a transitional period to implement this provision within a suitable timeframe.

Regarding the origin element, the provision concerning the treatment of recovered materials is seen as advantageous for remanufacturers, as it provides importing countries with more flexibility in adopting this rule. Based on the proposal outlined in Box 9 of the Thailand–EU FTA, these provisions seem to support the role of an importing country. However, stakeholders need to further examine the exclusion list, the defined remanufacturing process required, and the transitional period.

2.2 Measures or regulatory requirements to be implemented

To ensure effective implementation as an importing country, national regulations, international cooperation, and the HS will play crucial roles.

Given Thailand's limited experience in implementing international trade in remanufactured goods, national regulations should include administrative controls on the importation of these goods to ensure product safety and reliability in the domestic market. Extensive discussions among regulatory bodies, customs officials, technical experts, and private sectors during the regulation drafting process are essential to ensure the proportionality and regulatory requirements for imports. The regulations should outline clear procedural and regulatory requirements, including lists of eligible goods. Categorising remanufactured goods under responsible agencies such as the National Broadcasting and Telecommunication Commission, Ministry of Industry, or Ministry of Public Health would enhance compliance with these requirements.

At the international level, capacity-building activities should be conducted through forums or by FTA partners experienced in this area. For instance, the Association of Southeast Asian Nations (ASEAN) could organize symposiums, training sessions, or workshops aligned with the Circular Economy Framework to promote mutual recognition and trade facilitation of circular goods. These initiatives should include sharing knowledge and best practices from experienced countries, both members and non-members. Customs officers' workshops should cover topics such as the characteristics of remanufactured goods, border treatment, and origin verification.

Regarding HS classification, the recent HS 2022 revision does not extensively cover remanufactured goods beyond specific items such as retreaded tyres classified under 4012.11, 4012.12, 4012.13, and 4012.19. If there is significant interest or trade volume in specific types of remanufactured goods imported into Thailand, establishing national statistical codes for these goods would be beneficial for monitoring and statistical purposes. This initiative could be further proposed by Thai Customs during the WCO HS review cycle for considering new provision of the HS, if there is global interest and technical feasibility at the HS level.

Summary

Greening towards a circular economy is not just a passing trend but a crucial imperative for achieving sustainable development globally. The concept focuses on prolonging product life cycles through practices like reuse, repair, remanufacturing, and recycling, thereby minimising waste and maximising resources. This approach offers substantial environmental benefits while also generating economic opportunities for communities worldwide.

Recognising these advantages, international organizations, regional networks, and nations are increasingly adopting circular economy principles to meet their sustainability objectives. In Thailand, efforts outlined in the National Strategy (2018-2037) aim to transition towards a circular economy, yet remanufacturing has not been fully integrated into national policy frameworks. Remanufacturing plays a pivotal role in realizing the circular economy's potential by restoring used goods or cores to like-new condition. This process not only preserves original performance but also contributes to waste reduction, energy conservation, cost savings, and the growth of skilled labour, thereby fostering economic resilience.

However, remanufactured goods face significant challenges in international trade, primarily due to the lack of a standardised definition and trade barriers imposed by importing countries that often categorise them as used goods. The absence of a clear policy framework for remanufacturing within Thailand exacerbates these challenges, leading to uncertainty in policy negotiations, conflicting perspectives among governmental bodies, and inconsistencies in regulatory interpretation and enforcement.

Furthermore, while Thailand has taken steps such as banning the import of e-waste in 2020 to combat environmental hazards associated with illegal dumping, the impact on the recycling industry has been more pronounced than on remanufacturing due to the distinct nature of e-waste materials.

Within the context of trade agreements, Thailand's involvement in 15 Free Trade Agreements (FTAs) includes provisions related to circular trade and remanufacturing processes under the rules of origin chapters, particularly through the concept of wholly obtained products. These agreements acknowledge categories like waste, scrap, used goods, and recovered parts or raw materials from used goods as potentially qualifying for originating status, albeit subject to varying requirements across different FTAs. However, practical implementation of these provisions for circular activities faces challenges posed by existing import constraints.

While Thailand's commitment to a circular economy is evident through strategic initiatives and participation in international trade agreements, addressing the complexities surrounding remanufacturing requires clearer policy direction, harmonised definitions, and enhanced regulatory frameworks. By overcoming these barriers, Thailand can effectively leverage remanufacturing as a cornerstone of its sustainable development agenda, promoting both economic prosperity and environmental stewardship in the region and beyond.

