

Centre of Environmental Research

Waste Management,
Circular Economy and
Environmental Security

WP 1.B NEW TYPES OF WASTE AND TECHNOLOGIES

Environment - Environment for Life
12. – 14. 9. 2022



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Project SS02030008 Centre of Environmental Research: Waste Management, Circular Economy and Environmental Security is co-financed with the state support of the Technology Agency of the Czech Republic as part of the Environment for Life Program.

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ANALYSIS OF TEXTILE WASTE STREAMS IN THE CZECH REPUBLIC

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Presentation structure



The EU and problem of textile waste

- Facts, numbers and Circular Economy Action Plan

CEVOOH project

- Textile waste as a part of CEVOOH project

Textile waste streams in the Czech Republic

- Data and figures





Textile industry: facts



- ➡ Textile sector in Europe employs 1.7 million people and Europeans consume around **26 kg of different textiles** per person annually;
- ➡ Life cycle of clothing items is shorter nowadays because of **the phenomenon of fast fashion**;
- ➡ Textile sector is **the fourth highest pressure category** (after food, housing and transport) for use of primary resources and water;
- ➡ Environmental impacts in a connection with textile industry include **resource use, land use and pollutant releases**.



Textile industry: numbers

EU household consumption of clothing in 2020

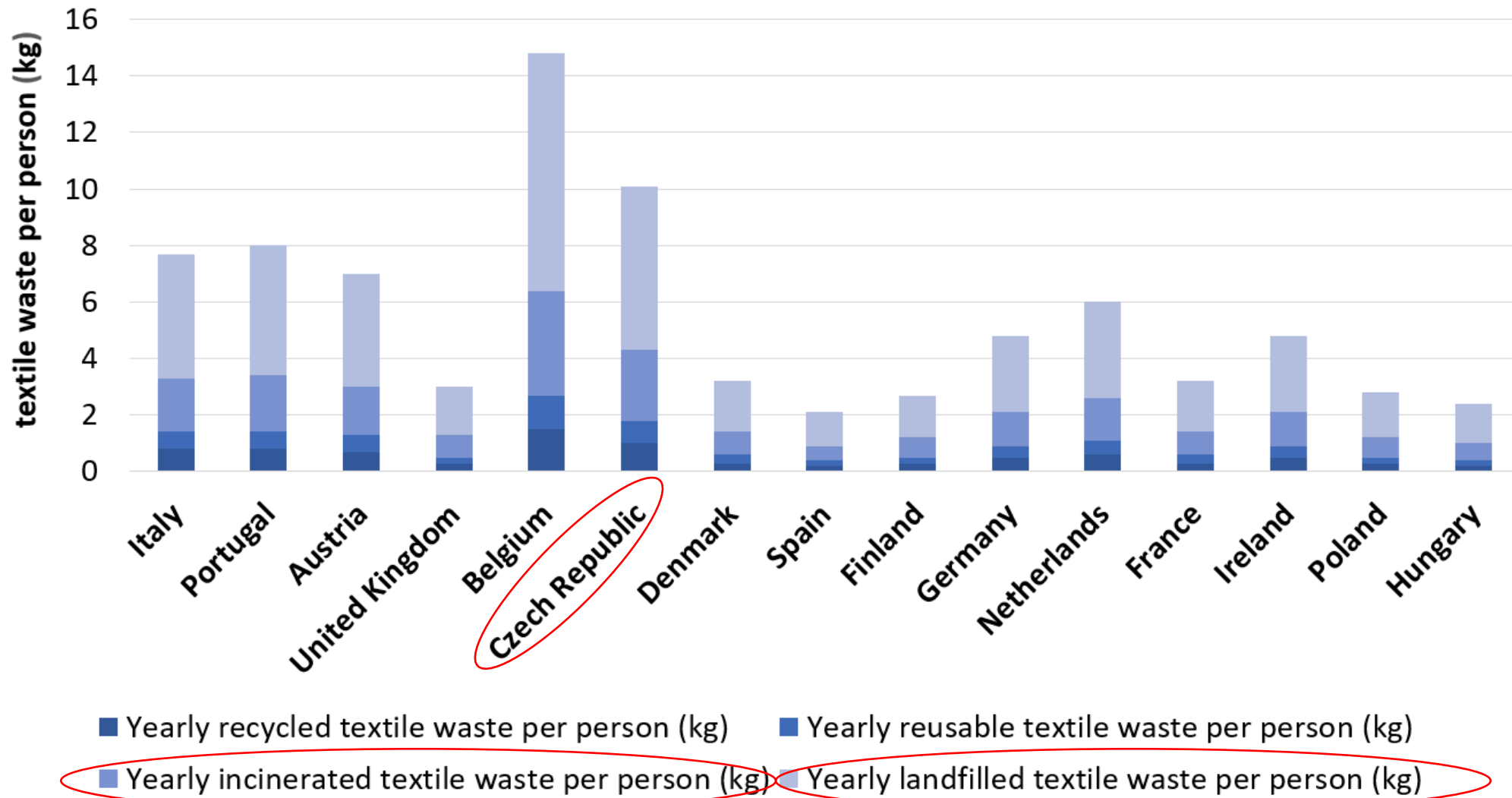
EUR at current prices, per capita



Luxembourg
Austria
Netherlands
Denmark
Italy
Germany
Belgium
Ireland
Cyprus
Finland
Sweden
Portugal
EU- 27
Malta
Slovenia
Estonia
France
Lithuania
Spain
Latvia
Poland
Romania
Slovakia
Greece
Croatia
Czechia
Hungary
Bulgaria

