RENTAL CAL

European Rental Housing Framework for the Profitability
Calculation of Energetic Ret rofitting Investments

Funded by
the European Union

RentalCal Tool – Profitability Calculation Software for the Assessment of Energy Refurbishments of Rental Housing

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RENTCAL

European Rental Housing Framework for the Profitability
Calculation of Energetic Ret rofitting Investments

- A transnational database about important framework conditions

- A profitability assessment methodology and tool

- Knowledge dissemination and stakeholder involvement

RENT
CAL
European Rental Housing Framework for the Profitability
Calculation of Energetic Ret rofitting Investments

A **web based application** for the **profitability analysis** of energy related **retrofits** in **rental housing**

- Provide transparency on the profitability of individual energy efficiency retrofits for different target groups
- Consider given national levels in costs (investments and operational costs) and efficiency improvements
- Focus on rental cash flow modeling with green premium or other energy efficiency related rent increase
- Including subsidized funding, detailed tax/depreciation assessment, user specific investment horizon and user specific assumptions on future dynamics of prices and rents

RentalCal tool: the scope

European Rental Housing Framework for the Profitability Calculation of Energetic Ret rofitting Investments

Usability

Complexity

Robustness

- ## Target group specific use cases
  - Data base assisted quick feasibility check (partly based on building typologies from www.tabula.eu)
  - Detailed manual entry for individual case assessment

- ## The RentalCal tool offers an international comparative perspective
  - Data base on model building energy performance, national tax, rent setting and operating cost bearing regimes for 8 EU-member states included
  - the tool is now offered in seven European languages

European Rental Housing Framework for the Profitability
Calculation of Energetic Ret rofitting Investments

- **Information section**
  - introduction and structure overview
  - video tutorial
- **Input section with**
  - 16 input modules for data entry (location, property, energy consumption, investment costs, financing…)
  - 'assisted mode' for data base assisted quick feasibility check
  - 'freehand mode' for individual case assessment
  - submodules for detailed input of primary energy and CO_2 factors, detailed energy prices and exit yield estimation
- **Output section with**
  - KPIs from investors, tenant and environmental and resource perspective
  - Information on additional non-monetary impacts
  - printable output reports

RentalCal tool: the workflow

RENT CAL
European Rental Housing Framework for the Profitability
Calculation of Energetic Ret rofitting Investments

Input Modules

Property, Investor,
refurbishment, finance, tax
and depreciation, rent and
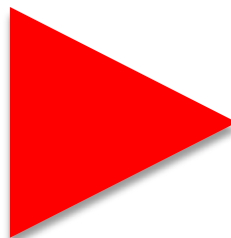operation costs

Database guided
User provided

RENT**CAL**

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Input Modules

Property, Investor,
refurbishment, finance, tax
and depreciation, rent and
operation costs