To enhance international trade in remanufactured goods and position Thailand as a remanufacturing centre, several key provisions and strategies must be carefully implemented. Analysing the provisions in various trade agreements and their impact on remanufacturing activities reveals critical insights.

First, clear definitions of "recovered materials" and "remanufactured goods" are essential. These definitions should undergo stakeholders' consultations to ensure consensus on remanufacturing processes and classification under appropriate Harmonized System (HS) codes. This clarity is important for distinguishing remanufactured goods from used goods in international trade, thereby facilitating smoother market access and regulatory compliance.

Secondly, market access provisions should adopt a negative approach, specifying that prohibitions or restrictions on used goods shall not apply to remanufactured goods. This should be clarified alongside exceptions to international trade regulations under Article XI of the GATT 1994. Establishing robust labelling or technical regulations for consumer protection is also pivotal, accompanied by a transitional period for industries to adapt. This approach ensures that remanufactured goods receive equitable treatment in global markets, fostering consumer trust and facilitating market penetration.

Thirdly, establishing an origin element within trade agreements is crucial. This element would enable remanufactured goods to meet Product-Specific Rules (PSRs) under rules of origin, regardless of the core's origin. This flexibility encourages sourcing of cores from diverse global markets, supporting the sustainable growth of remanufacturing industries.

At the national level, Thailand should streamline its regulatory framework by eliminating import constraints on used goods, particularly those supported by governmental policies, while maintaining rigorous import licensing requirements for items like used electrical and electronic equipment (EEE). Clear definitions of "remanufacturing" or "refurbishment" in national laws is essential to regulate these practices effectively, ensuring health, safety, and environmental standards are met. Additionally, the establishment of technical standards and certification systems enhances consumer confidence in remanufactured products, driving market demand.

Internationally, developing comprehensive guidelines for determining the originating status of remanufactured goods under Free Trade Agreements (FTAs) is critical. This effort promotes a unified understanding among trading partners, facilitating smoother international trade flows and reducing barriers for remanufacturing countries like Thailand.

While, in the role of an importing country rather than a remanufacturer, the study argues that the definition of "recovered materials" and "remanufactured goods" and provisions in the market access chapter are justifiable. A favourable origin requirement for remanufacturing countries might not be necessary in this case.

To ensure smooth implementation at the national level, Thailand could adopt administrative controls on the import of remanufactured goods, given the limited experience among consumers, private sectors, regulatory authorities, and Customs officers. Strong cooperation among all stakeholders is required to establish clear procedures and requirements, along with a list of HS codes considered as remanufactured goods. The list should be provided based on the responsible regulatory agencies to facilitate business in the application of this regulation.

At the international level, the international network or FTA partners should support by providing capacity building activities for both business and officers. Additionally, due to HS code constraints, monitoring of imported remanufactured goods can be done through the national statistic code.

In conclusion, while the roles of a remanufacturing centre and an importing country differ, both require concerted efforts to harmonise regulatory frameworks and facilitate trade under FTAs. Thailand's journey towards becoming a remanufacturing hub or an importing country necessitates collaborative efforts among stakeholders to establish clear procedures and regulatory

requirements. By leveraging international partnerships and capacity-building initiatives, Thailand can capitalize on its potential in the remanufacturing sector, driving sustainable economic growth and contributing to global environmental goals.