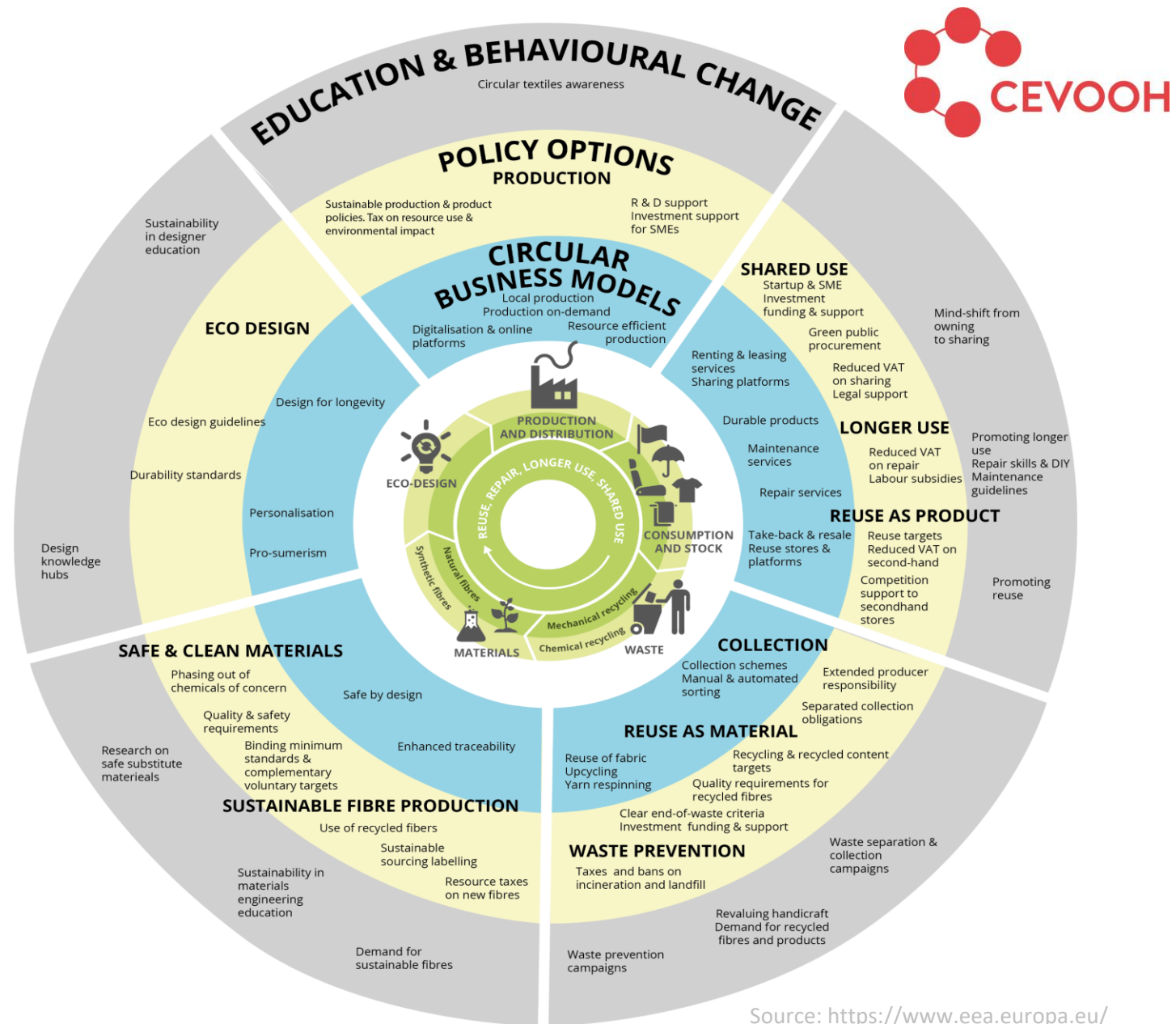
Source: EUROSTAT, EURATEX

Textile waste treatment in the EU



Circular Economy Action Plan (CEAP)

- ✓ Adopted by the Commission on the 11th of March 2020
- ✓ Transition of the European economy from a linear to a circular model
- ✓ Achieving a cleaner, climate-neutral, resource-efficient and competitive economy
- ✓ Implementation of principals of CEAP into the legislation of each Member state



Source: <https://www.eea.europa.eu/>





Center of environmental research

- CEVOOH is formed by a consortium of eight research organizations and universities and focused on **transition from a linear to a circular economic model in the Czech Republic**
- Transition to the circular economy requires research in new areas such as material flows, innovative technologies to minimize the usage of primary raw materials in production, maximum material usability and recovery of waste, ecodesign of products, monitoring and evaluation of not only environmental, but also socio-economic processes
- CEVOOH is divided into work packages and a part of a work package 1.B. is an interesting waste stream - **textile waste**



Project aims

- ➡ To determine the **current state** with textiles and textile waste streams in the Czech Republic;
- ➡ To create a **material flow analysis** (MFA);
- ➡ **To optimize** textile waste treatment and collection system.



