Ekara
Green

How can you measure the carbon footprint of your digital services?

The European Union's CSRD requires companies to account for their carbon footprint.

The stakes of environmental protection are high and numerous for ensuring a sustainable future for our planet. Environmental obligations vary from one country to the next, and are often governed by specific laws, regulations, and standards. Nevertheless, there are general principles and global trends that influence environmental obligations.

L The EU's Corporate Sustainability Reporting Directive (CSRD) encompasses the practices and initiatives that companies have put into place to address social, environmental, and ethical concerns in their business activities and interactions with all parties involved.

The publication of CSRD-related information often takes the form of reports in which companies detail their actions and performance in those domains. This performance is measured in 90 mandatory indicators, 5 of which pertain to carbon emissions.

1 January 2024

2025 (on 2024 data)

Companies already complying with the EU's Non-Financial Reporting Directive (NFRD) since 2018. These are companies which fulfil two of the following criteria: more than **500** employees, turnover of over **€40 million**, assets totaling over €20 million.

1 January 2025

2026 (on 2025 data)

These are companies which fulfil two of the following criteria: more than 250 employees, turnover of over **€40 million**, assets totaling over **€20 million**.

1 January 2024

2027 (on 2026 data)

Listed SMEs: excluding those having fewer than 10 employees, total assets under **€350,000,** or net turnover under **€700,000.**

To steer environmental, social, and governance (ESG) performance, companies need reliable tools to measure their carbon emissions accurately and precisely, in particular the carbon footprint of their IT systems.

What tools can track the carbon footprint of an application portfolio for CSRD reporting?

Some companies rely on a community tools that are free and transparent. These can assess absolute environmental performance for a given URL with a score based on 100 as well as relative environmental performance with a grade from A to G.

Measuring an application's CO2 consumption accurately can be complex; it often requires specific data and the appropriate measurement tools. In all cases, it is more complex than a simple analysis of a web page.

Companies therefore need reliable, purpose-designed tools to measure their carbon footprint accurately, especially the CO2 emissions attributable to their information systems and digital services, counting every type of application (web, business, mobile).

Synthetic monitoring solutions that simulate user interactions with an application or system, along with solutions that manage user-side performance with real-user monitoring (RUM), contribute to more efficient use of resources, driving reductions of carbon emissions, and promoting sustainable practices in information technology.

Ekara Green, an innovative, eco-responsible solution for managing the carbon footprint in conformity with the CSRD

Ekara Green can monitor the carbon emissions of all applications in an information system. Ekara Green does not merely analyze a page, but entire scenarios, to obtain a whole set of indicators that goes beyond simple eco-indexes.

Ekara Green calculates over time an index which combines a number of relevant indicators that are useful for managing the carbon footprint of an application portfolio.

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kara Green assesses the carbon footprint based on the indicators it measures for continuous improvement

Here are some of the KPIs that can be selected to evaluate the environmental impact of an application portfolio that is measured with a synthetic and real-user monitoring system. These KPIs must be defined in accordance with specific characteristics of the company's application portfolio and the environmental targets of the organization.

Energy consumption per transaction: to measure the amount of energy consumed by each transaction or user interaction. This can be expressed in kilowatt hours (KWh) per transaction.

CO2 emissions per transaction: to calculate the carbon dioxide (CO_2) emissions involved in each transaction. This can be measured in grams or kilograms of CO_2 per transaction.

Energy efficiency: to assess an application portfolio's overall energy efficiency by measuring the amount of energy required to process a unit of work, such as a user request.

Page loading time: pages that load quickly generally consume fewer client and server resources; faster loading contributes to lowering energy consumption.

Error rate: applications that generate fewer errors require fewer additional resources to process and correct such errors, which can have a positive effect on eco-design.
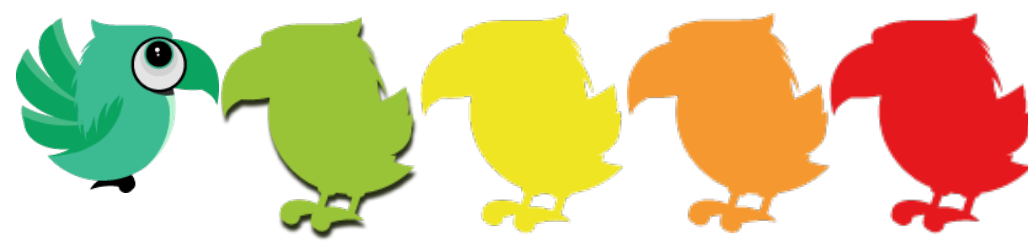
Number of network requests: the aim is to reduce the number of network requests, as each additional request may require additional energy resources.

