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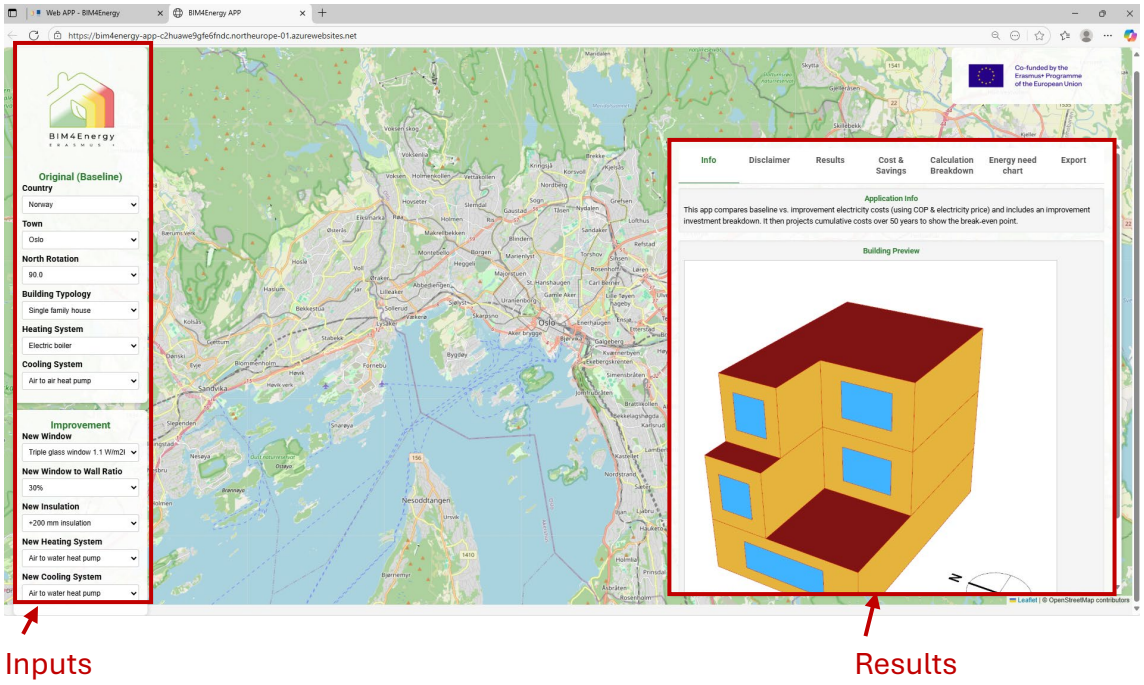
BIM4Energy Project

BIM4Energy web app User Guide

Web APP - BIM4Energy

Interface:

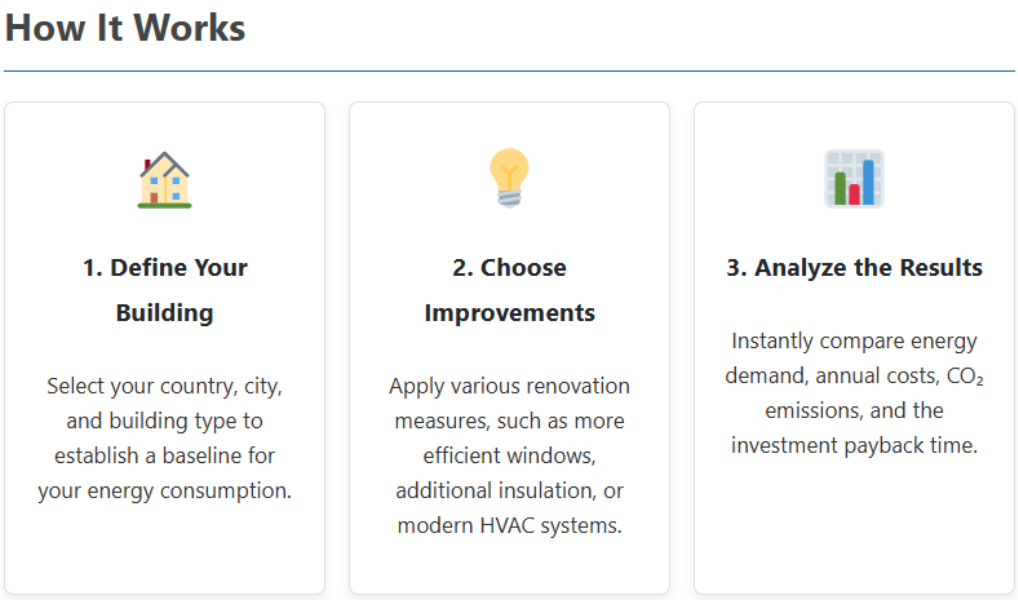


Inputs

Results

1- INTRODUCTION

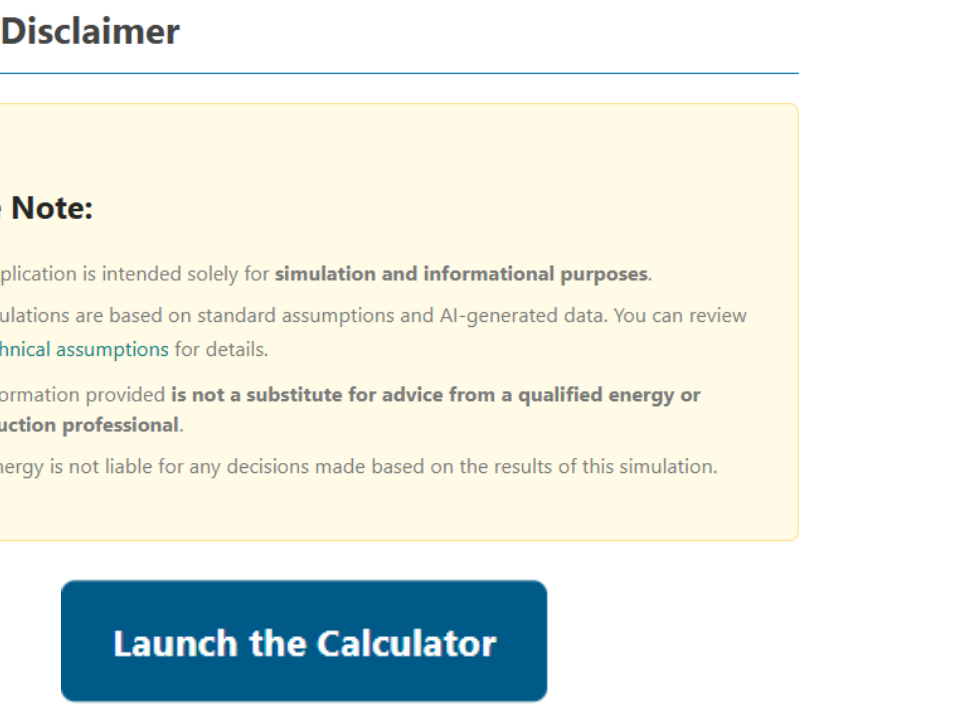
Welcome to the BIM4Energy Calculator! This tool helps simulate the impact of energy efficiency improvements. Compare baseline vs. improved scenarios for energy, cost, and CO_2 savings.



Our Purpose

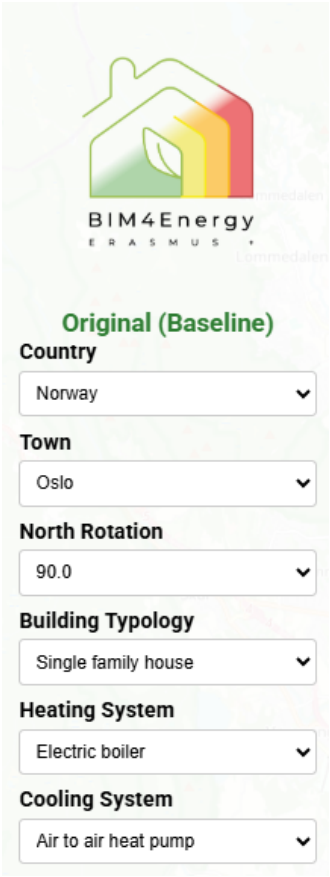
The BIM4Energy Calculator is an initiative to democratize access to information about energy efficiency. Using data generated from advanced simulations with BIM (Building Information Modeling) methodology, our goal is to:

- **Empower** homeowners, managers, and students to make informed decisions about energy renovations.
- **Promote** sustainable construction and retrofitting by clearly showing the economic and environmental benefits.
- **Demonstrate** the power of BIM simulation to predict and optimize building performance.