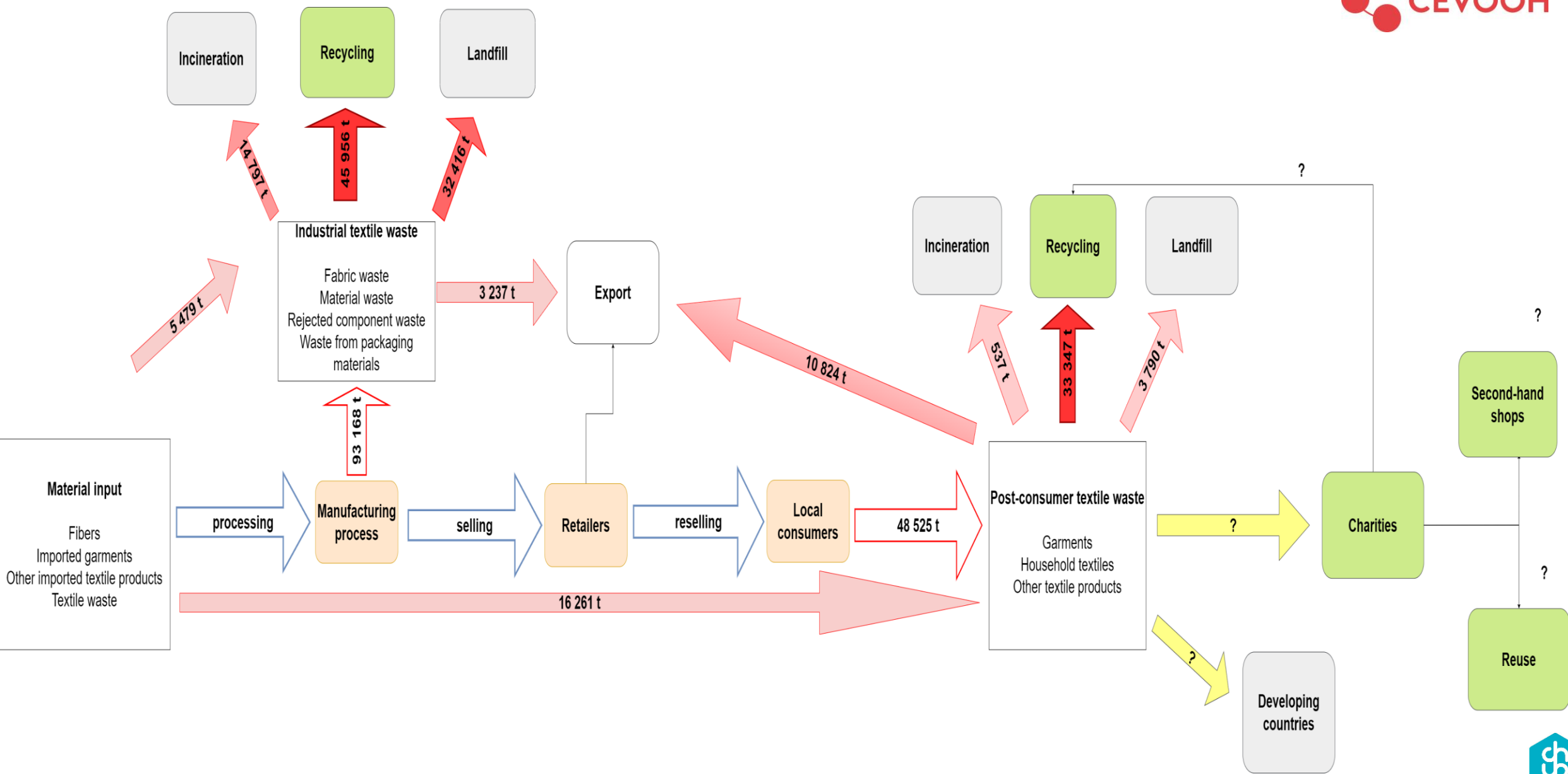
Important textile waste codes from the List of waste



