

# GaBi Software

PRODUCT SUSTAINABILITY

## GaBi 4

Get a Grip on Life Cycles



**PE INTERNATIONAL**  
EXPERTS IN SUSTAINABILITY

# ACTIVE

## Be active – not reactive

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### THE SYSTEM AND ITS APPLICATION

GaBi has been the leading life cycle related software system supporting sustainable product and process development world-wide for almost 20 years.

GaBi 4 is a powerful, fully-featured software which supports the collection, organisation, analysis and monitoring of information related to the environmental performance of products and processes. Additional sustainability-related criteria such as costs and social impacts can also be integrated.

GaBi 4 assists with:

- Life Cycle Assessment (LCA)
- Product Carbon Footprints (PAS 2050, Scope 3)
- Life Cycle Engineering (LCE)
- Design for Environment (DfE)
- Energy Efficiency/Benchmarking Studies
- Strategic Risk Management IPP, EPD, EUP

### Client Statement

Both the consultancy services of PE INTERNATIONAL GmbH and the use of the software system GaBi 4 assist us in our product-related environmental measures. New automobiles can be analysed regarding their environmental impacts as early as in the design phase and optimisation potentials are identified. This system-wide approach of life cycle analysis yields detailed information and evaluations which are used profitably in different sections of our company.«

Dr. Ing. h.c. F. Porsche AG

### YOUR BENEFITS

#### Internal benefits

GaBi 4 software supports the development of your product and processes with concise data, indicators and evaluations. This results in:

- accelerated internal workflows and decision making
- the detection of ecological and economic risk factors such as variable fuel, resource and disposal prices, tolls, CO<sub>2</sub> costs, etc.
- improved employee motivation and increased efficiency and productivity
- increased ability to sustainably innovate

#### External benefits

Working with GaBi 4 provides you with higher quality information and improved communication with stakeholders, shareholders and authorities.

Using GaBi 4 means:

- being prepared to actively direct and meet the future demands and conditions of national or international politics
- integrating partners along the supply chain
- creating a basis for communication e.g. using Environmental Product Declarations (EPDs)
- improving your image



# CREATE

## Create your system

# CALCULATE

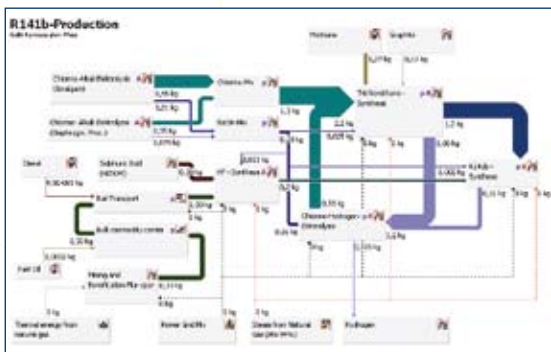
## Calculate the facts



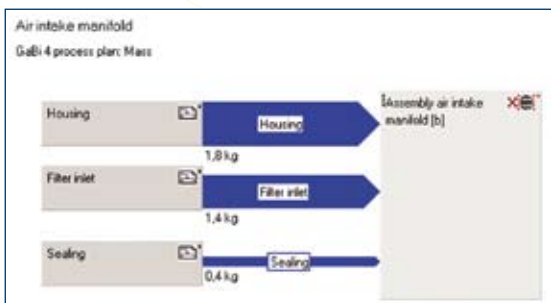
### Setting up a model

...in GaBi 4 means modelling your actual process chains. This approach allows models to be set up easily and transparently:

- Model a specific production technology or service based on single process information



- Model a product using its structural information and create parts using material inventories and production processes



A principle characteristic of GaBi 4 is its ability to map real-life activities easily and flexibly. This allows case studies to be set up efficiently.

### Making models flexible

...by consistently using GaBi 4's parameters.

- Accurately model industrial applications
- Facilitate dynamic scenario based modelling
- Benefit from comprehensive analyses and scenario simulations

### Inventory calculation

...is only one mouse click away with GaBi 4. The GaBi 4 Balance offers a clearly structured presentation of the calculated inventories.

Understand the results at a glance by applying

- a customer specific balance view
  - a weak point analysis
  - a grouping function
- and many other features.

State-of-the-art charts illustrate selected parts of the balance table.

### Analyse impacts and interpret results

...by using impact categories, normalisation factors and evaluation methods which are available via 'drop down' menus.

How do balances change if, for example, transportation distances of intermediate products are altered?

How do different allocation methods affect results?

How do changes in process parameters, like efficiency or emission factors, affect results?

The GaBi 4 Parameter Explorer and the GaBi 4 Analyst provides the answers with the following analysis tools:

- Scenario Analysis
- Parameter Variation
- Sensitivity Analysis
- Monte Carlo Analysis



# COMMUNICATE

## Communicate your results



Your presentations can feature results and information that are easily exported from GaBi 4.

Using GaBi 4's two additional modules, communication with customers, suppliers, authorities and society can be improved even further.

### **GaBi publisher**

- gives your clients access to GaBi 4 results
- allows quick, transparent and consistent communication of results

### **GaBi i-report creator**

- defines and applies report templates
- creates 'read-only' reports for internal and external communication
- generates 'interactive' reports incorporating selected model parameters
- builds scenarios so that results can be displayed in the report tables and charts immediately

**GaBi publisher** and **GaBi i-report creator** have proved to be effective in their combined application with and have been used in EPDs and for DfE topics.

GaBi i-reports and other published GaBi results can be viewed by colleagues and stakeholders in the **GaBi reader**.

