

Futu

Future availability
of secondary
raw materials

RaM

The role of SEEA in developing National Critical Raw Materials and Secondary Raw Materials datasets in the FutuRaM Project

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EU Framework Programmes



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Why?



- Access to raw materials determines the competitiveness of industry and the resilience of the economy
- The EU is subjected to several transitions
 - Decarbonizing and digitizing economy
 - Circular Economy Action Plan
- Access to critical raw materials are important
- Mining occurs mostly outside Europe, few countries have monopoly
 - Changing geopolitical landscape
 - High Supply risk threat
- What are the facts and trends, and how can it be of use for policy decisions?

FutuRaM project: Overview



- Horizon Europe, Research & Innovation project
- 4 years duration (started June 2022)
- 29 partners from 11 countries

The FutuRaM project: Overview



BAT



WEEE



ELV



MinW



Slags and Ashes

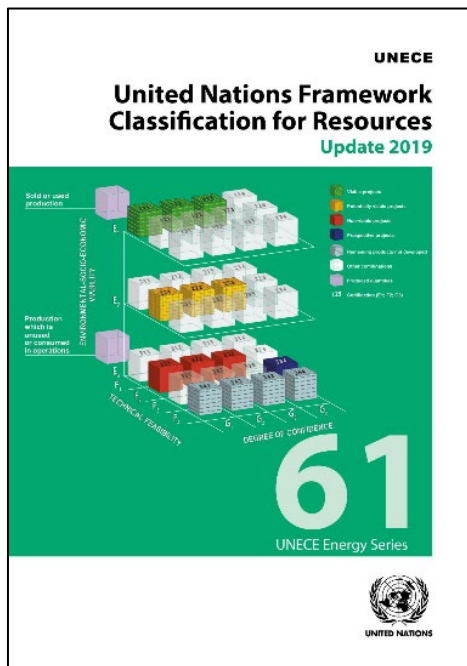


CDW

UNFC & Anthropogenic Resources



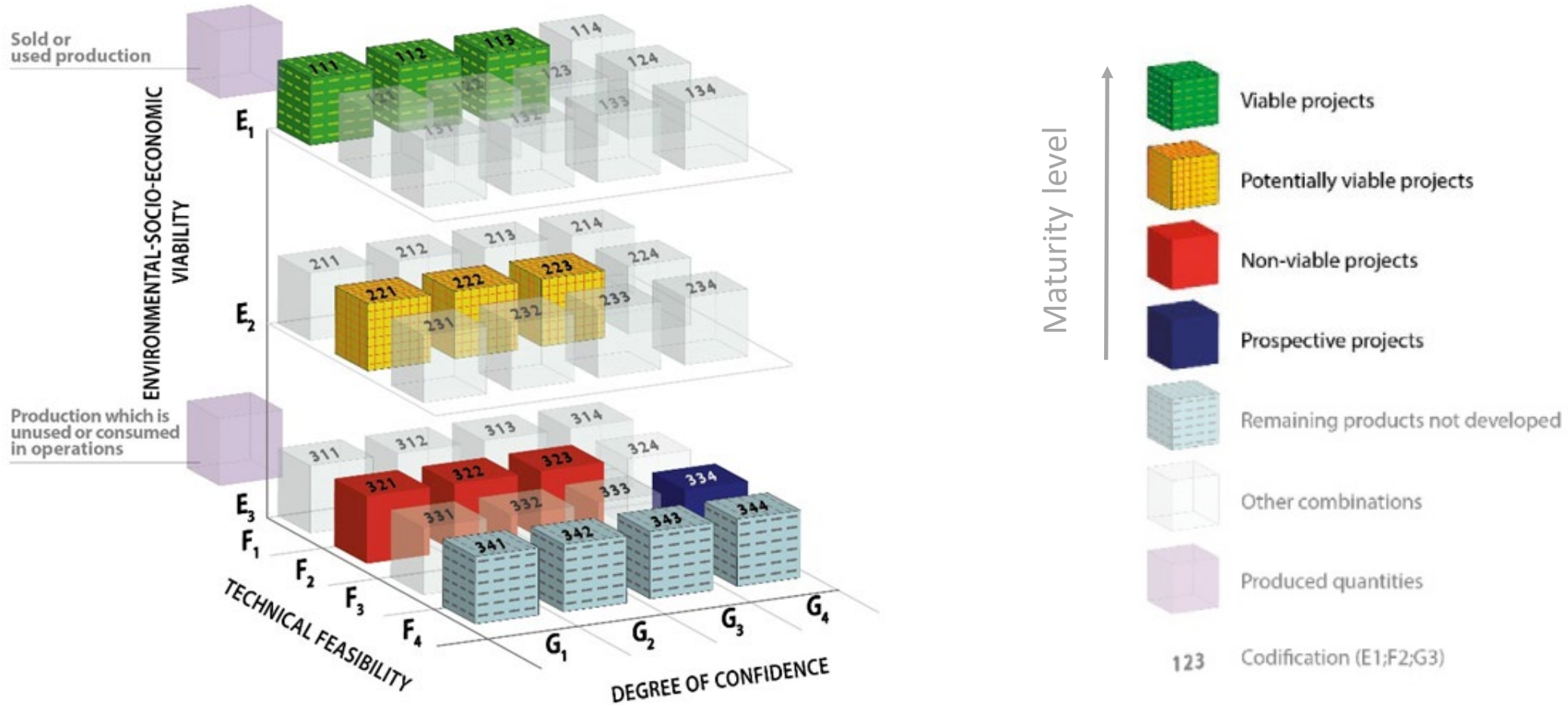
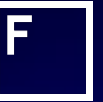
United Nations Framework Classification for Resources