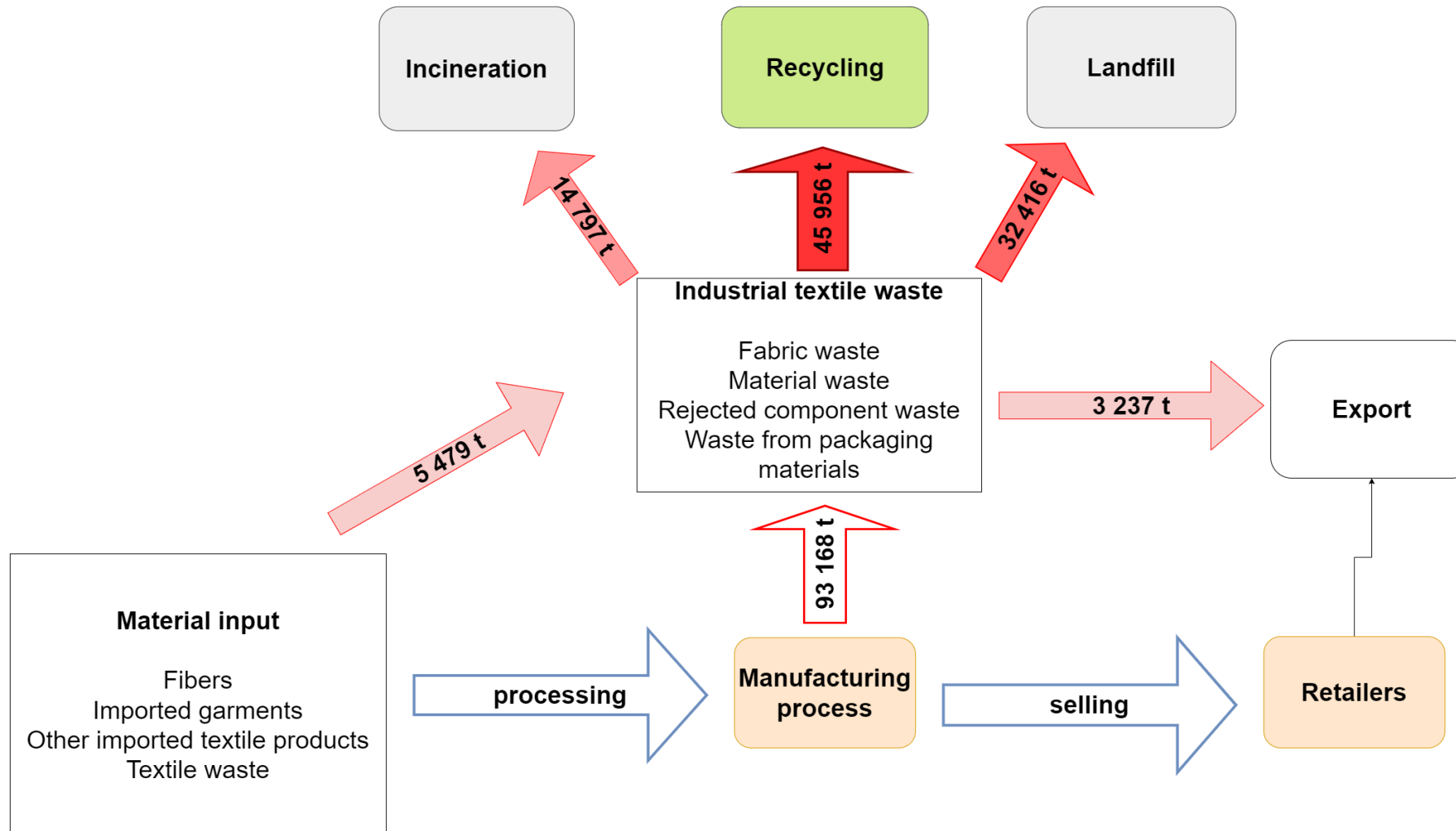
Skupina/druh odpadu	Název
4	Odpady z kožedělného, kožešnického a textilního průmyslu
04 02 09	Odpady z kompozitních tkanin (impregnované tkaniny, elastomer, plastomer)
04 02 10	Organické hmoty z přírodních produktů (např. tuk, vosk)
04 02 14*	Odpady z apertace obsahující organická rozpouštědla
04 02 15	Jiné odpady z apertace neuvedené pod číslem 04 02 14
04 02 16*	Barviva a pigmenty obsahující nebezpečné látky
04 02 17	Jiná barviva a pigmenty neuvedené pod číslem 04 02 16
04 02 19*	Kaly z čištění odpadních vod v místě jejich vzniku obsahující nebezpečné látky
04 02 20	Jiné kaly z čištění odpadních vod v místě jejich vzniku neuvedené pod číslem 04 02 19)
04 02 21	Odpady z nezpracovaných textilních vláken
04 02 22	Odpady ze zpracovaných textilních vláken
04 02 99	Odpady jinak blíže neurčené
19	Odpady ze zařízení určeného pro nakládání s odpady, z čistíren odpadních vod pro čištění těchto vod mimo místo jejich vzniku a z výroby pro spotřebu lidí a vody pro průmyslové účely
19 12 08	Textil
20	Komunální odpady (odpady z domácností a podobné živnostenské, průmyslové odpady a odpady z úřadů), včetně složek z odděleného sběru
20 01 10	Oděvy
20 01 11	Textilní materiály