- Available as:
- **desktop solution**
  - **client-server based solution (SaaS)**
  - **web-based solution**

### **Selected clients**

#### **Industry**

ABB, Amcor, Alcatel-Lucent, Akzo Nobel, AMD Saxony, ARUP, Bayer, Boeing, Bombardier, Bosch, BP Chemical, CEMEX, Continental, Corus, Daimler, Decathlon, Delphi Automotive System, DuPont, EADS, Ericsson, European Space Agency, Evonik Degussa, Fraunhofer Institute, General Motors, IBM, Interface, Isuzu, Jaguar Landrover, Larsen & Toubro, Kraft Foods, Mitsubishi Motors, Motorola, Palm, Pepsico, Porsche, Renault, Rio Tinto, Seiko Epson Corporation, SGS Hong Kong, Sharp, Siemens, SINTEF, SKF, Solvay, Sony, StoraEnso, Tata Motors, Tata Steel, Tesco, TetraPak, Thales, Timberland, Toyota, Unilever, United Technologies Corporation, Veolia, Volkswagen, Volvo, Worley Parsons, World Steel, etc.

#### **Universities**

Aristotle Thessaloniki, Barcelona, Beijing Polytechnic, Berlin, Birmingham, Bologna, Brasilia, California Santa Barbara, Cambridge, Chalmers, Cork, Darmstadt, Dresden, Gazi, Graz, Hefei, Hong Kong Polytechnic, Konkuk, Lappeenranta, Manchester, Mississippi State, Murdoch, Munich, National Cheng Kung, National Taipei, New South Wales, Pompeu Fabra, Poznan, RMIT, Soka, Strathclyde, Surrey, Texas El Paso, Toronto, TU Denmark, Waseda Tokyo, Washington, Vienna, Windsor, etc.

#### **Governmental and public authorities**

California EPA, China National Institute of Standardisation, EMPA St. Gallen, EMPA Dübendorf, Environment Agency (GB), European Commission, Korea Institute of Industrial Technology, National Maritime Research Institute (JP), National Research Council Canada, US Dept. of Energy etc.



**Develop sustainability to assure your future.**

## VERSIONS AND DATABASES

### Versions

All databases generated for GaBi 4 are consistent and have a transparent structure that can easily be enlarged by the user. The GaBi 4 software is available in combination with different database versions:

Version	Databases	Process No	Use
Professional	large number of PE country-specific data plus ELCD, worldsteel, Eurofer, EAA and PlasticsEurope data	> 1050	commercial scientific
Lean	selected PE data plus ELCD, worldsteel, Eurofer, EAA and PlasticsEurope data	> 520	commercial scientific
Ecoinvent	data from the Swiss Centre for Life Cycle Inventories	> 2000	commercial scientific
U.S. LCI	U.S. specific data based on NREL's U.S. LCI database supplemented with PE data	> 500	commercial

For university research projects, academic versions of GaBi 4 are available with a discount of 50 %. GaBi Education is available for **free** to students and teachers for educational purposes.

### Extension databases

In addition to the databases above, we offer 15 extension databases covering a further 1200 processes for more specific data sets.

- Intermediates
- Steel
- Non-ferrous metals
- Plastics
- End of life
- Electronics
- Construction materials
- »ecoinvent« integrated (to GaBi 4 structure)
- Energy
- Aluminium
- Precious metals
- Coatings
- Manufacturing
- Renewable raw materials
- Textile finishing
- U.S. LCI database

### Data on demand

Nevertheless, more specific data requirements may exist. Conducting your own inquiries is often time consuming and quite expensive. PE INTERNATIONAL provides individually customized data on demand efficiently and comprehensively either from our stock (data warehouse incl. more than 8000 data) or individually generated.

## INDICATORS, LANGUAGES AND SERVICE

### Impact and evaluation methods

Over 100 impact categories, evaluation methods and types of indicators are included in GaBi 4:

- these cover environmental categories such as CML 96, CML 2001 (incl. updates from Aug. 2009), EDIP 97, EDIP 2003, EPFL 2002+, TRACI, USEtox and also evaluation methods like Ecoindicator 95 & 99, Ecological Scarcity Method (UBP), as well as related information on normalisation
- they provide social indicators such as qualified working time, health and safety and humanity of working conditions
- they include site-specific impact flows for land use processes
- they provide technical indicators such as energy, standard volume, chemical formulae and CAS numbers

### Languages

- GaBi 4 databases are available in English and German
- You can switch the user-interface language between English, German, French, Danish, Portuguese, Spanish, Italian, Japanese and Chinese with a single button click

### Service included

- Free support and hotline for our customers in all questions regarding software functionality
- Service packs and debugging
- 2hrs of web presentations
- Access to the GaBi user forum
- Access to the GaBi Learning Centre, incl. movie tutorials and handbooks

### Client Statement

» With the commitment of Unilever to further increase its sustainability assessments, the software GaBi 4 has proved to be the most advanced tool for LCA supported product development. The outstanding flexibility and functionality of GaBi 4 make the software highly aligned to Unilever business with a multiplicity of categories and products. The continuous further development of the software and the excellent service provided by PE INTERNATIONAL are two more reasons which ensure Unilever that the implementation of GaBi 4 into the company has been an investment into a sustainable future.«

Unilever



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## GaBi 4 is a product of

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Korea	Eco-Frontier Co.	<a href="mailto:dhjeon@ecofrontier.co.kr">dhjeon@ecofrontier.co.kr</a>
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