Environmental impact per active user: to assess the average environmental impact per active user with respect to the activities carried out using the application.
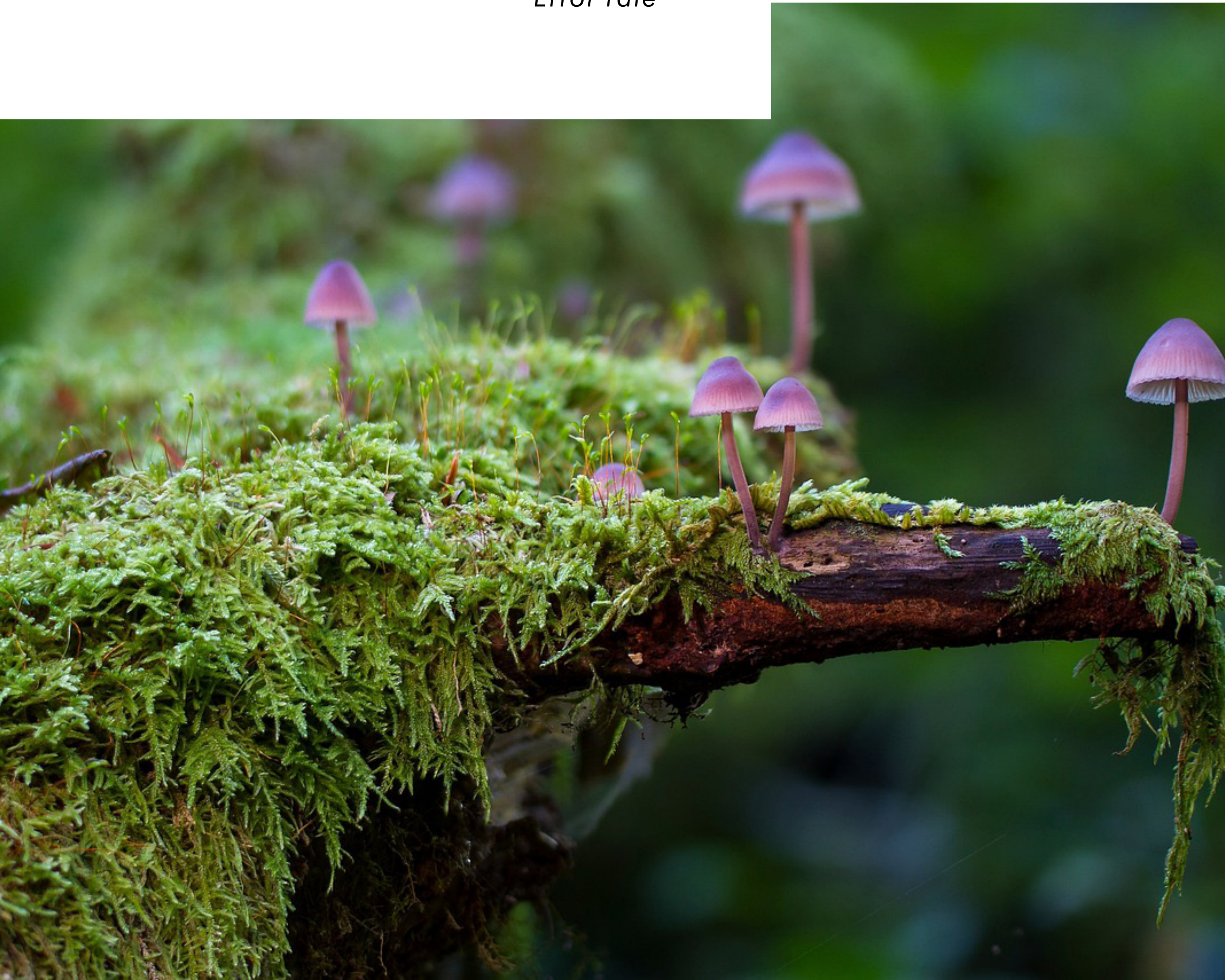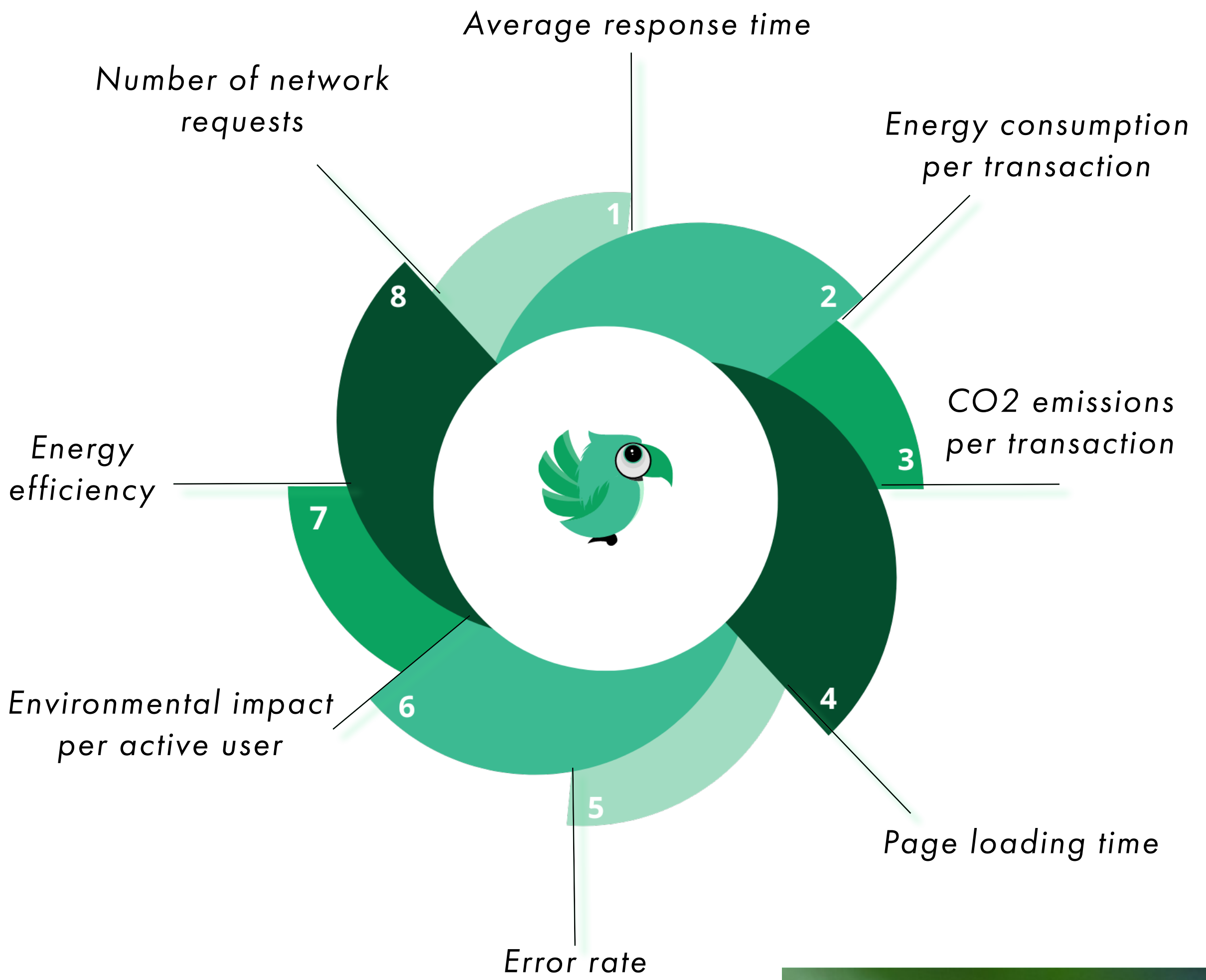
Average response time: to indicate more efficient use of resources, which can contribute to a reduction in the carbon footprint.