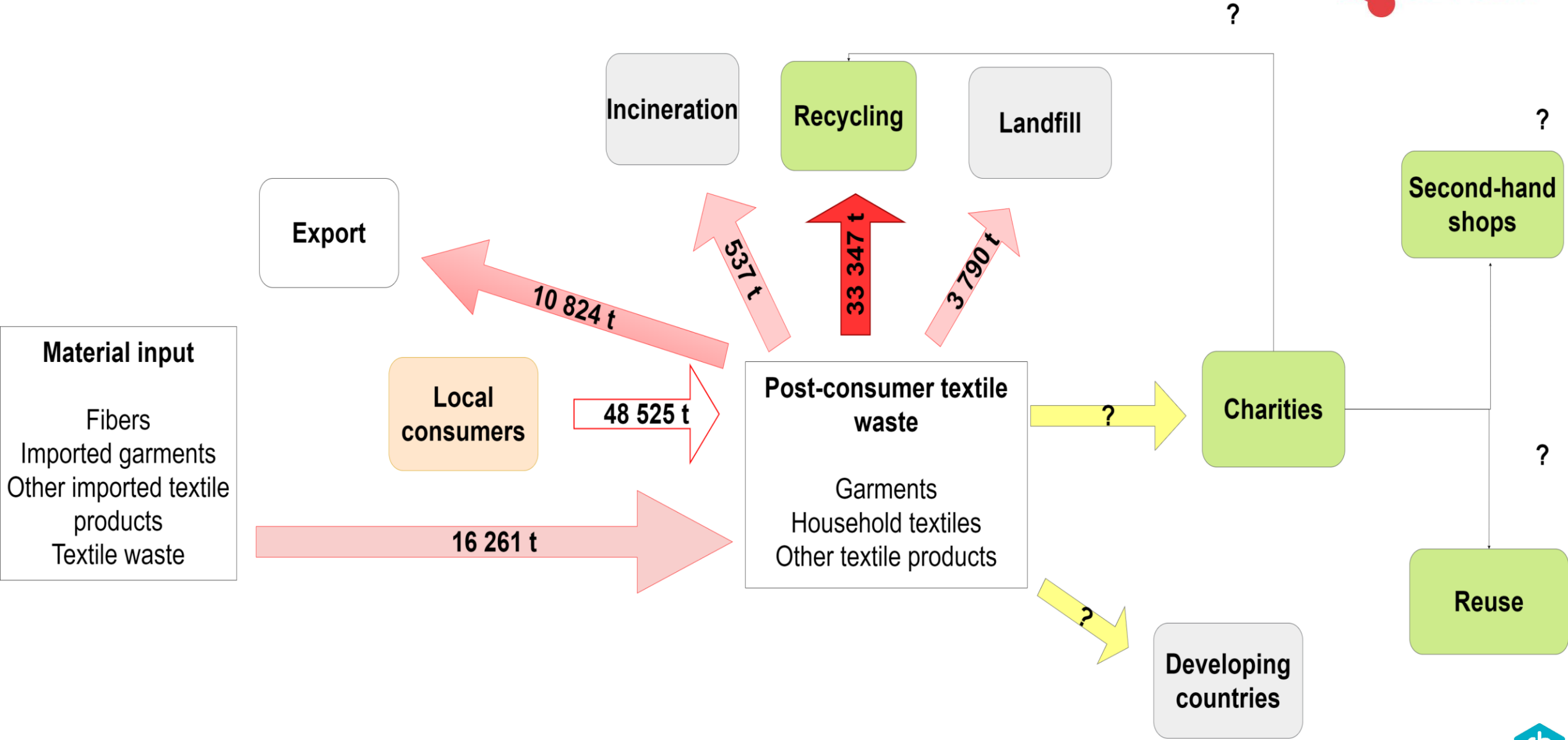
Textile waste flows 2019



Industrial textile waste stream 2019



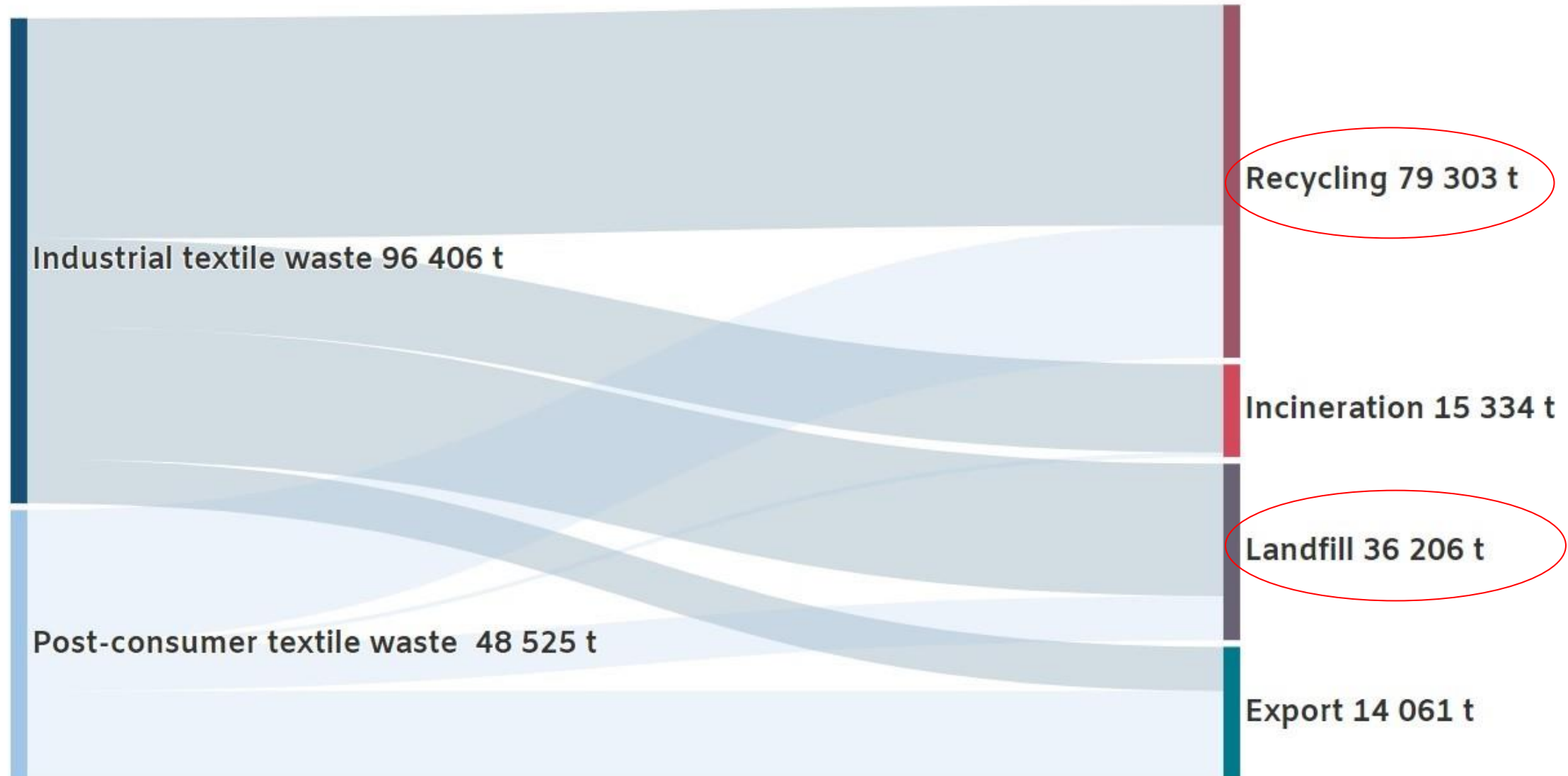
Post-consumer textile waste flows 2019