A global standard for **communicating recoverable quantities** based on the **maturity level of the recovery project**

- for all types of energy and materials
- universally acceptable
- internationally applicable

UNFC & Anthropogenic Resources

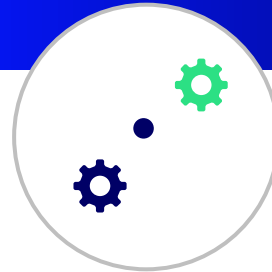
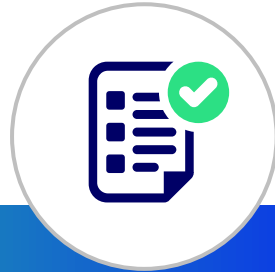
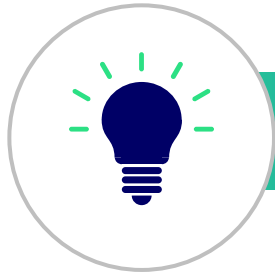


FutuRaM & UNFC: Roadmap



Develop of a consistent procedure to assess and classify SRM recoverability in line with the UNFC

Draft reporting standard for the attention of the UNECE Expert Group on Resource Management



Initial phase

17 case studies to test, further develop, validate and demonstrate the procedure in line with the UNFC

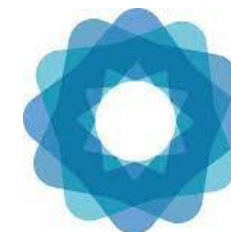
