



ERP / SAP GUIDE

ERP / SAP data exchange

A practical guide from the first step to handover

MAC · IPAD · IPHONE

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Prepare source data. Review the proposed changes. Take your data with you.

This guide is for the reporting coordinator, the company's SAP data owner and its integration consultant. It explains the EnvironmentalReport **EDX-1.0** contract, not a direct SAP connection. Read it offline, search a term, or use **Share PDF** to give the same guide to the SAP team. **Export ERP/SAP instructions PDF** supplies the companion column-by-column technical reference.

1. Choose the correct exchange

Direction	What actually happens
SAP to EnvironmentalReport	Your authorized SAP team extracts source records, transforms them into our CSV schema and delivers one checksummed EDX ZIP. You validate and approve an import in EnvironmentalReport.
EnvironmentalReport to SAP	EnvironmentalReport exports an EDX migration ZIP. Your consultant transforms its tables into the chosen SAP target's own template or staging interface and tests the load there.
EnvironmentalReport to EnvironmentalReport	The exit ZIP also contains a typed Reimport layer for supported project/year data. This is a migration, not a complete native backup or a merge of two projects.

An arbitrary SAP spreadsheet, PDF report, IDoc, database dump or OData response is not an EDX ZIP. Renaming it does not convert it. EnvironmentalReport does not request SAP credentials, call SAP APIs, upload into SAP, or guarantee compatibility with every SAP configuration.

Agree the exact SAP product/release, source company codes and plants, reporting period, units, currencies, extraction cutoff and responsible reviewer before extracting anything. Do not use a company-wide export when only one legal entity is in scope. SAP ECC, S/4HANA, EHS and sustainability products do not share one universal export/import screen.

2. Give the SAP team the preparation kit

1. Open the correct project and select its **Reporting years** value.
2. Open **Data exchange** under **Advanced**, then **ERP Data Exchange**.
3. Select **Export empty EDX template** and save the ZIP. This defines the filenames and column headers; it is not a completed package.
4. Select **Export ERP/SAP instructions PDF** and save the PDF. It describes every field, required values, examples and format rules.

5. Open **ERP / SAP guide** and use **Share PDF** if the team also needs the complete workflow and exit explanation.
6. Send these files through the company's approved channel with the extraction scope and an agreed reconciliation checklist. Neither export button sends an email or connects to SAP.

The SAP team should use an approved report, query, released interface or company-managed extraction process for its actual system. Select document items rather than only invoice-header totals. A meter reading is a consumption record, not a monetary amount. Preserve the original reference for every source document.

3. Assemble exactly this input package

Place the following files at the ZIP root, not inside an extra enclosing folder. Keep empty data tables with their original headers. Do not put explanatory rows before the header.

```

ImportInstructions.pdf
package_manifest.csv
organizations.csv
transactions.csv
meter_readings.csv
material_movements.csv
waste_records.csv
document_index.csv
Documents/<original files>
Integrity/SHA256SUMS.txt

```

Keep the supplied **ImportInstructions.pdf**. Populate **package_manifest.csv** as a two-column key, value CSV. Required keys: `schema_version = EDX-1.0`, `unique package_id`, `source_system_type`, **stable** `source_system_instance`, `extracted_at`, `reporting_year`, and `created_by`. Optional keys are `source_organization_id`, `package_revision`, and `notes`. Use a UTC timestamp such as `2026-02-01T10:00:00Z`. Set the agreed reporting year; never copy a template year blindly.

All record tables use `source_record_id` as a stable source identifier. Preserve `source_record_revision`, `source_document_id`, `extracted_at`, `record_status`, and `correction_of_source_record_id` where relevant. `record_status` accepts `active`, `reversal` or `correction`; `omitted` or `blank` means `active`. Explicit values are recommended for handoff clarity. The optional `mapping_disposition` accepts `map` (also the default when blank) or `source_only`; other values are rejected. Original fields and row fingerprints are preserved.

