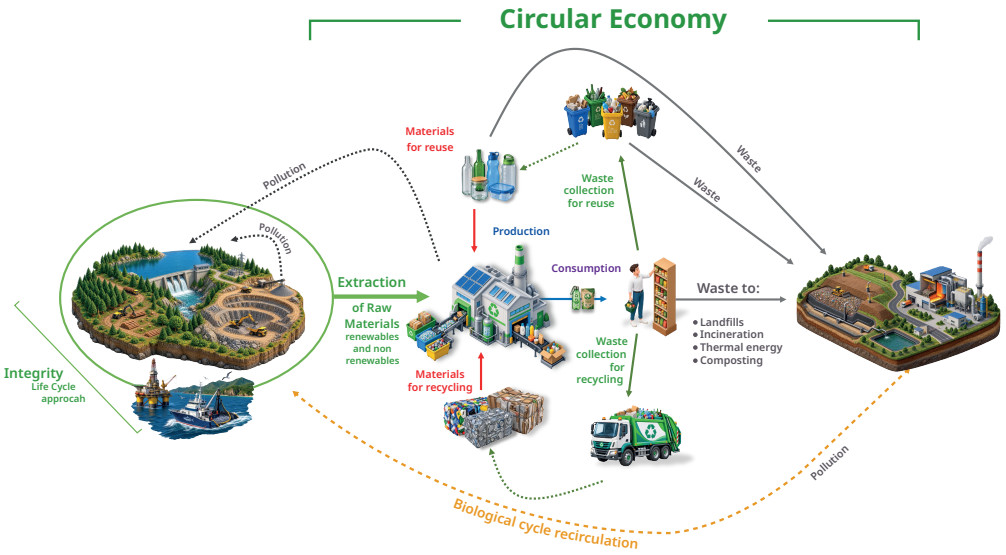
Methodology for Measuring and Assessing the Circularity of Products and Services

What is a Circular Economy?

It is a model that seeks to keep products and resources in use for as long as possible, while reducing the extraction of virgin raw materials, waste generation, and pollution.



Why was this Methodology developed?

The transition toward a circular economy is a national and international priority. Mexico's General Law on Circular Economy (LGEC), its Regulation, and the IPN Institutional Circular Economy and Zero Waste Program (PIECC 2026-2030) call for tools that measure circularity objectively and produce comparable, verifiable results. This methodology was developed to meet that need.

Beyond Recycling

How can we assess whether a product, process, or system is truly circular?

Purpose of the Methodology

To measure and assess circularity across products, services, product-service systems, organizations, or processes through verifiable, robust, and traceable indices and indicators.

Who is it intended for?

Companies, productive sectors, public institutions, organizations, service providers, and other stakeholders that need to demonstrate their circularity performance in a clear, comparable, and traceable manner

Avoiding Environmental Burden Shifting

The methodology is based on a fundamental principle: **environmental impacts should not be shifted from one stage or location to another**. It seeks to prevent improvements in the circularity of a product or service from causing pollution, environmental degradation, or increased resource consumption elsewhere in its life cycle.

Why does it matter?

Because it makes it possible to distinguish between:

- ✓ genuinely circular solutions and
- ✗ strategies that merely appear to be circular

What makes this Methodology different?

It does not merely assess whether a product contains recycled material or can be recycled at the end of its useful life.
It integrates and brings together three international reference frameworks to assess circularity from a holistic perspective:

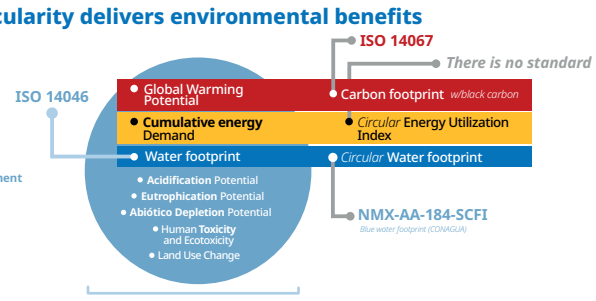
Mandatory indicators

ISO 59020 Circular Economy Standard — Raw materials **input-output** registry according with its source and final use. → **Material Circularity** quantitative %

+ **Ellen MacArthur Foundation** Índex — Materials Circularity Index: ■ Inputs ■ Outputs → **Systemic Circularity by design** Dimensionless index

+ **Life Cycle Assessment** Envoronmental Integrity Measurement Standard ISO 14040/44