FutuRaM Statistics Method



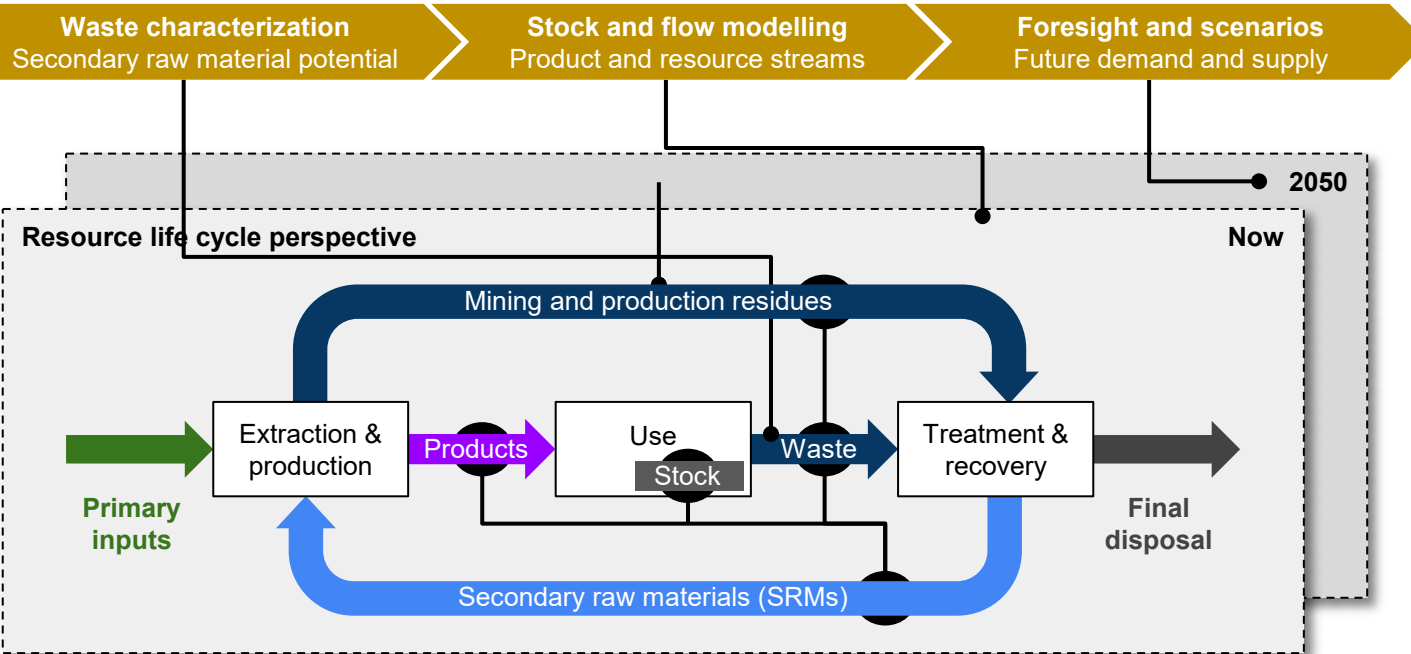
In alignment with:

UNECE

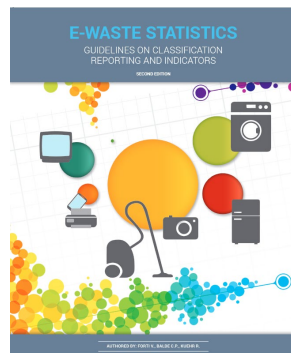
Conference of European Statisticians
Framework on Waste Statistics



System of
Environmental
Economic
Accounting



THE
GLOBAL
E-WASTE
STATISTICS
PARTNERSHIP



Example for e-waste



Mapping e-waste flows in the Netherlands



Dutch flows of disc

366 kilotonnes

Discarded electrical and electronic equipment in the Netherlands



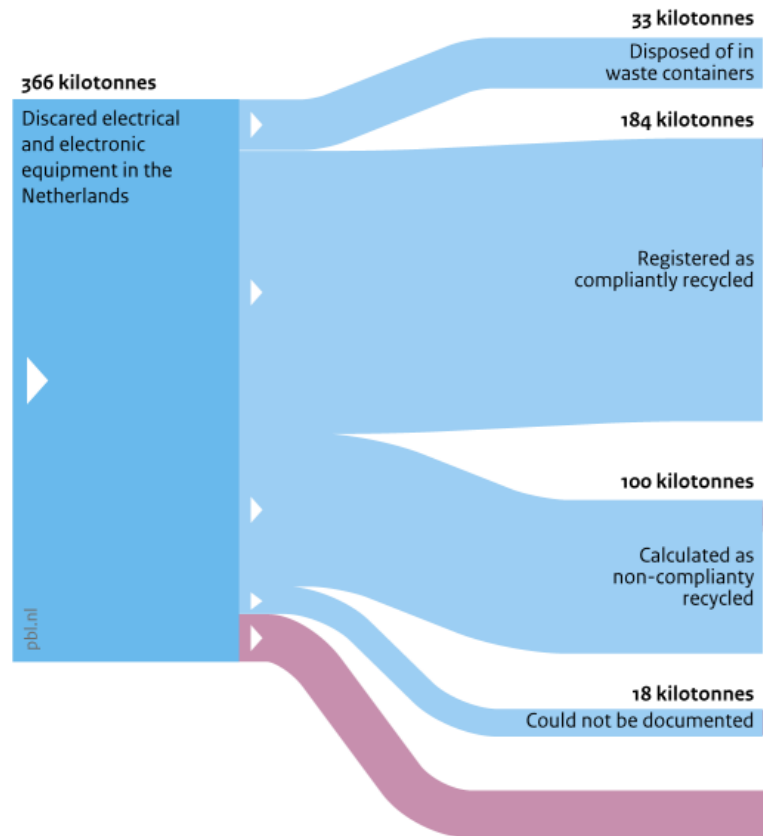
Source: UNU/UNITAR, NV

[Source: Potential effects of Dutch circular economy strategies on low- and middle-income countries: the case of electrical and electronic equipment | PBL Planbureau voor de Leefomgeving and UNITAR](#)