What goes into each table

CSV	Required business values, in addition to source_record_id
organizations.csv	company_id, company_name, company_code, site_id, site_name, country
transactions.csv	document_id, document_line_id, document_date, quantity, source_unit, currency
meter_readings.csv	meter_id, site_id, energy_type, period_from, period_to, consumption, source_unit
material_movements.csv	movement_id, movement_date, material_id, quantity, source_unit, movement_type
waste_records.csv	waste_record_id, date, site_id, waste_code, quantity, source_unit, treatment_method
document_index.csv	document_id, filename, document_type; this table does not use the common record header

Retain the template's optional columns. Examples include posting date, supplier, company/plant, cost centre, amount, material description, site addresses and validity, waste recipient and reversal references. The exported technical PDF and actual template are the authoritative full column list; do not invent substitute header names.

For documents, also fill `mime_type`, `sha256`, `related_record_type`, `related_record_id` and document date when available. `related_record_type` uses `organization`, `transaction`, `meter_reading`, `material_movement` or `waste_record`. The related ID must identify the corresponding source row. A transaction's `document_id` is its business document number; `source_document_id` links to `document_index.document_id`.

Worked example: purchased electricity

Use an empty test project for 2026 and retain every template column. Declare `SITE-BA-01` in **organizations.csv**. Put the following values in one **meter_readings.csv** row; optional references may remain empty if no document is supplied.

Field	Example value
source_record_id	METER-EL-2026-01
source_record_revision	1
extracted_at	2026-02-01T10:00:00Z
record_status	active

Field	Example value
meter_id	EL-BA-001
site_id	SITE-BA-01
energy_type	electricity
period_from	2026-01-01
period_to	2026-01-31
consumption	1.5
source_unit	MWh

Set the manifest's reporting year to 2026, give the package a new ID, then regenerate checksums. After validation, an empty, unreviewed electricity destination should show **1500 kWh** in the audited proposal. A non-zero or reviewed destination should be preserved. Confirm the actual result in **Report data**, not just the row count. This single-month example is a test case, not a complete annual inventory. Never load it into a real company project.

4. Preserve meaning, not just CSV syntax

Use UTF-8, commas as delimiters, one header row and the decimal point. Quote a cell containing a comma, quote or newline; double an embedded quote. Do not add thousands separators. Keep source IDs as text, including leading zeros. Use ISO dates such as 2026-01-31, ISO country codes such as SK, and ISO currency codes such as EUR.

Empty is missing, not zero. Enter 0 only for a documented zero. Final mapped quantities must be nonnegative. Electricity uses energy units (kWh, MWh, GJ, MJ), water volume (m3, m³, L, including litre/liter aliases), and waste mass (kg, t, including metric-tonne aliases). For example, 1.5 MWh maps to 1500 kWh and 1500 L of water maps to 1.5 m3; original values and units remain in history. Wrong dimensions, such as electricity in kg, block import. A currency amount is not physical consumption. Other meter activities must be explicitly `source_only` and entered through their appropriate reporting workflow.

For mapped meter rows, `period_from` and `period_to` are inclusive YYYY-MM-DD dates inside the manifest's calendar `reporting_year`; start must not be after end. Intervals for the same site, meter and activity must not overlap within the package. Mapped waste dates must also belong to that year. Split cross-year consumption upstream; the importer does not prorate it. Source-only historical rows and complete-exit projections are not current-year quantity inputs. Document/posting dates can legitimately differ from consumption dates. Company scope, completeness and cross-package coverage still require reconciliation by the responsible person.

Supply one final active revision per mapped meter/waste source ID in a package. Multiple mapped revisions, correction references or unreconciled reversal/correction events block import. Revision labels have no inferred ordering, and the importer does not compute an event ledger. Reconcile in the source system, retain the complete original event history with `mapping_disposition=source_only`, and send the approved final value as one active mapped row. Source-only rows produce a warning and never update reporting quantities. Transactions/material movements remain provenance and may retain linked source events.

For example: original `METER-1` revision 1 reports `1.5 MWh`, and revision 2 corrects it to `2.5 MWh`. Send revision 1 and any correction event as `source_only`; send only revision 2 as `active, map`, with the final `2.5 MWh` and no event reference. Link supporting documents and retain the history. An empty unreviewed destination receives `2500 kWh`, not `4000 kWh`. If the original was fully cancelled, the reconciled final row may contain a documented `0`. This does not replace the separate evidence/review or numeric-zero confirmation workflow.

Never place spreadsheet formulas in data cells. The importer rejects formula-leading untrusted values. On exit, dangerous leading characters in text are prefixed with an apostrophe for spreadsheet safety; a receiving system must interpret the documented text-escaping rule, not execute the cell.

