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Institut für angewandte Ökologie
Institute for Applied Ecology

Introducing


Global Emission Model for Integrated Systems (GEMIS) Version 4

Christian Hochfeld
Member of the Executive Board
Öko-Institut (Institute for Applied Ecology)





February 2010

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What is GEMIS ?

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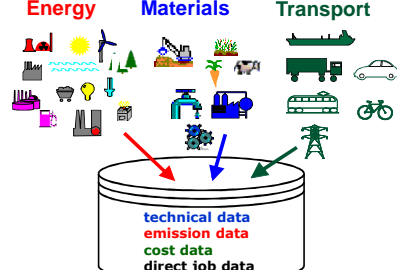
- **Database** for environmental and cost data of energy, transport, material systems (1989 ff)
- **Analysis tool** to compute/compare energy & material flows from demand to resource use
- **Data server** for LCI, material flow analysis, and carbon footprints
- **Sponsored** by Germany, EU, US-DOE, and others, approx. 2000 **users** word-wide

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GEMIS Database





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Energy **Materials** **Transport**




technical data
emission data
cost data
direct job data

Linking of unit processes creates life-cycles

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GEMIS Results





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Core (regularly updated) environmental indicators:


- **air pollutants** (SO₂, NO_x, PM₁₀, CO, NMVOC + SO₂-eq.)
- **greenhouse gases** (CO₂, CH₄, N₂O etc., + CO₂ eq.)
- **resources** (primary energy, raw materials, land, water)

Additional (only partly updated) indicators:

- **heavy metals** (As, Cd, Hg, Pb...), **POP** (BaP, TCDD)
- **liquid effluents** (AOX, BOD, COD, N, P)
- **costs** (life-cycle costs, using interest rate for capital)
- **employment balance** (direct and indirect)





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GEMIS: Beyond Energy


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GEMIS applications can cover





- **mobility:** freight/person transport (airplane, car, bus, motorcycle, ship, train, truck...)
- **materials:** building materials, food&feed, metals, packaging, textiles...
- **waste management:** separation, disposal, recycling
- **economic services:** monetary values delivered from economic sector(s)

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Key GEMIS 4 Features

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-  Additional processes for biomass + agriculture/food; complete update of transport systems (GEMIS 4.6)
-  Comprehensive **review + revision** of core data, **data update/extension** for EU-27
-  Data export & scenario import via Excel, variable **system boundaries**; **multiple allocation rules** (GEMIS 4.6)
-  Multilingual model + database: German, English + Czech + Spanish (+ French)

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GEMIS 5 (upcoming)

-  Full update + new processes for agriculture/food (EU 27 + AR, BR and others)
 -  Update and **review** of core data for materials (metals, minerals, plastics)
 -  Better data **ex- and import** (EcoSpold & ecoinvent, XML)
- Extension of online **documentation**

Access and Contact

Using and distributing GEMIS is **free**

Software & database + tours available from website:

<http://www.gemis.de>

(GEMIS version 4.6 to be released in Feb. 2010, version 5 in 2011)

Contacts

Data: u.fritsche@oeko.de
Help/seminars: u.draude@oeko.de
Program: l.rausch@oeko.de