

Overview of environmental accounts

As an extension of the national accounts, the environmental accounts depict the interactions between the economy and the environment. As satellite accounts to the national accounts, they include goods, technologies, services, materials and cash flows that serve either environmental protection or resource management. For this purpose, the monetary accounts are subdivided into the modules environment-related transfers, environmental protection expenditures and environment-oriented production and services and are compared with the physical accounts of material flow, energy flow and air emission accounting. Likewise, economic data, such as gross domestic product or gross value added, can be linked with ecological data, for example raw material, energy and air emissions, and monetary data, e.g. from environmental protection expenditure accounting, in so-called hybrid accounts.

Environment-related transfers concern environment-related subsidies, environmental taxes as well as other ecologically relevant payments. Environmental taxes have been calculated according to a uniform concept since 1998 and are divided into energy taxes, transport taxes, resource taxes and pollution taxes.

Environmental protection includes all those activities that are directly aimed at preventing and eliminating pollution and any other impairment of the environment. The Environmental Protection Expenditure Accounts (EPEA) quantify the resources used by resident economic units for environmental protection. This provides important information on the production and use of environmental services.

The "Environmentally oriented production and services sector" (EGSS) includes, on the one hand, the totality of activities aimed at measuring, preventing, reducing, limiting or remedying environmental damage. This includes environmentally sound or less polluting technologies, processes and products that reduce environmental risks and minimise pollution. On the other hand, it focuses on the careful use of natural resources. This results mainly in resource-efficient goods, technologies and services. The domestically generated production value as well as the gross value added, the number of employees and the environmental export are comprehensively presented.

The physical accounts record material and energy flows that pass through an economy in a given period, as well as air emissions that are emitted. The exchange between society and nature is shown in the material flow accounts (MFA). From a global perspective, the raw materials imported for production consume the resources of other countries in their manufacturing process, which is considered in the calculation of domestic resource consumption through the so-called raw material equivalents (RME). By showing resource consumption and the associated emission and

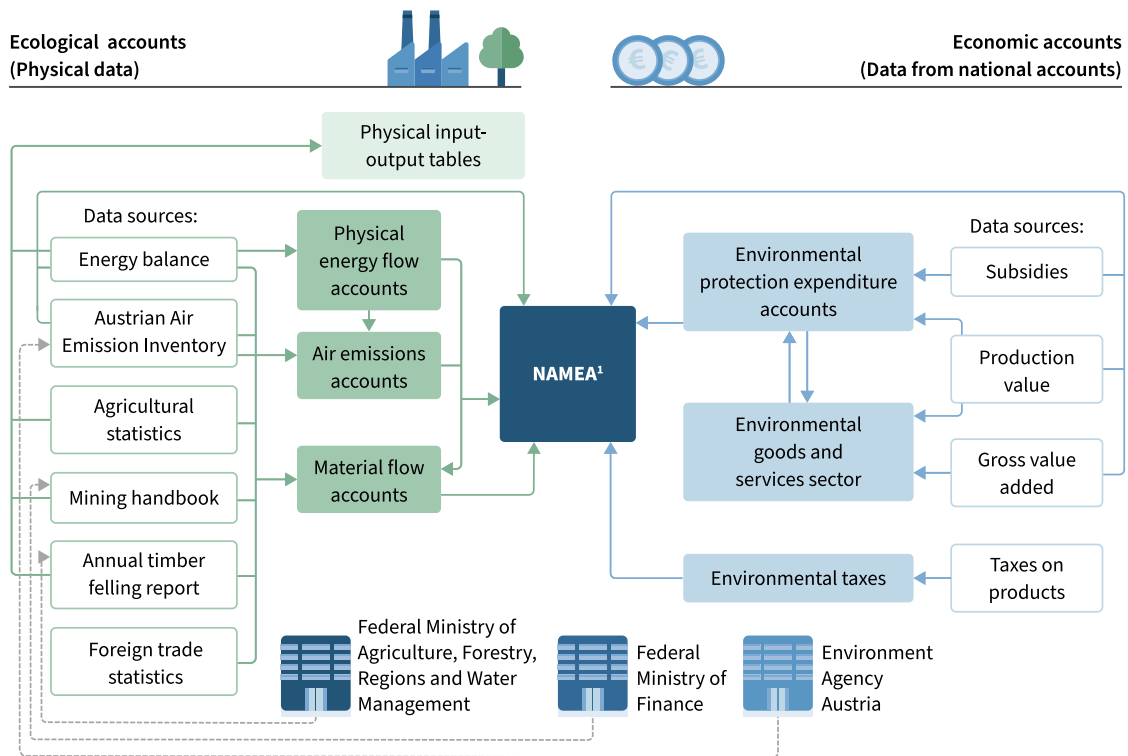
waste potential, material flow accounting is a central component of national environmental reporting.

The physical energy flow accounts (PEFA) include, on the supply side, domestic production as well as imports and, on the use side, the energy use of companies as well as the non-energy use of energy sources, losses, changes in stock and exports as well as the energy use of households. The energy flows from the environment (forms of energy taken from nature) into the economy, within the economy (energy products) and from the economy into the environment (energy residues) are presented.

Within the framework of the air emission accounts, the flows of a total of six greenhouse gases and seven air pollutants (including particulate matter) generated by 64 emitting economic sectors are recorded. The emission of carbon dioxide is differentiated according to climate-impacting (fossil and other) and climate-neutral (biogenic) sources. In addition to CO₂, the air emissions calculation also considers carbon monoxide (CO), sulphur oxides (SO_x), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOC), methane (CH₄), partially fluorinated hydrocarbons (HFC) and fully fluorinated hydrocarbons (PFC), nitrous oxide (N₂O), ammonia (NH₃), sulphur hexafluoride (SF₆) including nitrogen trifluoride (NF₃) and particulate matter (PM_{2.5} and PM₁₀) are taken into account.

The data of these monetary and physical accounts are compared within the hybrid account of the integrated NAMEA ("National Accounting Matrix including Environmental Accounts"). This creates a comprehensive and holistic picture of economic and environmental aspects at the level of economic sectors and private households. The following figure shows these interrelationships:

Environmental accounts: Main data sources



Source and graphic: STATISTICS AUSTRIA. Compiled on 30 January 2023. – 1) National Accounting Matrix including Environmental Accounts.

Currently, an extension of the environmental accounts by three new modules is in preparation. Thus, the monetary account on environment-related subsidies and similar transfers as well as the two physical accounts forest account and ecosystem services are to be implemented by 2025.

All these data form an important basis for further studies and analyses as well as for decisions regarding environmental protection and green growth at national as well as EU level.