**Database guided
User provided**

Profitability Analysis

Dynamic calculation using
VoFI (Visualization of
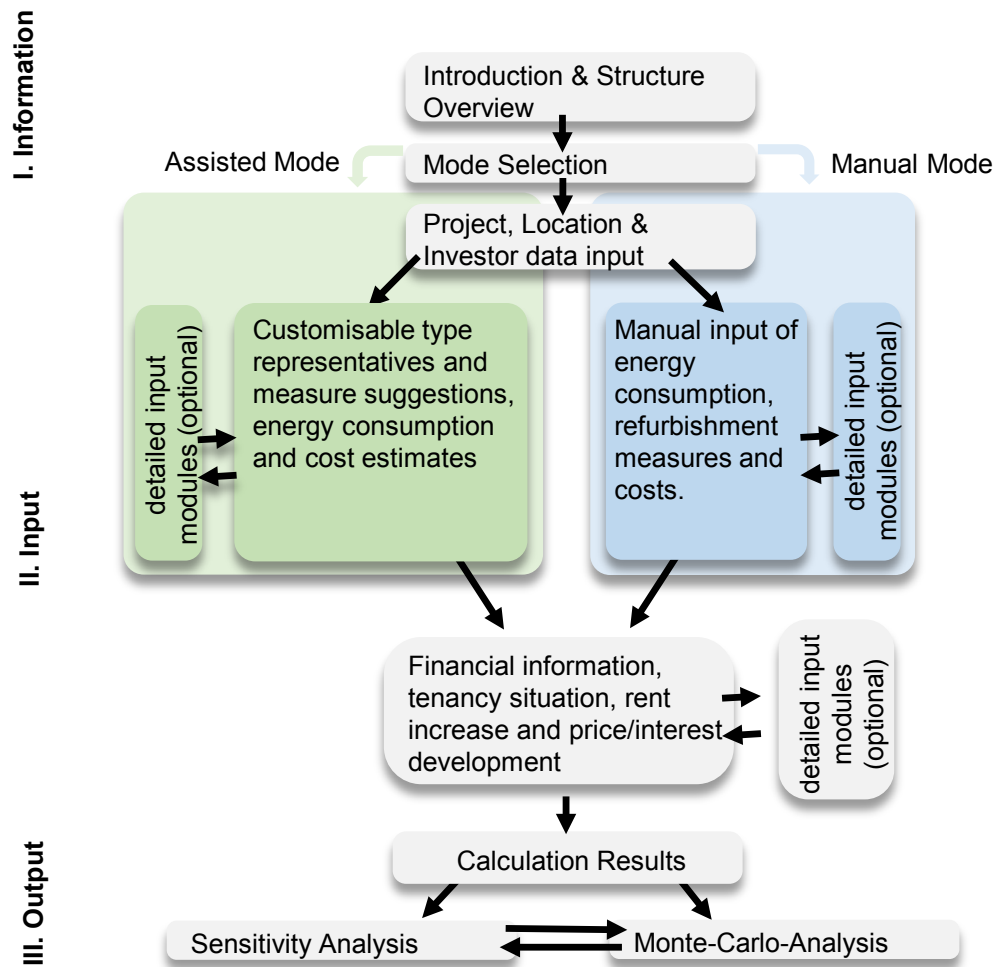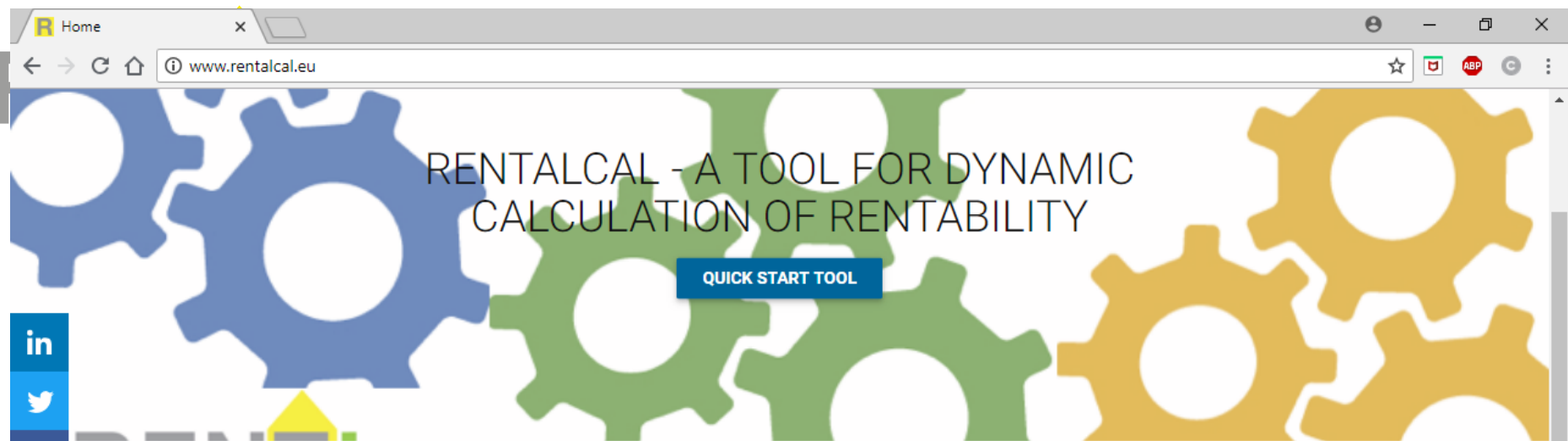Financial Impact)
methodology

**Complex Case
Differentiations**

RentalCal tool: the workflow

European Rental Housing Framework for the Profitability Calculation of Energetic Ret rofitting Investments

Input Modules

Property, Investor, refurbishment, finance, tax and depreciation, rent and operation costs

**Database guided
User provided**
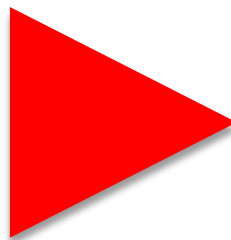
Profitability Analysis

Dynamic calculation using VoFI (Visualization of Financial Impact) methodology

**Complex Case
Differentiations**
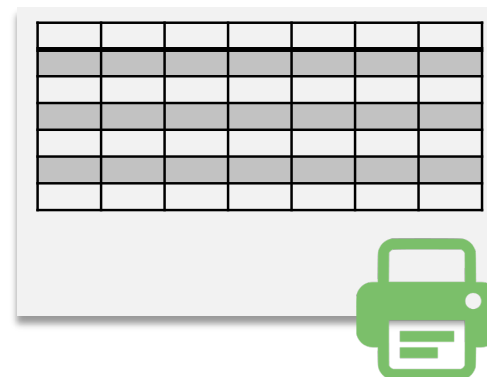
Reporting Modules

Multipe KPIs
Break even assessment
Risk analysis

**Target group specific
output**

RentalCal tool: the workflow

European Rental Housing Framework for the Profitability Calculation of Energetic Retrofitting Investments

