Carbon footprint of electronic card

Example of using the CODDE database

LCIE Bureau Veritas General public infographics
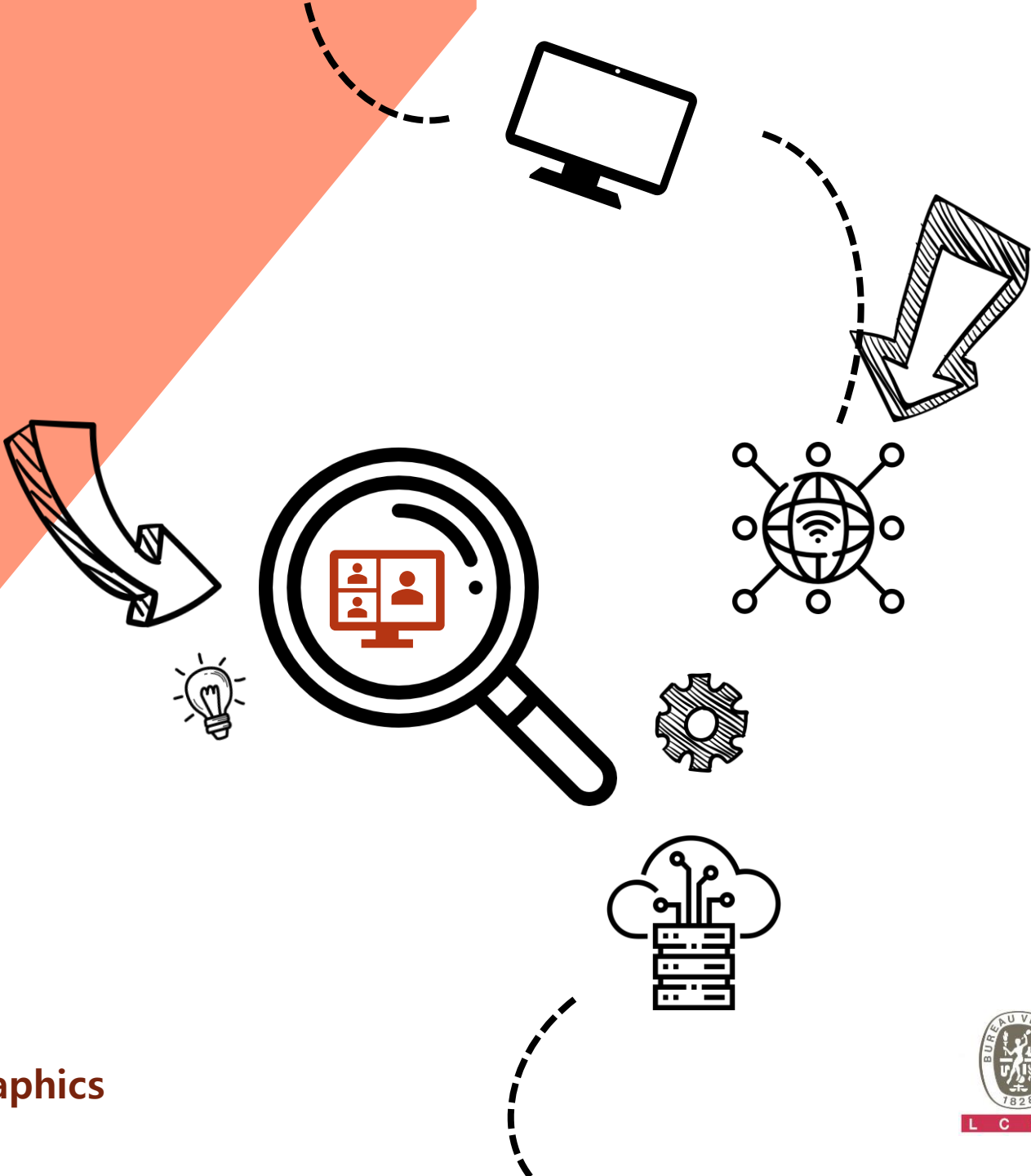
Using EIME V6 with the CODDE database

eime

EIME allows companies to eco-design their products and services and to produce communication media with several available databases:

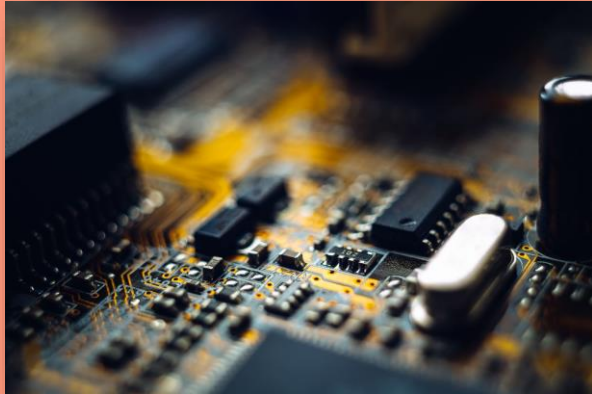| **CODDE®**	**NEGAOCTET®**	**ECOINVENT**	**BASE EMPREINTE®**	**BASE PEF/OEF®**
General and sectoral database	Database dedicated to digital service	Private generalist database	Public database	Public database
4 200 Data	*1 500 Data*	*16 000 Data*	*1 650 Data*	*3 000 Data*

For more than 20 years, the CODDE database, specific to the electrical and electronic products sector, has been developed in-house and integrates life cycle inventories of industrial partners as well as ELCD*.