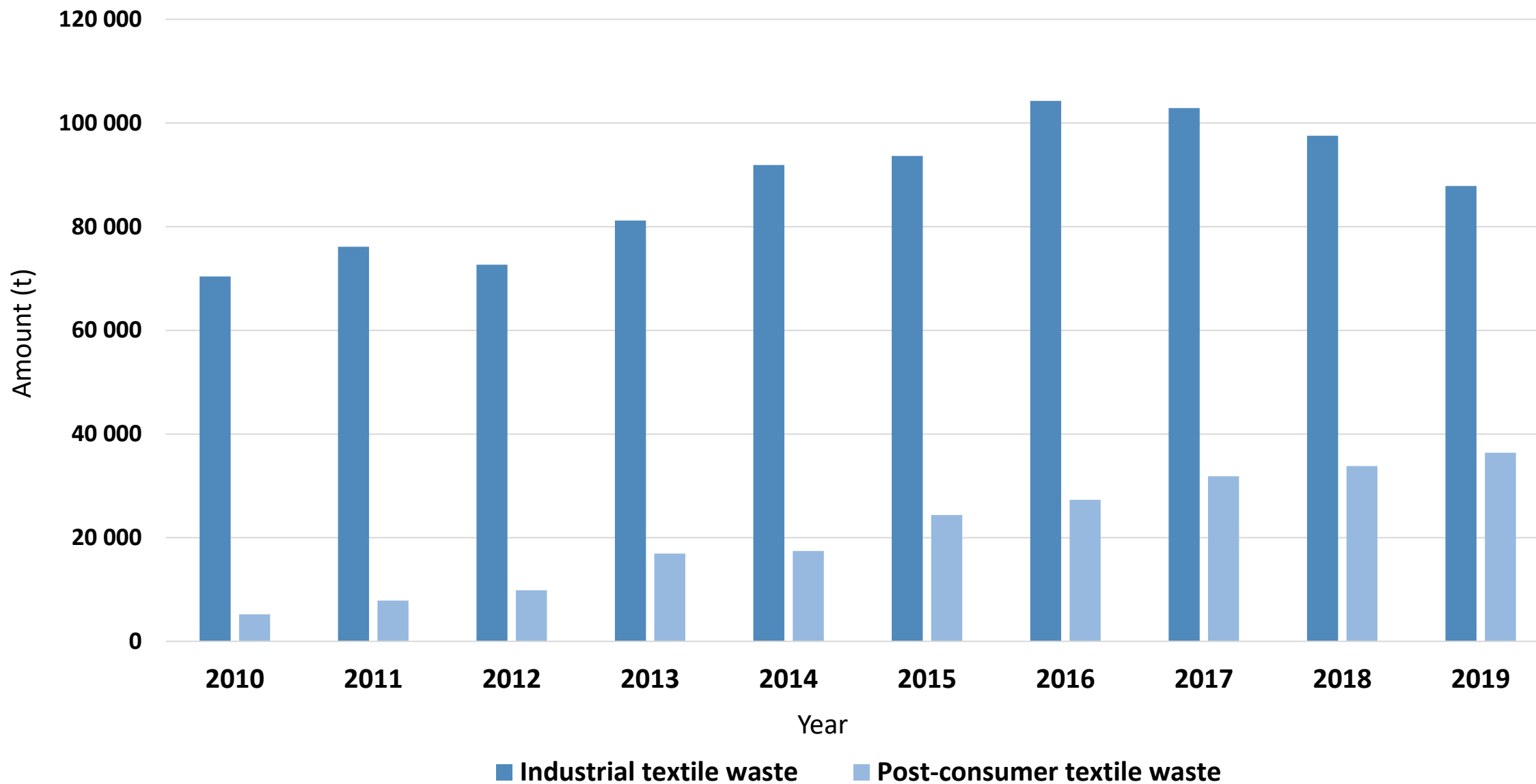
Different flows of textile waste 2019



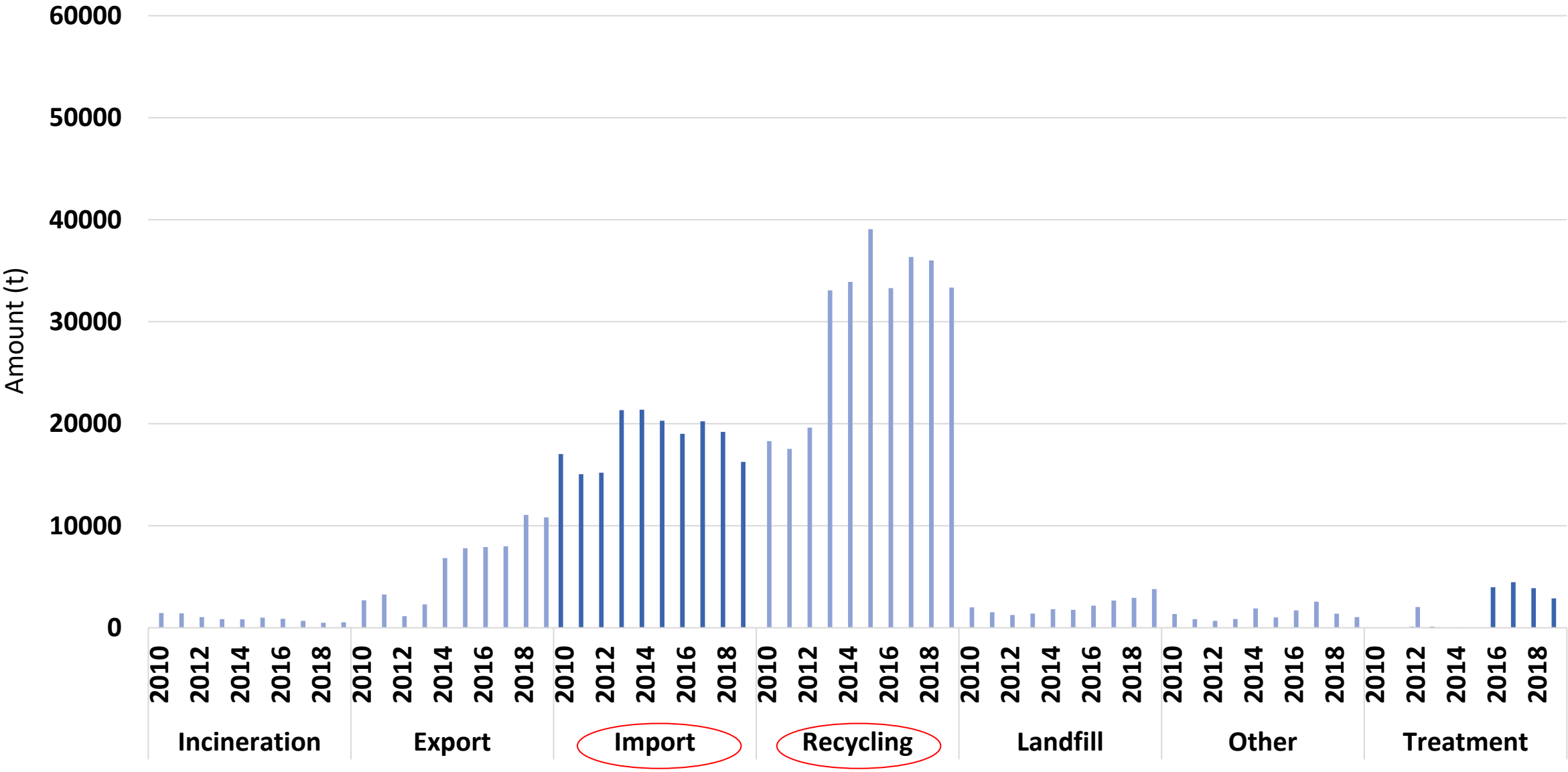
Different flows of textile waste 2019