Annex I: Comparison of Wholly Obtained Articles from 15 FTAs in Thailand

Bilateral Agreements

FTA	Article	Text
Thailand-Australia	Article 401 Definitions	<p>For the purposes of this Chapter: ...</p> <p>(h) “wholly obtained goods” means: ...</p> <p>(ix) waste and scrap derived from production in the territory of a Party, or used goods collected in the territory of a Party, provided such goods are fit only for the recovery of raw materials; and...</p>
Thailand-New Zealand	Article 4.1 Definitions	<p>For the purposes of this Chapter: ...</p> <p>(n) “wholly obtained goods” means: ...</p> <p>(ix) waste and scrap derived from production in the territory of a Party, or used goods collected in the territory of a Party, provided that such goods are fit only for the recovery of raw materials; and...</p>
Thailand-Japan	Article 28 Originating Goods	<p>2. For the purposes of subparagraph 1 (a) above, the following goods shall be considered as being wholly obtained or produced entirely in a Party: ...</p> <p>(i) articles collected in the Party which can no longer perform their original purpose in the Party nor are capable of being restored or repaired and which are fit only for disposal or for the recovery of parts or raw materials;</p> <p>(j) scrap and waste derived from manufacturing or processing operations or from consumption in the Party and fit only for disposal or for the recovery of raw materials;</p> <p>(k) parts or raw materials recovered in the Party from articles which can no longer perform their original purpose nor are capable of being restored or repaired; and...</p>
Thailand-Peru	Article 3 Wholly Obtained or Produced Entirely Goods	<p>Within the meaning of Article 2 (1) (a), the following shall be considered as wholly obtained or produced entirely goods in the territory of one or both Parties: ...</p> <p>(h) waste and scrap derived from production in the territory of one or both Parties, or used goods collected in the territory of one or both Parties, provided that such goods are fit only for the recovery of raw materials; and...</p>

Thailand-Chile	Article 4.3 Wholly Obtained or Produced Goods	<p>The following goods shall be considered as wholly obtained or produced entirely in the territory of a Party:</p> <p>...</p> <p>(j) waste or scrap collected or derived from production in the territory of the Party and are fit only for the recovery of raw materials;</p> <p>(k) used goods and goods collected there which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for disposal or recovery of parts of raw materials, or for recycling purposes; and...</p>
Thailand-India	Rule 5 Wholly produced or obtained	<p>Within the meaning of Rule 4 (a), the following shall be considered as wholly produced or obtained in a Party</p> <p>...</p> <p>(i) Articles collected there which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for disposal or recovery of parts of raw materials, or for recycling purposes⁸; and...</p> <p>Footnote 8: This would cover all scrap and waste including scrap and waste resulting from manufacturing or processing operations or consumption in the same country, scrap machinery, discarded packaging and all products that can no longer perform the purpose for which they were produced and are fit only for the recovery of raw materials. Such manufacturing or processing operations shall include all types of processing, not only industrial or chemical but also mining, agriculture, construction, refining, incineration and sewage treatment operations</p>
Thailand-Sri Lanka	Article 3.3 Wholly Obtained or Produced Goods	<p>The following goods shall be considered as wholly obtained or produced entirely in the territory of a Party:</p> <p>...</p> <p>(j) waste or scrap derived from:</p> <p style="padding-left: 40px;">(i) production carried out there, or</p> <p style="padding-left: 40px;">(ii) used goods collected or salvaged there, provided that the waste or scrap is fit only for the recovery of raw materials; and...</p>

Multilateral Agreements

FTA	Article	Text
ASEAN Trade in Goods Agreement (ATIGA)	Article 27 Wholly Obtained or Produced Goods	<p>Within the meaning of Article 26 (a), the following shall be considered as wholly obtained or produced in the exporting Member State:</p> <p>...</p> <p>(i) Articles collected there which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for disposal or recovery of parts of raw materials, or for recycling purposes;</p> <p>(j) Waste and scrap derived from:</p> <p style="padding-left: 40px;">(i) production in the exporting Member State; or</p> <p style="padding-left: 40px;">(ii) used goods collected in the exporting Member State, provided that such goods are fit only for the recovery of raw materials; and...</p>
ASEAN-Australia-New Zealand (The Second Protocol)	Article 3 Goods Wholly Produced or Obtained	<p>For the purposes of Article 2.1 (a) (Originating Goods), the following goods shall be considered as wholly produced or obtained in a Party:</p> <p>...</p> <p>(i) goods which are:</p> <p style="padding-left: 40px;">(i) waste and scrap derived from production and consumption in a Party provided that such goods are fit only for the recovery of raw materials; or</p> <p style="padding-left: 40px;">(ii) used goods collected in a Party provided that such goods are fit only for the recovery of raw materials; and</p>
ASEAN-China	Article 3 Goods Wholly Produced or Obtained	<p>For the purposes of Article 2 (a), the following goods shall be considered as wholly produced or obtained:</p> <p>...</p> <p>i) waste and scrap derived from production process or from consumption in a Party provided that such goods are fit only for the recovery of raw materials; or</p> <p>j) used goods consumed and collected in a Party provided that such goods are fit only for the recovery of raw materials; and...</p>

