

*A Multi-Partner Initiative,
coordinated by Building Transparency on behalf of the governing partners*

**ODCi Foreground LCA Models for Construction Materials
Initiative Brief & Practitioner Guidance
October 2026**

What ODCi delivers – and why it matters

The Open Data for Climate initiative (ODCi) develops generic Life Cycle Assessment (LCA) data for construction materials, with final, independently verified datasets designed to be made openly available to the public. These data fill gaps in regionalized environmental information for building materials, support baseline assessments, inform regulators, and promote life-cycle-based design decisions worldwide. A defining feature of ODCi is that datasets released under the initiative are subject to independent third-party verification against a common set of Verification Guidelines. This consistent verification framework is essential to maintaining reliable quality and comparability and differentiates ODCi from data provision without a common quality-assurance framework.

The ODCi methodology is built for compatibility with EN 15804+A2 and ISO 21930 – the predominant standards for construction product Environmental Product Declarations (EPDs) in Europe and North America. This dual-standard alignment means that datasets produced through this work can serve as the basis for consistent environmental assessments of construction works across both frameworks.

ODCi has developed foreground LCA models – covering the manufacturing processes and material flows researched and modeled by the ODCi project team – without pre-connected background data. This approach allows qualified LCA practitioners and data providers, operating under the ODCi governance framework, to connect an appropriate background LCI database available to them that meets the methodological requirements defined in the ODCi methodology¹. These criteria include license terms permitting disclosure of models to reviewers, publication of results and long-term maintenance, which are non-negotiable. The background database must be selected and documented before modeling begins and applied consistently across a data-development package. Access to and use of the foreground models, pre-release documentation sheets and research materials should be governed by ODCi terms and conditions rather than unrestricted release, in order to preserve consistent application, data quality, and the public-interest purpose of the initiative. ODCi is a not-for-profit initiative: final, verified datasets and their documentation are intended to be openly available to the public. Any fees, whether for access to pre-release materials or for commercial-scale or programmatic use of the data (for example, via API), would be set only to recover the costs of dataset generation, verification, publication, and maintenance.

What's in the package

For each material category, ODCi delivers three components:

1. *Parameterized Foreground LCA Models* – Built in Umberto², these models cover cradle-to-gate manufacturing as consumption mixes for the respective regions, namely Africa, Asia, Central & South America, Europe, Middle East, North America, and Oceania. They include parameters for low, typical, and high manufacturing scenarios, enabling users to generate datasets reflecting the range of environmental performance on the market. The first available examples include steel sections, cement and concrete, and glued laminated timber.
2. *Dataset Documentation Sheets* – These cover the core documentation fields required for final datasets – product description, system boundaries, declared unit, representativeness, and limitations – but are provided without reference to any specific background database. Background data information must be added when finalizing datasets.

¹ More information will be available in an ODCi Methodology document, Section 3.2, "Selection of Background Data" (Coming soon)

² See [Umberto – LCA Software for Life Cycle Assessment | IPOINT](#). Note that special software agreements are available related to ODCi.

3. *Research Materials (Data Collection Sheets and supplementary data)* – These contain the information and sources used to build the foreground models: production data, regional trade statistics, energy inputs, material compositions, allocation decisions, and all underlying assumptions with their references. Practitioners are expected to work with these materials to understand and validate the data and assumptions behind the models before proceeding.
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Working with the models: Practitioner Guidance

Connecting background data to these foreground models is not a purely mechanical exercise. It requires technical judgment. The ODCi methodology defines a dataset selection hierarchy and specific rules for utilities, transportation, and raw material sourcing that practitioners should follow. The choice of background data must be particularly sensitive to limitations set out in the data license terms, and needs to support the indicators that are intended to be calculated for the datasets.

Build regional energy models first. Regionalized electricity and industrial-heat models are not supplied with the foreground models. They must be built from the selected background database for each region, using the country shares documented in the ODCi methodology. Under the methodology, these energy models are subject to quality assurance and third-party verification before they are used in material models.

Pay particular attention to dataset boundaries. Background datasets from different sources may define their system boundaries differently – for example, whether transportation from the production site to the region of consumption is included within an upstream raw material dataset or must be modeled separately. Practitioners must review these boundaries carefully to avoid double-counting of transport or other flows, and equally to avoid inadvertent omission. This review is essential for every background dataset connected and should be informed by the documentation accompanying the respective background database. Background datasets may also include infrastructure that is excluded from the ODCi foreground models; its inclusion and relevance must be checked and documented. Practitioners should also confirm the declared unit of each model: most use 1 kg of product net of packaging, but some declare 1 kg gross (product plus packaging).

The models are regionalized and parameterized to represent consumption mixes for defined geographic scopes. The scenario parameters (low, typical, high) allow the generation of datasets covering the range of manufacturing situations relevant to each region.

From models to final datasets

ODCi's internal quality assurance process applies three QA gates using standardized checklists. The foreground models have passed Gate 1 (data collection) and Gate 2 (model review); Gate 2 was passed with the limitation that some modeling may need adjustment once background data is connected. Gate 3 (datasets) follows finalization. These QA steps are not a substitute for independent third-party verification.

Third-party verification is required for any dataset intended to be released or recognized as ODCi data. The ODCi framework includes a dedicated generic data verification scheme, developed by ECO Platform, that defines verification requirements, actor roles, and sampling procedures for ODCi datasets. Because verification must cover not only the foreground model but also the connected background data and the resulting LCA indicators, it can only be completed after finalization. Verification may, however, be staged, with data collection and the model verified after their respective QA gates. The existing Verification Guidelines should be adapted to the stripped-model approach and tested in a pilot before full verification activities are planned and scaled. The ODCi framework is intentionally designed to allow additional data providers to contribute datasets in the future, provided they comply with the same methodology, Verification Guidelines, and rules for publication and use.

Final datasets can be produced in formats compatible with European and North American EPD frameworks. The ODCi methodology defines a "SuperFormat" mechanism that reconciles the data fields required for both ILCD+EPD and OpenImpact output formats. Excel files can serve as an intermediate step in this process; the full format specifications are detailed in the methodology documentation.

Following verification, ODCi datasets are intended to be published through the ECO Portal and EC3, alongside product-specific EPDs.

Beyond the basics: What else can you do with these models?

While the primary use case is to connect background data and finalize regionalized datasets, the ODCi foreground models also provide a foundation for more advanced applications:

- Further regionalization — Adapt models to cover specific countries or sub-regions beyond the ODCi default regional scope.
- Technology-specific variants — Adjust parameters to represent particular manufacturing technologies or supply chain configurations.
- Custom scenario development — Use the parameterized structure as a starting point for sensitivity analyses or policy scenario modeling.

The consistent ODCi methodology provides the basis for comparability; however, any extension intended to be distributed as ODCi data must comply with the same governance, methodological, verification, and publication requirements.

Get involved

To discuss access to ODCi foreground models, explore collaboration opportunities, or learn more about how these materials can support your work, please contact ODCi through its current coordination arrangements. Access and collaboration are subject to ODCi governance and Board-approved rules; Building Transparency currently provides coordination on behalf of ODCi's governing partners.

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