*European Plateform on Life Cycle Assessment

Summary result of an electronic card study

Usage scenario:

7,53 kg CO_2 eq.

Carbon footprint obtained with EIME software and
the "PEF EF 3.0" indicator set

What does this represent ?

35 km by car
Source : datagir.ademe.fr

Distribution of components
Integrated circuits : 6
Capacitors : 66
Resistors : 106
Diodes : 10
Transistor : 6
Connectors : 10
Additional welds : 6
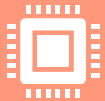
Substrate type: FR4
Number of layers : 2
Board surfaces: 104 mm²
Finishes : Solder mask

Fabrication en Chine

Analysis of results – multi-indicator impacts on the manufacture of an electronic card
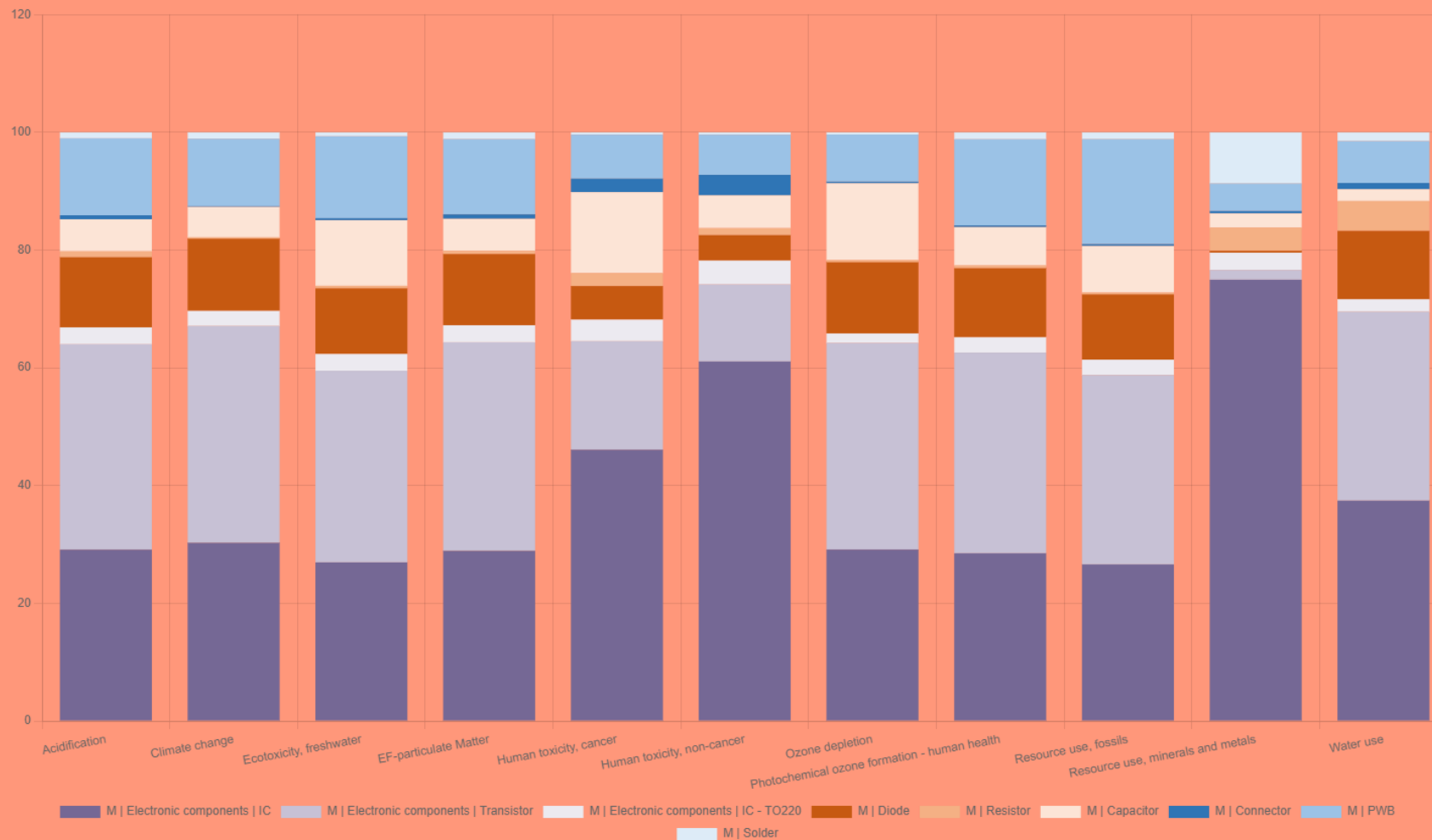
Contribution

Major contribution of integrated circuits on the depletion of abiotic resources in elements 75% of impacts. Between 25% and 32% on other indicators.