ASEAN-India	Rule 3 Wholly Produced or Obtained Products	<p>Within the meaning of Rule 2 (a), the following shall be considered as wholly produced or obtained in a Party:</p> <p>...</p> <p>(i) articles collected in the Party which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for disposal or recovery of parts of raw materials, or for recycling purposes⁴; and...</p> <p>Footnote 4: This would cover all scrap and waste including scrap and waste resulting from manufacturing or processing operations or consumption in the same country, scrap machinery, discarded packaging and all products that can no longer perform the purpose for which they were produced and are fit only for disposal for the recovery of raw materials. Such manufacturing or processing operations shall include all types of processing, not only industrial or chemical but also mining, agriculture, construction, refining, incineration and sewage treatment operations.</p>
ASEAN-Japan	Article 25 Goods Wholly Obtained or Produced	<p>For the purposes of paragraph (a) of Article 24, the following shall be considered as wholly obtained or produced entirely in a Party:</p> <p>...</p> <p>(i) articles collected in the Party which can no longer perform their original purpose or to be restored or repaired, and are fit only for disposal, for the recovery of parts or raw materials, or for recycling purposes;</p> <p>(j) scrap and waste derived from manufacturing or processing operations, including mining, agriculture, construction, refining, incineration and sewage treatment operations, or from consumption in the Party, and fit only for disposal or for the recovery of raw materials; and...</p>
ASEAN-South Korea	Rule 3 Wholly Obtained or Produced Goods	<p>Within the meaning of paragraph 1 (a) of Rule 2, the following shall be considered to be wholly obtained or produced in the territory of a Party:</p> <p>...</p> <p>(j) articles collected from there which can no longer perform their original purpose nor are capable of being restored or repaired and are fit only for the disposal or recovery of parts of raw materials, or for recycling purposes;</p> <p>(k) waste and scrap derived from:</p> <p style="padding-left: 40px;">(i) production there; or</p> <p style="padding-left: 40px;">(ii) used goods collected there, provided that such goods are fit only for the recovery of raw materials; and...</p>

ASEAN-Hong Kong	Article 4 Wholly Obtained or Produced Goods	<p>For the purposes of subparagraph (a) of Article 3 (Origin Criteria), the following goods shall be considered as wholly obtained or produced in the exporting Party:</p> <p>...</p> <p>(i) goods which are:</p> <p style="padding-left: 40px;">(i) waste and scrap derived from production and consumption in a Party, provided that such goods are fit only for the recovery of raw materials or for recycling purposes; or</p> <p style="padding-left: 40px;">(ii) used goods collected in a Party, provided that such goods are fit only for the recovery of raw materials or for recycling purposes; and...</p>
Regional Comprehensive Economic Partnership (RCEP)	Article 3.3 Goods Wholly Obtained or Produced	<p>For the purposes of Article 3.2 (Originating Goods), the following goods shall be considered as wholly obtained or produced in a Party:</p> <p>...</p> <p>(i) goods which are:</p> <p style="padding-left: 40px;">(i) waste and scrap derived from production or consumption there, provided that such goods are fit only for disposal, for the recovery of raw materials, or for recycling purposes; or</p> <p style="padding-left: 40px;">(ii) used goods collected there, provided that such goods are fit only for disposal, for the recovery of raw materials, or for recycling purposes; and...</p>

Annex II: Comparison of Definition Provisions

FTA/Article	Recovered material	Remanufactured goods
<p>USMCA/ Article 1.5: General Definitions</p>	<p>recovered material means a material in the form of one or more individual parts that results from:</p> <p>(a) the disassembly of a used good into individual parts; and</p> <p>(b) the cleaning, inspecting, testing or other processing of those parts as necessary for improvement to sound working condition;</p>	<p>remanufactured good means a good classified in HS Chapters 84 through 90 or under heading 94.02 except goods classified under HS headings 84.18, 85.09, 85.10, and 85.16, 87.03 or subheadings 8414.51, 8450.11, 8450.12, 8508.11, and 8517.11, that is entirely or partially composed of recovered materials and:</p> <p>(a) has a similar life expectancy and performs the same as or similar to such a good when new; and</p> <p>(b) has a factory warranty similar to that applicable to such a good when new;</p>
<p>CPTPP/ Article 1.3: General Definitions</p>	<p>recovered material means a material in the form of one or more individual parts that results from:</p> <p>(a) the disassembly of a used good into individual parts; and</p> <p>(b) the cleaning, inspecting, testing or other processing of those parts as necessary for improvement to sound working condition;</p>	<p>remanufactured good means a good classified in HS Chapters 84 through 90 or under heading 94.02 except goods classified under HS headings 84.18, 85.09, 85.10, and 85.16, 87.03 or subheadings 8414.51, 8450.11, 8450.12, 8508.11, and 8517.11, that is entirely or partially composed of recovered materials and:</p> <p>(a) has a similar life expectancy and performs the same as or similar to such a good when new; and</p> <p>(b) has a factory warranty similar to that applicable to such a good when new;</p>

