



# EcoTransIT World

The solution to calculate emissions  
from worldwide freight transports

# About EcoTransIT World (ETW)

EcoTransIT World is a flexible tool for complex calculations that supports companies to calculate and optimise their emissions and energy consumption.

EcoTransIT World is the most widely used software worldwide to automate the calculation and analysis of energy consumption and freight emissions. The software is accredited by Smart Freight Centre to be in accordance with the GLEC Framework and also meets the requirements of EN 16258 and the GHG protocol (Corporate Standard).

ETW allows calculation of complete transport chains across all modes of transport (truck, train, ocean vessel, inland waterways, aircraft) including transshipments / warehousing worldwide on the basis of a scientific and neutral methodology. This makes ETW equally usable for logistics service providers (LSP), carriers, shippers as well as software providers, consulting companies and other related organisations.

The great flexibility of information relevant for calculation of the respective transport, such as freight

weight, origin and destination as well as mode of transport, is advantageous in order to calculate the complete intermodal transport chain. The calculation is possible in great detail and the more customer-specific transport information are provided to the calculation, the more detailed the calculation result will be.

The use of the calculation results is highly versatile. The results are used to determine the CO<sub>2</sub> footprint, for internal and external corporate communication, to develop new strategies or for benchmarking.

The EcoTransIT API is ready for immediate use. The range of interfaces extends from the automatic Soap XML Web Service WSDL to the manual upload of transport-related mass data in CSV format. Today, several hundred million freight transports are already calculated every year by all customers using by the ETW APIs.



## Key features

Determines energy consumption, greenhouse gases and air pollutants for all modes of transport

Consistent calculation for global, intermodal transport chains

Scientifically sound methodology developed by neutral scientific institutes (Ifeu, Infrac, Fraunhofer IML)

Accredited for the GLEC Framework and compliant with EN 16258 and GHG Protocol (Corporate Standard)

Flexible and customer-oriented interfaces ready for immediate use

Clear license and cost model including updates and method extensions



# The calculation methodology

A methodology with a solid base creates confidence and provides certainty for the right decisions.

The ETW methodology is developed, maintained and validated by independent scientific institutes (Ifeu, Infras and Fraunhofer IML). More than eight scientists, each with their own expert knowledge, regularly contribute to ETW. In addition, the IVE mbH team translates the methodological specifications into program codes and provides customer support.

The result is worldwide unique because ETW calculates the transport distances, energy consumption, greenhouse gases CO<sub>2</sub> and CO<sub>2</sub> equivalents as well as air pollutants SO<sub>x</sub>, NO<sub>x</sub>, NMHC and PM<sub>10</sub> for any global transport chain.

The greenhouse gases are determined on the basis of fuel consumption. For this purpose all common types of fuel, including country-specific biofuel admixtures are covered in ETW.

The air pollutant emissions depend on the specific vehicle and its technical characteristics as defined by the emission class.

The sources used to calculate energy consumption, greenhouse gases and air pollutants are state-of-the-art and are continuously updated by our methodology partners.

It goes without saying that the methodology includes EN 16258- and GLEC-compliant calculation of the upstream chain and always shows the detailed emissions for Well-To-Tank (WTT) and Tank-To-Wheel (TTW). The complete methodology of ETW is published in the detailed methodology report at [www.ecotransit.org/basis.en.html](http://www.ecotransit.org/basis.en.html). The correct application of the methodological specifications was validated by the institutes involved and officially confirmed ("Methodology Confirmation").

## Transport sections in ETW are calculated by the steps below:

- 1 Definition of the route by the internal routing algorithm and detailed transport-specific GIS data networks.
- 2 Splitting of the route into relevant sections for a calculation with specific parameters, for example, road transport or the electricity mix in different countries.
- 3 Calculation of the respective basic emission parameter and the basic consumption curve depending on the transport description (e.g. vehicle, emission class) and the characteristics of each section.
- 4 Determination of the energy consumption and emissions with a corresponding calculation formula based on freight, base emission factor, route length, freight allocation, load factor and empty runs per relevant section.
- 5 The sum of all relevant sections indicates the total energy demand and the total transport emissions.

## Transport details

Gross weight in tonnes or as TEU incl. t/TEU

### Input data

#### Origins, destinations, waypoints

- Postal codes
- UN-/ Locodes
- IATA codes
- Railway and loading stations
- Geographic coordinates

#### Mode of transport

- All common truck types
- All common train types
- Container, Bulk, RoRo ships
- Over 250 aircraft types

#### Transport description

- Individual vehicle type
- Fuel types
- Load factor and share of empty runs
- Global emission classes per traffic type
- Optional refrigerated cargo

### Calculation

- Global ETW internal routing by transport mode
- Automatic determination of transfer points for ports, airports and railway stations
- Network-specific attributes, such as street category, electrification or ECA area
- Automatic detection of stopovers based on the flight number

#### Automatic transport parameters

- Vehicle type, fuel quality, emission class per country worldwide
- Tradelane and ship category
- Load factors for FTL, LTL, FCL, LCL
- Identification of the aircraft type based on the flight number

#### Proven sources

- Handbook for Emission Factors, MOVES
- International Maritime Organization, Clean Cargo
- Small Emitters Tool Eurocontrol
- Other sources

## Calculation results

#### Emissions as WTT and TTW

- CO<sub>2</sub> (carbon dioxide)
- CO<sub>2</sub>-e (carbon dioxide equivalents)
- NO<sub>x</sub> (nitrogen oxides)
- SO<sub>x</sub> (sulphur oxides)
- PM<sub>10</sub> (particulate matters)
- NMHC (non-methane hydrocarbons)

#### Additional output options

- Waypoint distances also as KML file
- Optional split by country, mode of transport or fuel type
- Detailed description of the calculation parameters used for each section

# ETW Business Solutions

The EcoTransIT World API is the flexible solution for the automatic calculation of customer-specific transport chains.

