

Life cycle inventory generation and data handling in a large LCI database in a global context

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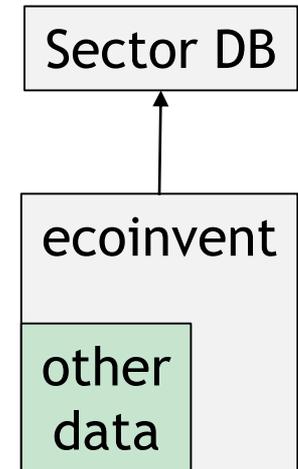
- ecoinvent is a **not-for-profit** association
- Publishes the **ecoinvent database** with Life Cycle data since 2002
 - 17,000 datasets covering 3,300 different products
 - **Life Cycle Assessment** and **Carbon Footprinting**, also in EPDs (e.g. EN 15804), PEF, water footprinting, resource criticality, Social LCA and other assessments
- Discussion today on:
 - **Support** needed for **data collection** and **preparation** to expand coverage of LC-based approaches
 - Better methods needed to **combine, merge** and **adapt data sources** in projects and for development of standards

- **Need for easy data handling in the SRI project**
 - 25 separate data collection projects with often inexperienced data providers
 - Over a thousand datasets for emerging regions in 3 continents
- **Excel interface** for less experienced users
 - Entire project in one file, easy reviews
- Several **data entry tools** were developed with partners
 - **Waste** treatment
 - **Wastewater** treatment
 - **Crop** production
 - **Petroleum refinery** operation
- Make **complex models** more **accessible** and **adaptable** to local conditions

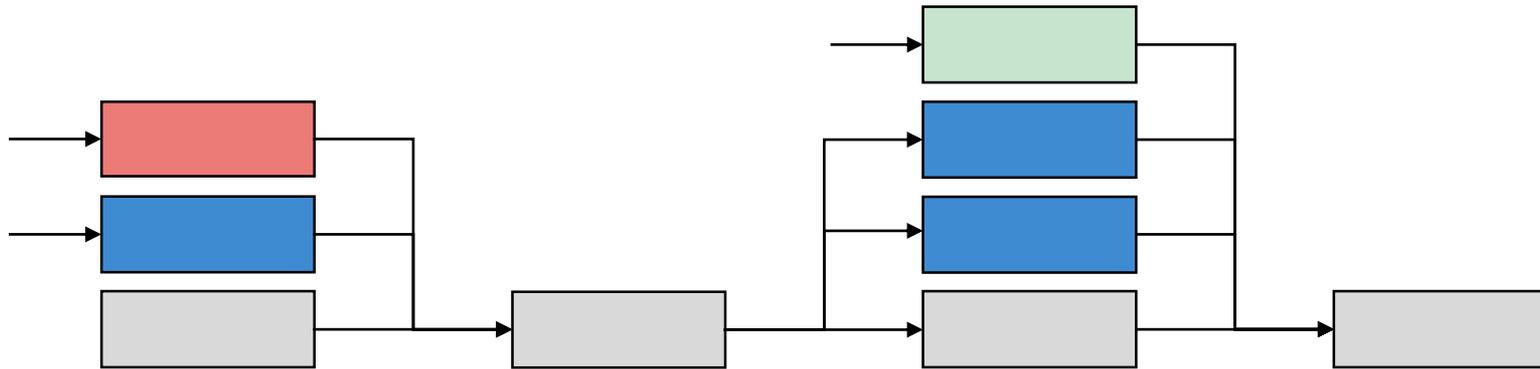
- Example: **waste treatment** models
 - Landfilling, incineration, dumping
 - Flexible waste composition
 - Different technologies
 - Formal, informal and uncontrolled disposal
 - Key parameters such as temperature, humidity for landfills
- By selecting the appropriate **parameters**, users can create **specific data** consistent with **published ecoinvent treatment datasets**

Adapting background data

- As a **background database**, ecoinvent wants to support users in managing their **foreground data** projects
 - From small studies to large, specialized databases, e.g. for specific sectors
- Recent projects for some clients required **replacement** of certain background sectors with **third-party data**
- Database projects often require **multiple iterations**
 - Manual efforts may have to be repeated many times



Adapting background data



- Many parallel systems can be stored
- Consistent IDs or mapping tables allow for simple updating
- Project-independent storage, no disturbance for regular users

- Projects can go through many iterations with changes on different levels with minimal effort
 - Changes can be introduced to the entire system
 - Linking and substitutions can be centrally reviewed with ease
- Use cases are plentiful
 - Comparing system models or EOL scenarios, sensitivity analysis
 - Forecasting for future energy scenarios
 - Adjusting to different data requirements
- Aim is to handle database-related complexity centrally, then make results accessible to all users
- Increase the application options of the already generated data
 - Data for many sectors is still scarce, global resources for data generation are limited

- ecoinvent has improved **data handling** with more Excel integration and a web app for conversion and validation
- **Tools** can support users in the **creation of specific datasets** in complex sectors
- New **framework** increases support for users working with multiple data sources and supports database developers relying on ecoinvent background data