2- STEP-BY-STEP GUIDE

Inputs:



Step 1: Select Location

- **Country:** Choose to load regional data.
- **Town/City:** Choose to set local climate and costs. Map updates automatically.

Step 2: Define Baseline Building

- **Typology:** Select building type (e.g., Single-family house). Preview image appears.
- **North Rotation:** Choose building orientation.

  Baseline Results (heating/cooling demand) will appear.

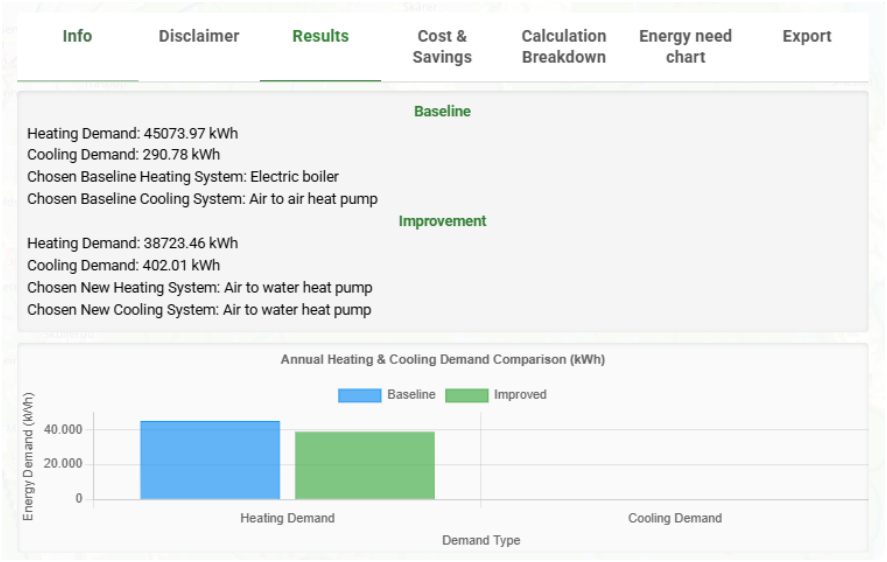
Step 3: Apply Improvements

- **New Windows:** Select efficient window type.
- **Window to Wall Ratio:** Adjust window area percentage.
- **New Insulation:** Choose insulation thickness.
- **New Heating/Cooling System:** Select efficient HVAC systems.