Transistors contribute from 29% to more than 37% of impacts while PWB PCB contributes 4% to 22% on all indicators.

CODDE database General public infographics

More details with the use of the NégaOctet database!

CODDE + **NégaOctet**
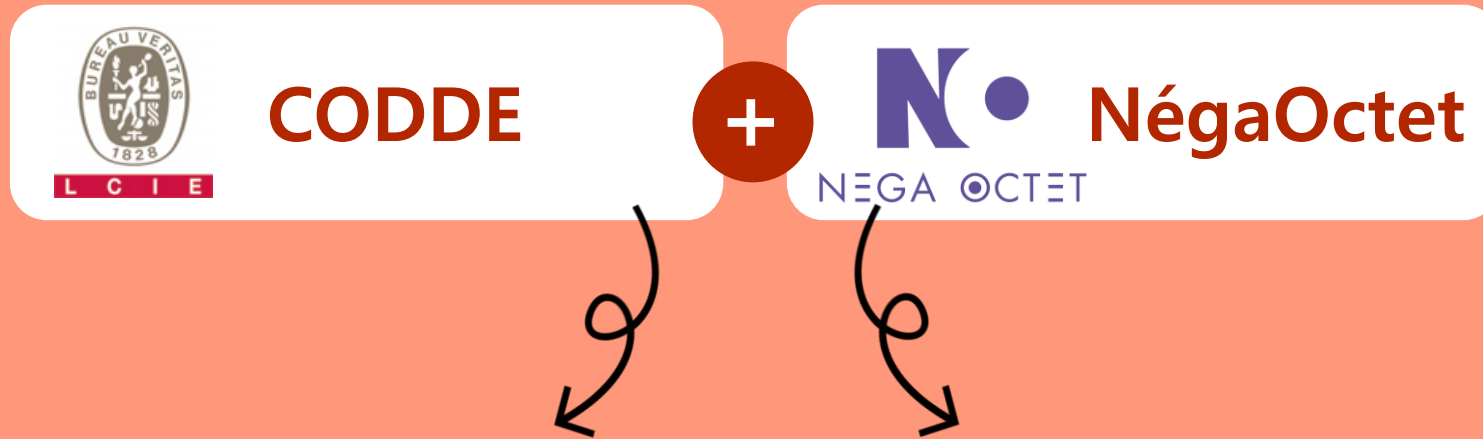
Component and process data on:

| Batteries
| Capacitors
| Connectors
| Diodes
| Heat sinks
| Inductors
| Printed circuit
boards

| Resistors
| Thyristors
| Transformers
| Transistors
| **And many more...**

Additional precision at the
component level with:

| Wafer
| Processors
| RAM
| SSD

| Screens
| Graphics cards
| **And much more...**

More details with the use of the NégaOctet database!

NégaOctet

NEGA OCTET

Benefits:

- Modeling data adapted to the IT sector
- Access to an additional component catalog

Key figure

9, this is the difference in carbon impact that can exist for the manufacture of processors.

Not all processors are equivalent on the environment. The NégaOctet database takes into account the technical parameters of semiconductor manufacturing: die surface, number of masks.

Source : Rapport final d'étude NégaOctet, 2021
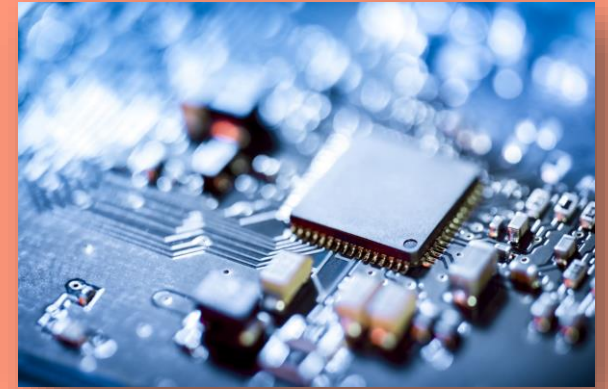
Contact

**LCIE Bureau Veritas
170 rue de Chatagnon
ZI Centr'Alp
38430 Moirans**

codde@bureauveritas.com

LCIE Bureau Veritas General public infographics