5. Add original documents and checksums

Copy the permitted original evidence into **Documents/** and index it. `filename` is relative to that folder, for example `electricity/invoice-000123.pdf`. Use forward slashes; no absolute paths, `..`, symlinks or duplicate paths. Documents without a recognized relationship remain material for manual review, not automatically verified evidence.

After every CSV and document is final, calculate SHA-256 over the exact bytes of every package file except **Integrity/SUMS.txt** itself. Write one line per file in that checksum file, sorted by relative path:

```
<64-character SHA-256> Documents/electricity/invoice-000123.pdf
<64-character SHA-256> organizations.csv
```

There are two spaces between the hexadecimal digest and path. Include the PDFs, all CSVs and every original document; exclude directories. Recalculate after any edit. Then ZIP the contents, including **Integrity/**. Do not include `.DS_Store`, `__MACOSX`, temporary spreadsheets or an outer parent folder. Do not encrypt the ZIP; use an approved secure transfer channel instead.

Current limits: received ZIP 128 MiB, at most 1,000 entries, at most 64 MiB per expanded entry, 256 MiB total expanded data, and 8 MiB per metadata CSV. Highly compressed entries above 1 MiB are limited to a 100:1 ratio. The archive entry limit applies even when ordinary app evidence intake supports a larger original. A large archive may still take significant processing time. Do not bypass a rejection by discarding evidence or changing original bytes without approval.

Checksums prove byte consistency, not who created the source or whether its business values are correct. Keep the extraction scope, reconciliation and reviewer approval with the handoff.

6. Validate, review, then approve

1. In **ERP Data Exchange**, check the project and year and identify the approving person.
2. Choose **Choose EDX ZIP**. Read every blocking error and warning. Correct the source package and regenerate its checksums when needed.
3. Resolve requested unit, currency or site mappings only from documented facts. Unit conversion uses a positive multiplier. Currency mapping is a code mapping, not foreign-exchange conversion. A site target must exist in the package's organizations table.
4. Select **Run audited dry run**. Reporting data stays unchanged; the audit trail records the proposal. Review actual field values, document additions and the exact company/year, not just accepted-row counts.
5. Reconcile proposed electricity, water and waste with the approved SAP control totals. Confirm every required value appears in its intended destination. If the proposal is incomplete or wrong, stop; do not approve merely because validation passed.
6. Only then use **Approve and apply this import**. Review **Import history**, **Report data**, **Evidence**, calculation and readiness afterward. A successful import is not a completed or independently verified report.

Standard inbound mapping fills empty, unreviewed company/site text and supported electricity, water and waste totals. Transactions and material movements are retained as source/provenance; they do not automatically populate every Scope 1/2/3 or ESG field. Existing non-zero or reviewed values are preserved. Later monthly imports are therefore not automatically added to an existing annual total.

An exact previously imported package is detected and blocked from duplicate application. Changed contents under the same source ID/revision are a conflict. A changed project or proposal after dry run requires a new review. Never bypass a rejected hash or edit project files yourself.

7. What your company receives on exit

Select **Export complete EDX exit package** for the chosen project and reporting year, then save the ZIP. This exports data; it does not delete the project, send anything to SAP or create a full multi-year backup.

Package part	Purpose
package_manifest.csv	Schema, source project/year and package context.
organizations.csv and sites.csv	Organization, entity and site mapping information.

Package part	Purpose
activity_records.csv	Environmental activity/staging records.
ghg_calculations.csv and emission_factors.csv	Calculation rows and referenced factors for interpretation and reconciliation.
responsibilities.csv	Responsibility references, not a new operational owner workflow.
document_index.csv and Documents/	Indexed original evidence and available source/audit artifacts.
DataDictionary/	fields.csv, code_lists.csv and relationships.csv explain columns, codes and links.
MigrationGuide.pdf, ManagementReport.pdf	Migration instructions and a human-readable overview; not the normal issued VSME report.
Integrity/	SHA256SUMS.txt and AuditCertificate.pdf document package facts and consistency, not independent assurance.
Reimport/	Typed CSV portability data for EnvironmentalReport, not a SAP import template.

The package has no application JSON dump. CSV tables, PDFs, checksums and original documents are different from the separate **Supplier package** export. Inspect the complete ZIP before sharing: it can contain sensitive evidence and source packages beyond a normal report's selected appendix. Ordinary report inclusion switches are not an exit-export privacy filter.