<p>U.S.-Australia/ Article 5.18: Definitions</p>	<p>recovered goods means materials in the form of individual parts that result from:</p> <p>(a) the complete disassembly of goods which have passed their life expectancy, or are no longer useable due to defects, into individual parts; and</p> <p>(b) cleaning, inspecting, or testing, or other processes as necessary for improvement to sound working condition of such individual parts;</p>	<p>remanufactured good means an industrial good assembled in the territory of a Party, falling within Chapter 84, 85, or 87 or heading 90.26, 90.31, or 90.32, except a good under heading 84.18, 85.16, or 87.01 through 87.06 that:</p> <p>(a) is entirely or partially comprised of recovered goods;</p> <p>(b) has a similar life expectancy to, and meets the same performance standards as, a new good; and</p> <p>(c) enjoys a factory warranty similar to such a new good;</p>
<p>EU-Japan/ Article 2.18 Remanufactured goods</p>	<p>Not available</p>	<p>‘remanufactured goods’ means goods classified under heading 40.12, Chapters 84 to 90 or heading 94.02 of the Harmonized System that: ⁽¹⁾</p> <p>(a) are entirely or partially composed of parts obtained from used goods;</p> <p>(b) have a similar life expectancy and performance compared to such goods, when new; and</p> <p>(c) have a factory warranty similar to that applicable to such goods, when new.</p> <p>Footnote: (1) For greater certainty, the references to the tariff classification number of the Harmonized System in this Chapter are based on the Harmonized System, as amended on 1 January 2017.</p>

<p>EU-Vietnam/ Article 2.3 Definitions</p>	<p>Not available</p>	<p>"remanufactured good" means a good classified in HS Chapter 84, 85, 87, 90 or heading 94.02, except those listed in Appendix 2-A-5 (Goods Excluded from the Definition of Remanufactured Goods), which:</p> <p>(i) is entirely or partially comprised of parts obtained from goods that have been used beforehand; and</p> <p>(ii) has similar performance and working conditions as well as life expectancy compared to the original new good and is given the same warranty as the original new good.</p>
<p>UK-Australia/ Article 1.4 General Definitions</p>	<p>"recovered material" means a material comprising one or more individual parts that results from:</p> <p>(a) the disassembly of a used good into individual parts; and</p> <p>(b) the cleaning, testing or other processing of those individual parts as necessary for improvement to sound working condition;</p>	<p>"remanufactured good" means a good classified in HS Chapters 84 through 90, or under heading 94.02, except a good classified under HS headings 87.02, 87.03, 87.04, 87.05, 87.11 and 87.16, or subheading 8701.20 that:</p> <p>(a) is entirely or partially comprised of parts that are recovered materials;</p> <p>(b) has similar life expectancy, working conditions and performance to the equivalent good in new condition; and</p> <p>(c) is given a warranty in substance the same as the equivalent good in new condition;</p>