Mapping e-waste flows in the Netherlands



Dutch flows of discarded electrical and electronic equipment, 2018

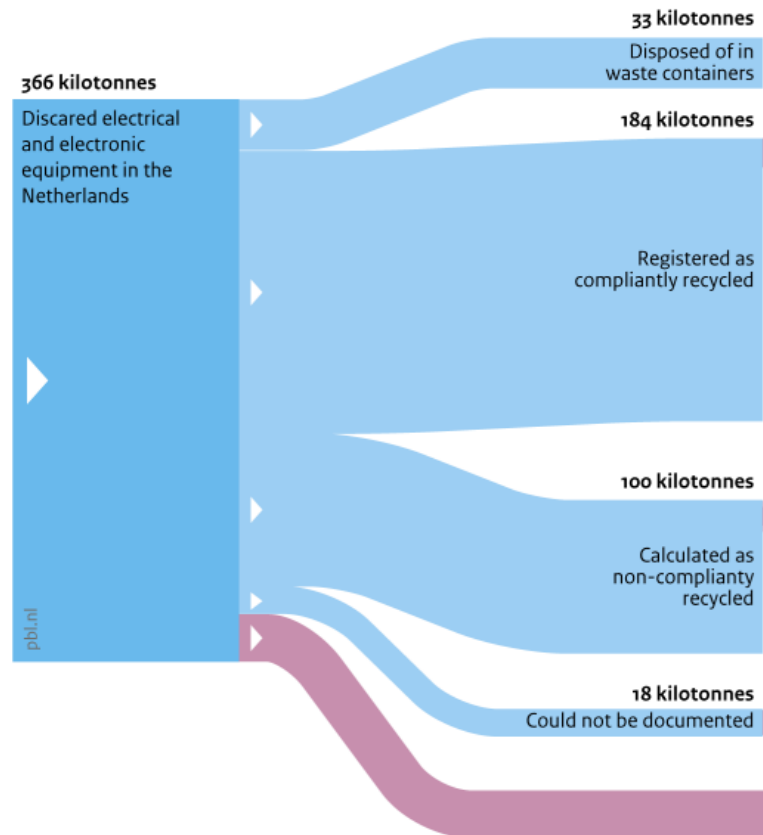


Source: UNU/UNITAR, NWR

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Mapping e-waste flows in the Netherlands

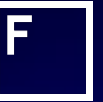
Dutch flows of discarded electrical and electronic equipment, 2018