Reimport/ preserves the published supported project/year snapshot, stable relationships and evidence links. It is not an additive merge: applying it can replace reporting values and group records in the destination. Prefer a new empty target project and review the complete dry run. Source verifier signatures, Audit Ready baselines, storage seals and audit events are not recreated as trusted target state. Invoice-reader work and UI progress are outside semantic migration. Use **Backup & Recovery** for native recovery needs.

8. Load the exported data into the selected SAP target

1. Have the SAP owner identify the exact receiving product, version, business object or measure, required dimensions, permissions and approved loading process.
2. Open our manifest and **DataDictionary/**, then obtain the target system's own current template. Map fields, units, company/site IDs, dates and relationships explicitly. An EDX filename is not evidence of SAP template compatibility.

3. Reconcile totals and check references in a non-production target. Record every transformation and any field that cannot be represented.
4. Review the target validation/import result and reconcile it back to the EDX package. Approve production loading under the company's SAP change process.

For **SAP S/4HANA Migration Cockpit**, the target migration object determines the supported template/staging structures. For **SAP Sustainability Control Tower**, the relevant measure and data-provider interface determine its columns and dimensions. SAP ECC, EHS and other targets need their own agreed mapping. This guide does not prescribe a guessed transaction code or universal database table.

The SAP consultant owns that target mapping and SAP-side execution. EnvironmentalReport neither performs nor confirms the SAP load. Keep the EDX ZIP, its hash, mapping specification, target validation log and acceptance result together.

9. CLI workflow and current automation limits

The Mac helper provides `edx template`, `edx instructions`, `edx validate`, `edx import`, `edx history`, and `edx export-exit`. Use the exact current broker prefix from **Agent / Command Line Access** in the open, unlocked Mac app. Read capabilities, workspace status, projects and supported years first. CLI control is not an iPad/iPhone shell and does not grant SAP access.

```
# ER_COMMAND is the exact command array copied from the Mac app.
"${ER_COMMAND[@]}" edx validate --input "$EDX_ZIP" --json
"${ER_COMMAND[@]}" edx import --input "$EDX_ZIP" \
  --project-id "$PROJECT_ID" --year "$YEAR" --actor "$ACTOR" --json
# Only after human review, repeat the exact request with:
# --apply --operation-id <returned-ID>
# --expected-project-hash <returned-hash>
"${ER_COMMAND[@]}" edx history \
  --project-id "$PROJECT_ID" --year "$YEAR" --json
"${ER_COMMAND[@]}" edx export-exit \
  --project-id "$PROJECT_ID" --year "$YEAR" \
  --output "$EXIT_ZIP" --json
```

Inspect JSON `ok`, `canApply`, `issues` and `mappingRequirements`; a zero process exit code alone does not mean validation passed. The `edx dry-run` alias is validation, not the audited `edx import` preview. Optional `--unit-map`, `--currency-map` and `--site-map` decisions must be identical at preview and apply. File overwrite requires explicit approval. MCP's preview tool does not accept input/output file paths or apply, so this file exchange uses the ordinary governed CLI rather than MCP alone.

Import timestamps are fixed to the audited proposal, so an unchanged approved request can be applied after a delay. Changed source bytes, mappings or project state still require a new preview; never invent hashes or bypass approval. Human review remains mandatory. Successful local replay tests are not

proof of an end-to-end SAP integration or acceptance of every deployment's signed Mac broker; validate those separately before operational rollout.

10. Acceptance checklist

- Exact company/site/year and source extraction cutoff agreed.
- Current template retained; all required tables, headers and manifest values present.
- Original IDs, units, currencies, dates and documents preserved and reconciled.
- Explicit record states; no unreviewed overlapping periods, revisions or reversal totals.
- Every file covered by SHA-256; archive within limits.
- Validation issues resolved and actual dry-run destination values reviewed.
- Import result, evidence, totals and history checked; no unsupported readiness claim.
- Exit package privacy reviewed; SAP target mapping and sandbox acceptance documented.

For a failed operation, retain the original ZIP and error/operation ID and ask for assistance. Do not email credentials, keys or unrestricted production data. A technical success indicator is never a substitute for this acceptance review.