The ETW Business Solutions contain standardised interfaces (API) for automatic emission calculation of huge amounts of transport chains. Already today, several hundred million transports are calculated every year via the API. The use ranges from an individualised website to semi-automatic calculations of transport lists in CSV format to a fully automatic solution based on a Soap XML Web Service (WSDL).

The ready-to-use standard solutions are extremely flexible and allow to calculate complex intermodal transport chains with little or much customer-specific transport information. If necessary, user-

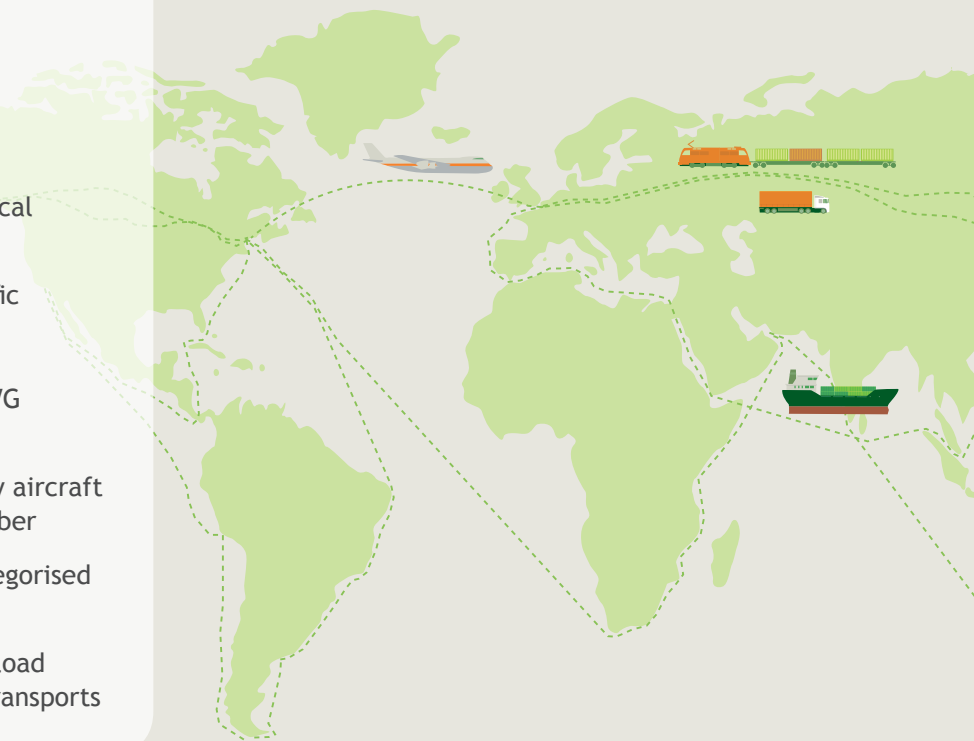
defined adaptations or extensions to the software are made available.

The interfaces are offered as Software-as-a-Service. The associated servers are provided by IVE mbH and are continuously monitored by specific monitoring software. Server costs and regular updates are included in the license fees.

In addition to the API, the IVE mbH team offers to calculate, analyse and present customer-specific transports as consultation projects.

## Benefits compared to the website:

- Automated calculation of large transport volumes
- Individual technical and methodical consultation
- Consideration of customer-specific transport characteristics
- Complete integration of the CCWG methodology for sea freight
- Registered flight plans to identify aircraft type and stopovers by flight number
- More than 250 aircraft types categorised by cargo and passenger aircraft
- Automatic determination of the load factor for FTL, LTL, FCL or LCL transports



## EcoTransIT World Interfaces

Soap XML  
Web Service  
(WSDL)

Upload of  
transport lists  
in CSV format

Customer-specific  
calculation  
websites

### Additional features / modules

Data security provided by dedicated hardware with secured encrypted data transfer

LocationEditor to integrate new or company-specific locations

LogViewer to create statistics and analyses of the calculated results

## Calculation Service

We calculate and validate your transport lists for you  
as part of our consultation projects.

The calculation results are evaluated and provided  
as tables and charts (KPIs).

# EcoTransIT World Initiative (EWI)

Become part of the EcoTransIT World Initiative – the independent platform for users of Business Solutions.

The EcoTransIT World Initiative (EWI) aims at continuously developing and harmonising the emission calculation methodology for the global transport sector. The ETW tool shall be established as the globally recognized calculation tool.

The EWI initiated internal work groups for dedicated issues, such as the methodology group. Their aim is to discuss and coordinate the upcoming methodology adjustments in cooperation with the respective scientific institutes.

The EWI operates on an annual budget generated from the license fees. This budget is used to fund continuous costs such as the ETW website, GIS data, OAG flight data as well as all methodological extensions and marketing events.

## Topics of the initiative

**Control and coordination,  
EWI Budget**

**Methodical and general development  
of EcoTransIT World**

**Initiatives, NGOs,  
national and international  
calculation standards**

## Your contact person

Dipl.-Ing. Ralph Anthes  
Project Manager EcoTransIT World

IVE mbH  
Lützerodestraße 10  
30161 Hanover | Germany

info@ecotransit.org  
www.ecotransit.org

Phone:  
+49 511 897 668-18  
+49 511 897 668-10

