CENTRAL & EASTERN EUROPEAN SUSTAINABLE ENERGY NETWORK
CEESEN-BENDER

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Simple ROI Calculator

Quick User Guide

This factsheet explains how to fill in the required fields of the ROI Calculator for building renovations. It provides examples, typical data sources, and practical tips so that even non-experts can use it confidently.

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Key Terms

- ★ **ROI (Return on Investment):** A financial metric showing how much benefit (savings + property value increase) you get compared to renovation cost.
  Example: ROI of 5%/year means you recover 5% of the investment every year.
- ★ **Payback Period:** The number of years it takes for total benefits (savings + value increase) to equal renovation cost.
- ★ **MAB (Multi-Apartment Building):** A residential building with multiple apartments (e.g. block of flats).
- ★ **RES (Renewable Energy Sources):** On-site green energy such as solar panels, biomass boilers, or heat pumps.
- ★ **Conditioned Area:** The part of the building that is heated or cooled, measured in square meters (m^2).

Who is the tool for?

- **Primary users:** project managers, municipal staff, housing associations, building owners, consultants.
- **Wider public:** anyone interested in seeing if renovation pays off.

Tips for Users

- Use **conservative estimates** – too optimistic inputs can give misleading ROI.
- If unsure, rely on **regional averages** or **dummy values** (same before & after).
- Treat this as a **screening tool**, not a substitute for full feasibility or technical-financial analysis.
- This tutorial presents all data in **euros (€)**. You can use your own currency – it will not change the final results, since ROI and payback are ratios, not absolute values.

Input Sections

⚠ **Disclaimer:** Avoid guessing. If you don't know, use conservative or equal values before/after.

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A. Building Information and Energy Profile

- **Building ID:** Free text for identification (name, address or internal code).
- **Conditioned (heated) Area:** Either
  - Average apartment size × number of apartments, OR
  - Total heated area of building: Total building conditioned area available ☑ Yes

  Source: energy audit, architectural drawings, building documentation.

- **Number of Apartments:** Residential units only (exclude commercial premises if separate).
- **Specific Energy Consumption Before Renovation:** kWh/m^2/year.
  Source: energy audit, utility bills, or national building energy database.
- **Specific Energy Consumption After Renovation:** projected value after measures.
  Source: energy audit simulations, project documentation, or benchmarks from similar renovated buildings.
- **RES Production:** renewable electricity/heat generated on-site (e.g. solar PV).
  Source: supplier quotes, PV simulation tools, or past production data if installed.

This section calculates total energy savings for the building.

B. Cost Savings Related to Energy Savings and RES

- **Specific Heating Fuel Cost [€/MWh]:**
  Source: latest utility bills, contracts, or average regional tariffs (gross, incl. taxes and distribution).
  Tip: slightly overestimate – energy prices tend to rise.
- **Specific Electricity Cost [€/MWh]:** Same as above.
- **Operation & Maintenance Costs [€/year]:**
  Examples: annual servicing, filter replacements, chimney cleaning, inspections, small repairs.
  Source: equipment documentation, supplier/maintenance contracts, benchmarks from similar buildings.

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This section calculates yearly cost savings from reduced energy use and RES

C. Renovation Project Costs

You can choose:

1. **Detailed breakdown** (for experts, from tender/project docs):
    a. Project elaboration: audits, documentation, permits
    Source: engineering contract, project budget.
    b. Labor: workers, engineers, supervisors
    Source: contractor offers, tenders.
    c. Materials: insulation, windows, façade, roof
    Source: supplier quotes, construction bills.
    d. RES equipment: solar panels, biomass boilers, heat pumps
    Source: supplier offers, project budget.
    e. Other: scaffolding, waste management, unforeseen costs
    Source: contractor budget, project documentation.
2. **Simplified input:** Enter only the **total renovation cost**:
    Source: project budget, contractor offers, or past projects of similar size.

– Total renovation project costs
☑ Yes

This section calculates total renovation project cost.

D. Contribution to Real Estate Market Value

- **Before Renovation [€/m^2]:** Market value of non-renovated building.
  Source: real estate market reports, municipal tax valuations, or housing agency data.
- **After Renovation [€/m^2]:** Market value of renovated, efficient building.
  Source: real estate listings for renovated buildings, or expert appraisals.
- **Project Life Span [years]:** Expected lifetime of renovation measures.
  Typical ranges:
    - Insulation: 30–40 years
    - Windows: 20–30 years

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- Heating/cooling equipment: 15–20 years
  Source: manufacturer datasheets, construction standards, or energy audit assumptions.

This section estimates potential increase in building value.

Final Results

The tool calculates:

- **ROI [% per year]** = share of the investment recovered annually.
- **Payback Period [years]** = time until savings + value increase cover renovation cost.

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