Step 4: Analyze Results

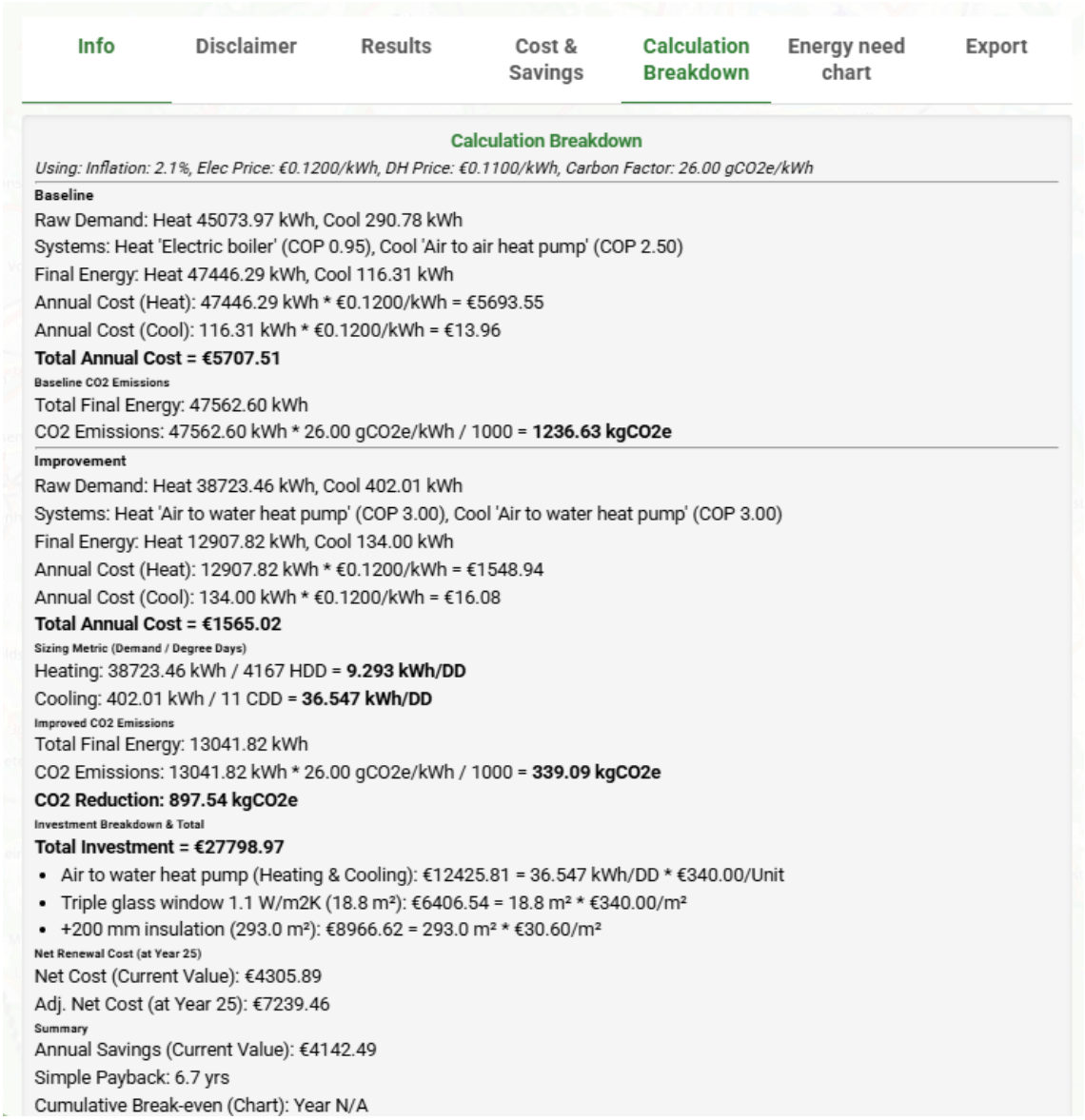
Results update automatically:

- **Demand Comparison:** See kWh reduction.



- **Cost & Savings Analysis:** Shows annual costs, investment, and payback period.

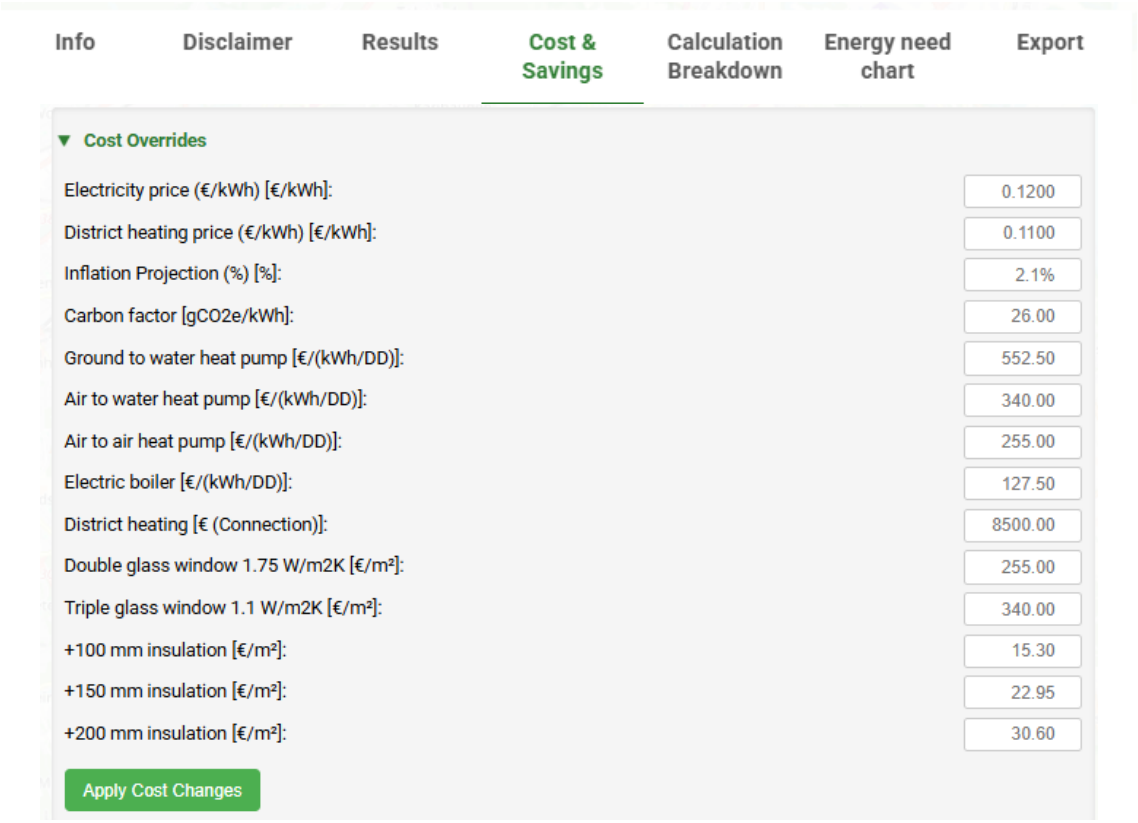
- **CO_2 Emissions:** View annual $kgCO_2e$ reduction.
- **Charts:** Demand Comparison (bar), Cumulative Cost (line, 50yr), Monthly Breakdown (bar).