Annex III: Comparison of Market Access Provisions

FTA	Chapter/Annex	Article	Text
USMCA (2020)	Chapter 2 National Treatment and Market Access for Goods	Article 2.12: Remanufactured Goods	<p>1. For greater certainty, Article 2.11.1 (Import and Export Restrictions) applies to prohibitions and restrictions on a remanufactured good.</p> <p>2. Subject to its obligations under this Agreement and the WTO Agreement, a Party may require that a remanufactured good:</p> <ul style="list-style-type: none"> (a) be identified as such, including through labelling, for distribution or sale in its territory, and (b) meet all applicable technical requirements that apply to an equivalent good in new condition. <p>3. If a Party adopts or maintains a prohibition or a restriction on a used good, it shall not apply the measure to a remanufactured good.</p>
CPTPP (2018)	Chapter 2 National Treatment and Market Access for Goods	Article 2.11: Remanufactured Goods	<p>1. For greater certainty, Article 2.10.1 (Import and Export Restrictions) shall apply to prohibitions and restrictions on the importation of remanufactured goods.</p> <p>2. If a Party adopts or maintains measures prohibiting or restricting the importation of used goods, it shall not apply those measures to remanufactured goods.^{5, 6}</p> <p>Footnote:</p> <p>5 For greater certainty, subject to its obligations under this Agreement and the WTO Agreement, a Party may require that remanufactured goods:</p> <ul style="list-style-type: none"> (a) be identified as such for distribution or sale in its territory; and (b) meet all applicable technical requirements that apply to equivalent goods in new condition. <p>6 This paragraph shall not apply to the treatment of certain remanufactured goods by Viet Nam as set out in Annex 2-B (Remanufactured Goods).</p>

	ANNEX 2-B Remanufactured Goods		<p>1. Article 2.11.2 (Remanufactured Goods) shall not apply to measures of Viet Nam prohibiting or restricting the importation of remanufactured goods for three years after the date of entry into force of this Agreement for Viet Nam. Thereafter, Article 2.11.2 (Remanufactured Goods) shall apply to all measures of Viet Nam, except as provided in paragraph 2 of this Annex.</p> <p>2. Article 2.11.2 (Remanufactured Goods) shall not apply to a prohibition or restriction set out in Decree No. 187/2013/ND-CP dated 20 November 2013 of the Government of Viet Nam or Circular No. 04/2014/TT-BCT dated 27 January 2014 of the Ministry of Industry and Trade on the importation of a good listed in Table 2-B-1.</p> <p>3. For greater certainty, Viet Nam shall not:</p> <p>(a) apply any prohibition or restriction on the importation of a remanufactured good that is more stringent than the prohibition or restriction it applies to the importation of the same good when used; or</p> <p>(b) re-impose any prohibition or restriction on the importation of a remanufactured good following the removal of the prohibition or restriction.</p>
U.S.- Australia (2005)	Not available	Not available	Not available
EU-Japan (2019)	Chapter 2 Trade in Goods Section B National treatment and market access for goods	Article 2.18 Remanufactured Goods	1. Unless otherwise provided for in this Agreement, each Party shall provide that remanufactured goods are treated as new goods. Each Party may require that remanufactured goods be identified as such for distribution or sale...
EU- Vietnam (2019)	Chapter 2 National Treatment and Market Access for Goods	Article 2.6 Remanufactured Goods	The Parties shall accord to remanufactured goods the same treatment as that accorded to new like goods. A Party may require specific labelling of remanufactured goods in order to prevent deception of consumers. Each Party shall implement this Article within a transitional period of no longer than three

			years from the date of entry into force of this Agreement.
UK-Australia (2023)	Chapter 2 Trade in Goods	Article 2.15 Remanufactured Goods	<p>1. Unless otherwise provided for in this Agreement, neither Party shall accord to a remanufactured good of the other Party treatment that is less favourable than that it accords to equivalent goods in new condition.</p> <p>2. Paragraph 1 shall not apply to consumer guarantees provided for in a Party's laws and regulations.</p> <p>3. If a Party adopts or maintains import and export prohibitions or restrictions on used goods on the basis that they are used goods, it shall not apply those measures to remanufactured goods. For greater certainty, Article 2.9 (Import and Export Restrictions) shall apply to prohibitions and restrictions on the importation of remanufactured goods.</p> <p>4. Subject to its obligations under this Agreement and the WTO Agreement, a Party may require that remanufactured goods be identified as such for distribution or sale in its territory and that they meet all applicable technical requirements that apply to equivalent goods in new condition.</p>