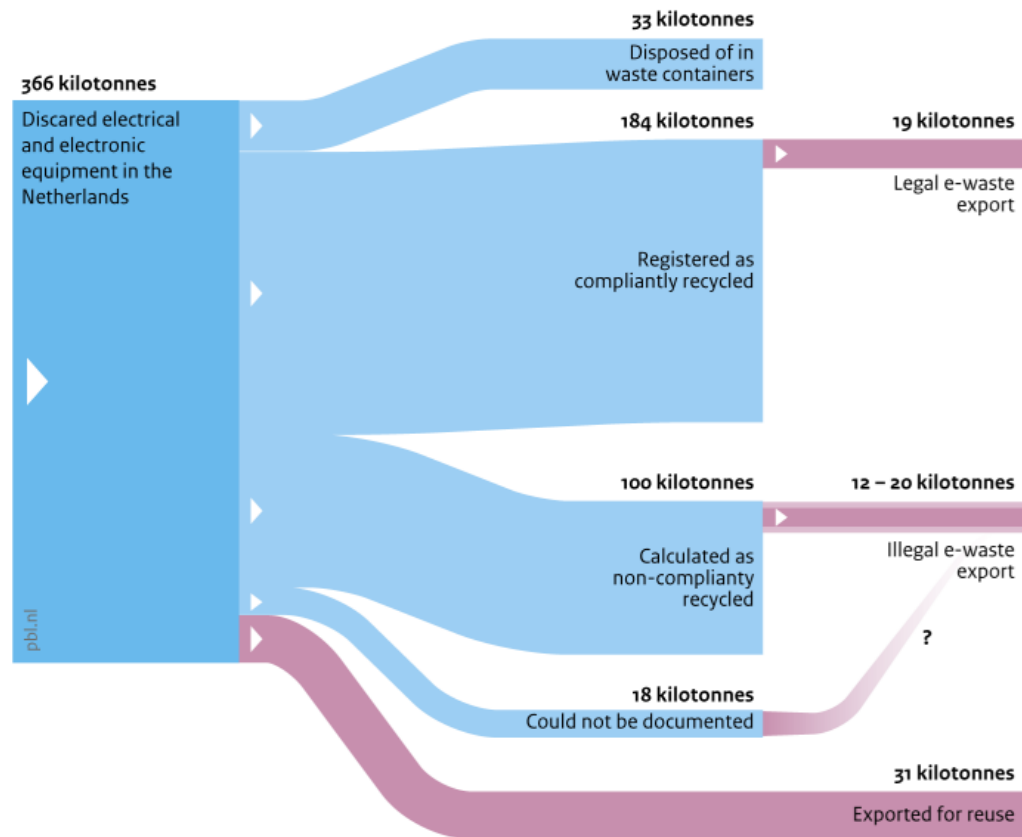
Source: UNU/UNITAR, NWR

- Underlying dataset includes
- Covers entire lifecycle from consumption, lifespans, stock, waste generation, waste collection, waste management
- 54 products (UNU-KEYs)
 - Material composition is known, including critical raw materials
 - Over 200 codes in trade statistics
 - Link to products to seven e-waste flows
- Integrated assessment of
 - Product flows
 - waste flows
 - Materials and substances
 - Transboundary Movement
- Official datasets exists for 50 countries in the world
- Estimated datasets exist for each country in the world