Energy need chart:

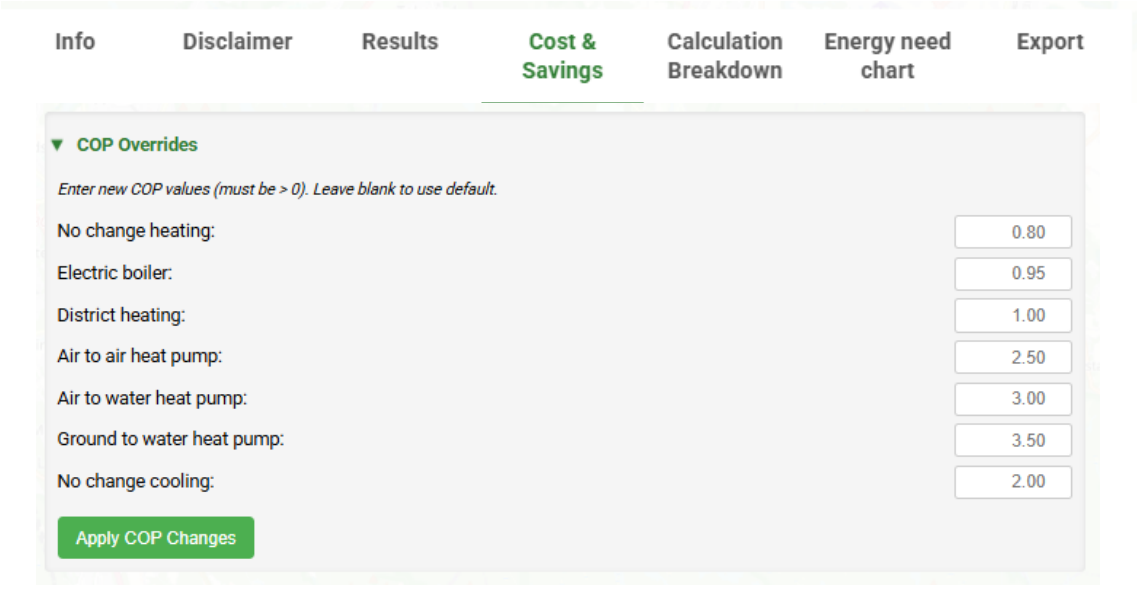
3. Advanced Features

- **Cost Overrides:** Enter custom energy or measure costs (€/kWh, €).



Note: Click "Apply Changes" after entering custom values.

- **COP Overrides:** Adjust system Coefficient of Performance.



Note: Click "Apply Changes" after entering custom values.

4. Exporting Report

Click “Export to PDF” to download a full report.