Annex IV: Comparison of Origin Provisions

FTA	Chapter/Annex	Article	Text
USMCA (2020)	Chapter 4 Rules of Origin	Article 4.4: Treatment of Recovered Materials Used in the Production of a Remanufactured Good	<p>1. Each Party shall provide that a recovered material derived in the territory of one or more of the Parties is treated as originating when it is used in the production of, and incorporated into, a remanufactured good.</p> <p>2. For greater certainty:</p> <p>(a) a remanufactured good is originating only if it satisfies the applicable requirements of Article 4.2 (Originating Goods); and</p> <p>(b) a recovered material that is not used or incorporated in the production of a remanufactured good is originating only if it satisfies the applicable requirements of Article 4.2 (Originating Goods).</p>
CPTPP (2018)	Chapter 3 Rules of Origin and Origin Procedures	Article 3.4: Treatment of Recovered Materials Used in Production of a Remanufactured Good	<p>1. Each Party shall provide that a recovered material derived in the territory of one or more of the Parties is treated as originating when it is used in the production of, and incorporated into, a remanufactured good.</p> <p>2. For greater certainty:</p> <p>(a) a remanufactured good is originating only if it satisfies the applicable requirements of Article 3.2 (Originating Goods); and</p> <p>(b) a recovered material that is not used or incorporated in the production of a remanufactured good is originating only if it satisfies the applicable requirements of Article 3.2 (Originating Goods).</p>
U.S.- Australia (2005)	Chapter 5 Rules of Origin	Article 5.18: Definitions	<p>5. good wholly obtained or produced entirely in the territory of one or both of the Parties means a good that is:</p> <p>...</p> <p>(j) a recovered good derived there, from goods that have passed their life expectancy, or are no longer useable due to defects, and utilized there in the production of remanufactured goods; or...</p>
EU- Japan (2019)	Not available	Not available	Not available

EU-Vietnam (2019)	Not available	Not available	Not available
UK-Australia (2023)	Chapter 4 Rules of Origin and Origin Procedures	Article 4.8 Recovered Materials and Remanufactured Goods	<p>1. A recovered material derived in the territory of one or both of the Parties shall be treated as originating when it is used in the production of, and incorporated into, a remanufactured good.</p> <p>2. For greater certainty:</p> <p style="padding-left: 20px;">(a) a remanufactured good shall be treated as originating only if it satisfies the applicable requirements of Article 4.2 (Origin Criteria); and</p> <p style="padding-left: 20px;">(b) a recovered material that is not used or incorporated in the production of a remanufactured good shall be treated as originating only if it satisfies the applicable requirements of Article 4.2 (Origin Criteria).</p>

Abbreviations

4R2S	Repair, Reuse, Recycle and Remanufacture, and Service and Spare Parts
AEC	ASEAN Economic Community
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
HS	Harmonized System
ATIGA	ASEAN Trade in Goods Agreement
BCG	Bio-Circular-Green Economy
BSI	British Standards Institution
BOI	Board of Investment of Thailand
CBP	U.S. Customs and Border Protection
CFR	Code of Federal Regulations
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CTC	Change in Tariff Classification
CTSH	Change in Tariff Subheading
DFT	Department of Foreign Trade
DITTA	Global Diagnostic Imaging, Healthcare ICT, and Radiation Therapy Trade Association
ECLAC	Economic Commission for Latin America and the Caribbean
EEE	Electric and Electronic Equipment
ERN	European Remanufacturing Network
EU	European Union
FDA	Food and Drug Administration
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GRP	Good Refurbishment Practice
GRPMD	Good Refurbishment Practice of Medical Device
HDOR	Heavy Duty and Off-Road
IEAT	Industrial Estate Authority of Thailand
IEC	International Electrotechnical Commission
JTEPA	Japan - Thailand Economic Partnership Agreement
KATS	Korean Agency for Technology and Standards
MARR	Malaysia Automotive Remanufacturing Roadmap
MEA	Multilateral Environmental Agreement
MOTIE	Ministry of Trade, Industry and Energy
MS	Malaysian Standards
OEM	Original Equipment Manufacturer
PSR	Product-Specific Rules
RCEP	Regional Comprehensive Economic Partnership
RTA	Regional Trade Agreement
RVC	Regional Value Content
SDG	Sustainable Development Goals
SME	Small and Medium-sized Enterprise
UEEE	Used Electric and Electronic Equipment
UK	United Kingdom
UN	United Nations
U.S.	United States
USAID	United States Agency for International Development
USITC	United States International Trade Commission
USMCA	United States-Mexico-Canada Agreement

USTR United States Trade Representative
WCO World Customs Organization
WTO World Trade Organization

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