Transboundary aspects



Dutch flows of discarded electrical and electronic equipment, 2018



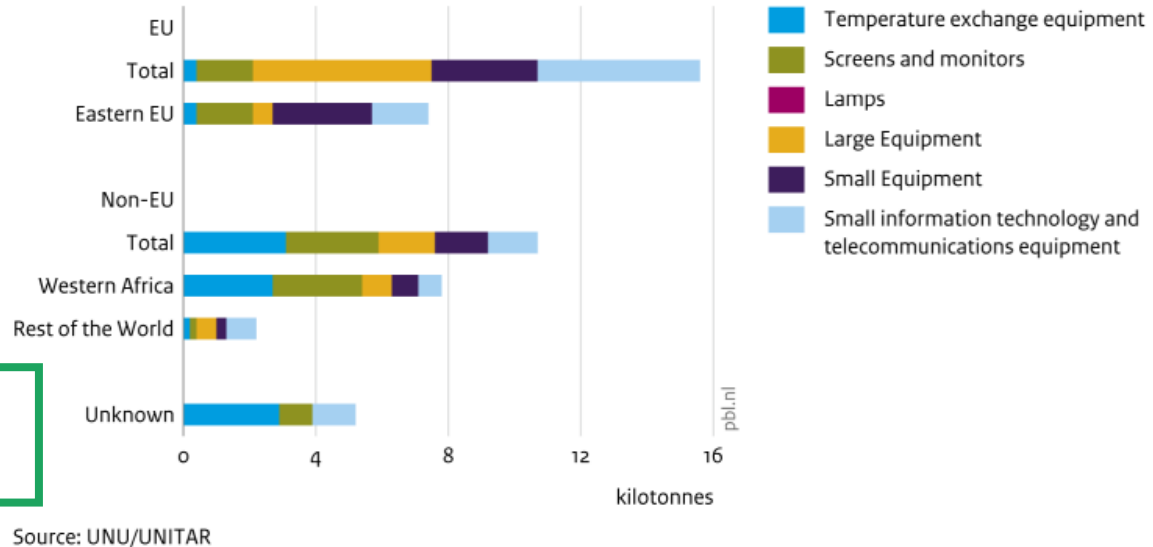
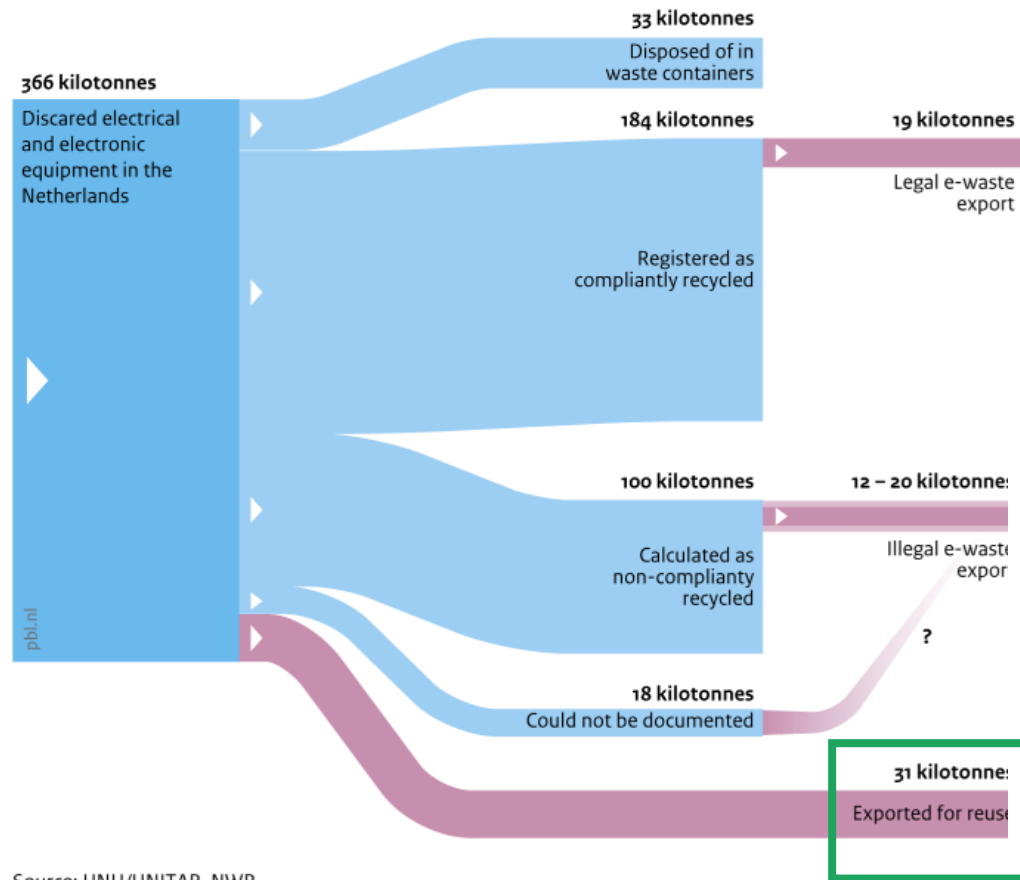
Source: UNU/UNITAR, NWR

[Source: Potential effects of Dutch circular economy strategies on low- and middle-income countries: the case of electrical and electronic equipment | PBL Planbureau voor de Leefomgeving and UNITAR](#)