In addition, setting up continuous monitoring and comparing data to references helps companies to identify optimization opportunities and evaluate the effectiveness of the actions they take. Taken together, all of these KPIs serve to define an index, the Ekara Green Score.

The set of KPIs contributes to defining an index: *Ekara Green Score!*

Lesser impact
on the environment

Greater impact
on the environment

Average response time

Number of network
requests

Energy consumption
per transaction

CO_2 emissions
per transaction

Energy
efficiency

Environmental impact
per active user

Page loading time

Error rate

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3
4
5
6
7
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kara Green's data visualization tool offers the possibility of structuring collected data
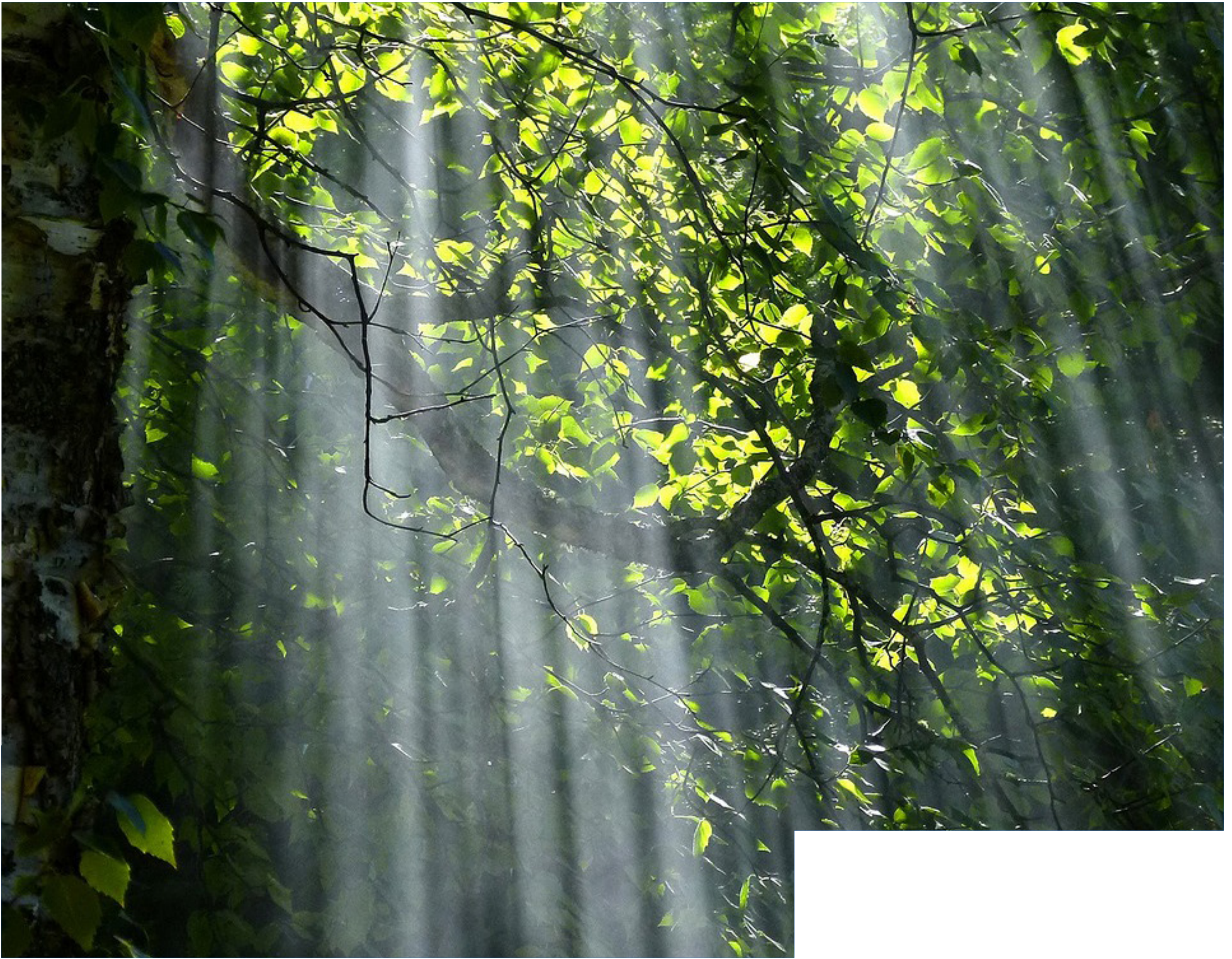
To play a part in an approach to optimizing the carbon footprint, the data collected by Ekara Green needs to be structured.

Actions are driven on the basis of periodical reports which make the whole set of data comprehensible to everyone involved in the application portfolio's energy performance and carbon footprint.

These periodical reports not only show the current trends measured, but also provide retrospective data so that you check the effectiveness of actions that the company has implemented.

Furthermore, all data collected by Ekara Green can be correlated with business data to precisely identify the footprints of the company's specific activities.

This ecologically responsible approach should gradually be integrated into the elements of corporate management.

In time, non-compliance with these obligations will give rise to penalties. To an increasingly greater extent, these criteria will be referred to in assessments of business performance.