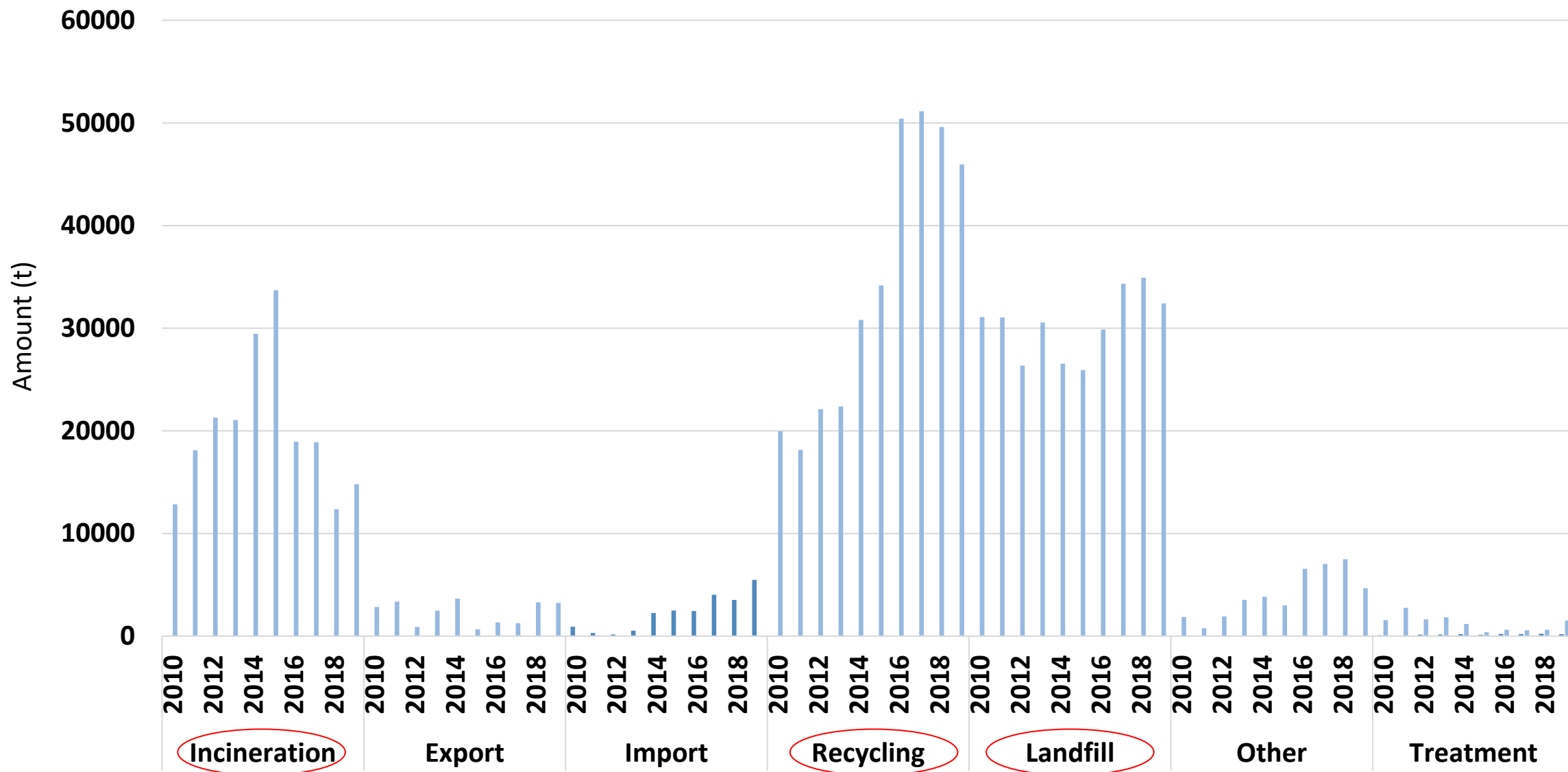
Production of textile waste 2010 - 2019



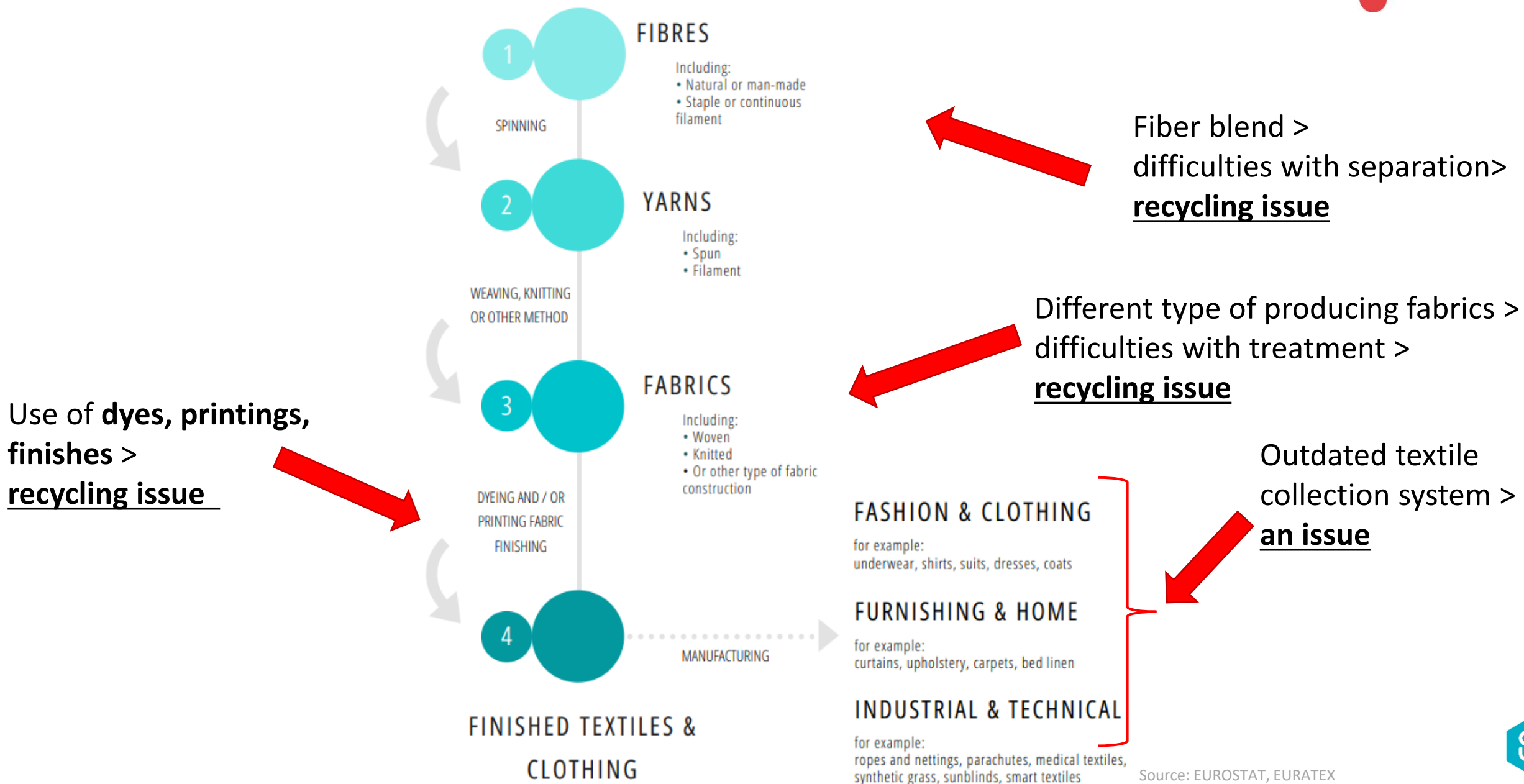
Post-consumer textile waste treatment



Industrial textile waste treatment



Obstacles for recycling of textile waste



Thank you for your attention

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