Limits of the approach

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- Product composition
- Waste treatment mix (J-matrix)
- Data validation
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IO-aggregation

- Number of different waste fractions limited: Level of aggregation is 44 different physical products

- Example: Chemicals nec (food ingredients, pesticides, bulk feedstocks in several products)

Product composition

- Product composition is used for:
  - Establishing mass balances for substances
  - Aligning ressource extraction with supply
  - Determining outputs of disassembly activities (e.g. WEEE)
  - Calculating emissions from waste treatment activities
  - Calculation of material composition of waste

Waste treatment mix (J)

- **J** is a data input that specify how different waste types are treated, e.g. Iron waste:
    - 30% recycling
    - 5% incineration
    - 65% landfill
- **J** is based on countries' existing waste statistics
    - Existing waste statistics underestimates waste generation
    - Therefore recycling and incineration is likely to be overestimated in the model

Data validation

- Each country data set is thoroughly validated:
  - Product balance (input = outout)
  - Negative waste is not allowed (this indicates inconsistency)
  - Feedstock efficiencies are compared with existing information, e.g. LCI databases such as ecoinvent
  - Use – emission balance for fuels: Emission of a fuel must be close to the use
  - Animal/human emissions and manure: Is ensured based on established mass balances for animals and humans
  - Samples testing "normal values"/common sense
  - Cross checks with statistics
- Still, some wrong data entries may escape validation

Data gaps

- The data collection (country SUTs) only cover 20 EU countries corresponding to 38% of EU27 GDP

- To compensate for this, the EU20 is scaled up, this affects

  - the representativeness of the EU27 data

  - import/export shares

Indirect land use not included

- Occupation of land induce transformation of non-productive land into productive land – often outside EU27
- This has a potential significant effect on among others GHG-emissions