Transboundary aspects

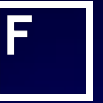


Dutch flows of discarded electrical and electronic equipment, 2018

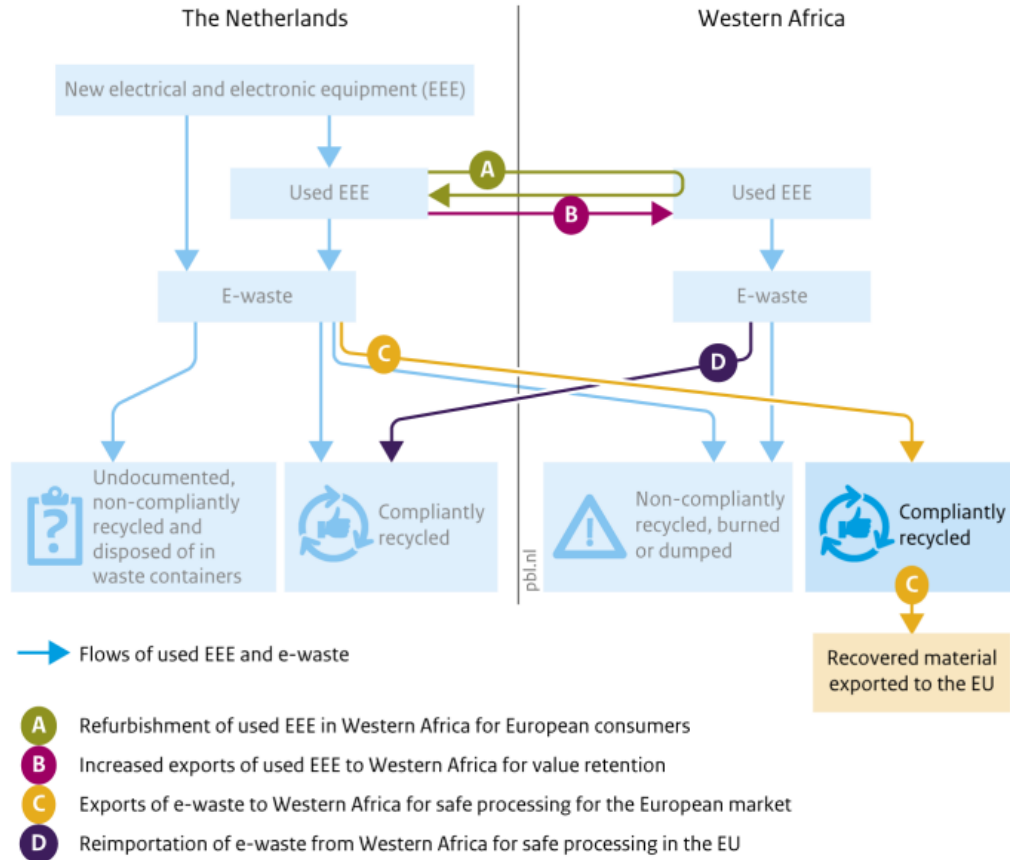


Source: [Potential effects of Dutch circular economy strategies on low- and middle-income countries: the case of electrical and electronic equipment](#) | PBL Planbureau voor de Leefomgeving and UNITAR

Potential effects of Dutch circular economy strategies on low- and middle-income countries



Flows of used-EEE and e-waste in circular economy strategies that include West Africa



Source: [Potential effects of Dutch circular economy strategies on low- and middle-income countries: the case of electrical and electronic equipment](#) | PBL Planbureau voor de Leefomgeving and UNITAR

FutuRaM & Statistics: Roadmap

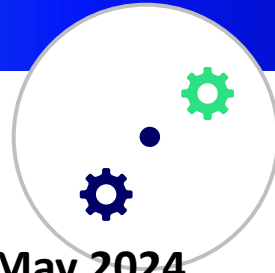
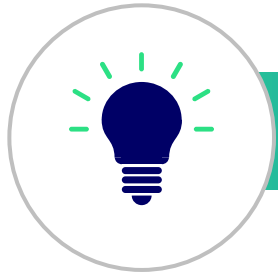


Develop of methodologies

2025 and 2026

Datasets for each waste stream at Secondary Raw Materials Knowledge Base

Draft proposal for Secondary Raw Materials Statistics



June 2022: Project Start

January 2023 to May 2024

Gather data from existing statistics, industry, waste sampling, etc.
Harmonizing and gap filling up to 2020 and foresight to 2050 under various scenarios

FutuRaM and Statistics



- Invitation for a dialogue with Eurostat and EU NSOs to bring together EU Statistics, UNECE EGRM, EC institutions, including Joint Research Centre that compile raw material production, resource/reserve data, and leading experts and innovative national statistical offices and environmental agencies
 - FutuRaM experts can attend co-organize 2 meetings. How can this be facilitated?
- FutuRaM results can contribute to measuring important aspects of the transition towards a CE
- Conceptual integration how can we synergize
 - Mapping of waste streams into SEEA MFA?
 - Does SEEA have definitions on measuring recoverability?
- Deliverable Proposal for new EU statistics on Secondary Raw Materials (by June 2026)
 - Ideas on how this could look like?

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FutuRaM.eu



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