True circularity delivers environmental benefits



→ **Ennvironmental Footprint** cumulative impact by categories

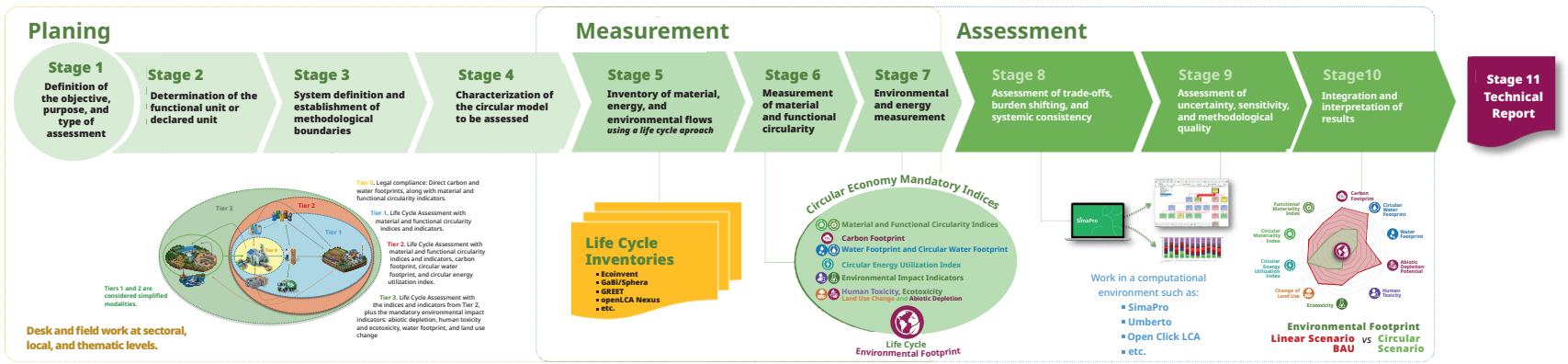
ISO 59020: measurement and assessment of circularity performance for materials, functions, and services.

Ellen MacArthur Foundation: measurement of material circularity, including the use of secondary materials, reduction of virgin material inputs, and preservation of material value

ISO 14040 / ISO 14044 and the ISO 14000 family: provide the Life Cycle Assessment (LCA) framework for assessing environmental impacts from raw material extraction through end-of-life, thereby helping to prevent environmental burden shifting.

How does it work?

The methodology is structured into **11 stages** that form a structured, iterative, documented, and technically verifiable process.



What outcomes are expected from its application?

Companies:
- Identify genuine circularity opportunities.
- Reduce dependence on virgin resources.
- Substantiate environmental claims.

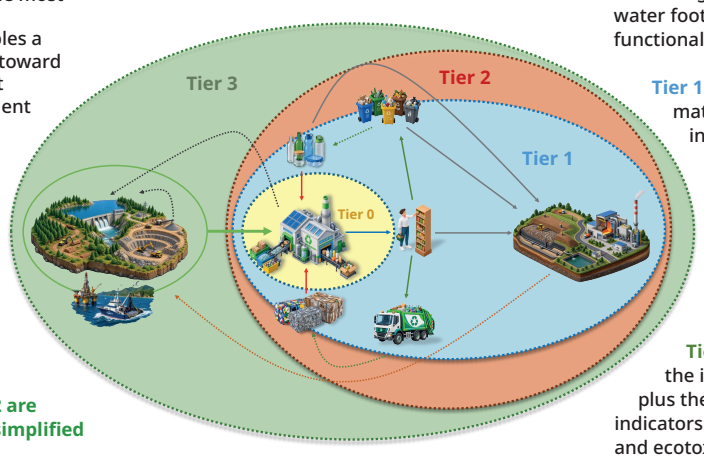
Governments:
- Provide a technical basis for regulation.
- Strengthen sustainable procurement.
- Promote certification schemes.

Consumers and Society:
- Greater transparency.
- Less *greenwashing* or circular washing.
- Informed decision-making.

For México:
- Circular transition aligned with international standards.
- A truly circular economy.

Tiered Compliance

Not all organizations need to begin at the most complex level. The methodology enables a gradual transition toward increasingly robust circularity assessment schemes.



Tiers 1 and 2 are considered simplified modalities.

Tier 0. Legal compliance: Direct carbon and water footprints, along with material and functional circularity indicators.

Tier 1. Life Cycle Assessment with material and functional circularity indices and indicators.

Tier 2. Life Cycle Assessment with material and functional circularity indices and indicators, carbon footprint, circular water footprint, and circular energy utilization index.

Tier 3. Life Cycle Assessment with the indices and indicators from Tier 2, plus the mandatory environmental impact indicators: abiotic depletion, human toxicity and ecotoxicity, water footprint, and land use change

Did you know...?

The **Carbon Footprint** under this methodology incorporates the quantification of **Black Carbon**, a short-lived climate pollutant with significant atmospheric warming effects and serious implications for public health.

Mexico has already included specific Black Carbon reduction targets in its Nationally Determined Contributions (NDCs) under the Paris Agreement, and with the update of international inventory guidelines expected in 2027, its measurement is relevant to climate action.

The **Circular Energy Utilization Index** is an innovation introduced by this methodology that assesses how efficiently energy is used to generate value, helping identify opportunities to improve the environmental and circularity performance of products and services.

Greenwashing occurs when an organization communicates environmental benefits that it cannot substantiate with objective evidence.

The IPN Methodology incorporates specific safeguards because claims such as:

- ✓ **100% recyclable**
- ✓ **Contains recycled material**
- ✓ **Sustainable**
- ✓ **Zero Waste**
- ✓ **Circular Carbon Neutral**
- ✓ **Environmentally Friendly**

May be misleading if they are not supported by verifiable evidence.

Circularity is not declared; it is demonstrated with evidence.