I. Information

Introduction & Structure Overview

Assisted Mode — Mode Selection — Manual Mode

Project, Location & Investor data input

II. Input

detailed input modules (optional)

Customisable type representatives and measure suggestions, energy consumption and cost estimates

Manual input of energy consumption, refurbishment measures and costs.

detailed input modules (optional)

Financial information, tenancy situation, rent increase and price/interest development

detailed input modules (optional)

III. Output

Calculation Results

Sensitivity Analysis ⇄ Monte-Carlo-Analysis

RENTALCAL - A TOOL FOR DYNAMIC
CALCULATION OF RENTABILITY

QUICK START TOOL

Welcome to the RentalCal tool -

Rentability Calculation of Energy Efficiency Investments

European perspective

RentalCal provides useful information on the overall status of energy efficiency retrofitting in the EU.

EUROPEAN SECTION

Tool perspective

Direct access to the RentalCal calculation tool. All relevant information is explained in the tool itself.

TOOL PAGE
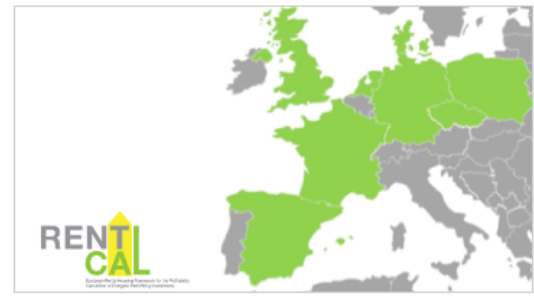
National perspective

Information on housing market conditions in the participating countries and other tool related content.

COUNTRY PAGES

RentalCal English

Investor ○ Property ○ Refurbishment ○ Financing ○ Market ○

Where am I   Help

Information

Terms of Service ›

Contributors ›

Tool structure ›

Video tutorial ›

Input ›

Output ›

RENTCAL

The RentalCal calculation software was designed for landlords, managers of housing companies/cooperatives, property managers and energy consultants to assess the profitability of energy efficiency refurbishments in the private rental sector.

Profitability Calculation Software for the Assessment of Energy Refurbishments of Rental Housing

Start Calculation

Nicht sicher | webtool.rentalcal.eu/location/

Language selection

Investor ✓ — Property ○ — Refurbishment ○ — Financing ○ — Market ○

| Where am I | Help |

Information ›

Input ⌄

Project Data ›

Location Data ›

Investor Data ›

Property Description ›

Energy Consumption ›

Energy Costs ›

Cost Summary ›

Maintenance Costs ›

Depreciation ›

Energy Consumption ›

Energy Costs ›

Financial Information ›

Price development ›

Tenancy Situation ›

Rent Increase Method ›

Exit Yield ›

Location

This icon indicates the selection of one option from a dropdown list.

This icon indicates default suggestion values which might be overwritten by the user.

This icon indicates the selection of several options from a given set.

This icon indicates the selection of one option from a set.

Location of the Property:　　Czech Republic

Area Metric:　　● Square Meters　　○ Square Feet

Calculation Currency:　　Czech Crowns

« Back　　　Restore default values ⚡　　　Continue »

🏳 Language selection

Investor ✓ Property ✓ Refurbishment ✓ Financing ○ Market ○

| Where am I | Help |

Non-Professional Private Landlord:

A single person or a small group (e.g. a married couple) who let one or few apartments but do not derive a large fraction of their income from rental income. Investors in this group hold real estate as a "pension" provision or due to „proprietor's pride". Most of the time, they have a direct management without creating a legal person (for the management of the rental flat) and have a close relationship to their tenants. They have no particular knowledge of the real estate sector and have the lowest level of organisation. They do not have experts (e.g. engineers or accountants) within their „operation" but long (to infinite) time horizons, high equity ratios and they are risk averse.

Professional Private Landlord:

A single person or a small group (e.g. a married couple) who let several apartments and derive a significant fraction of their income from rental income. They let apartments for a living and as an investment. They need less external knowledge, but are merely more organised than the non-professional private landlord. Oftentimes, they create a legal person to manage their assets and have also long time horizons but smaller equity ratios and are less risk averse.

Small Housing Cooperative:

A small real estate company, possessing only one or few buildings, that is owned by its members who are simultaneously

Investor Characteristics:

Investor Type:	🗒	Non-Professional Private Landlord ▾	❓
Legal Form:	🗒	Other (or no) legal form ▾	❓
Marginal Tax Rate:	Ⅹ	35	%	❓
Calculation Period for Profitability Analysis:	Ⅹ	25	years	❓

« Back | Restore default values ⚡ | Continue »

Nicht sicher | webtool.rentalcal.eu/fininfo/

🏳 Language selection

Investor ✓   Property ✓   Refurbishment ✓   Financing ✓   Market ○

Where am I	Help

Information →

Input ⌄

   Project Data →

   Location Data →

   Investor Data →

   Property Description →

   Energy Consumption →

   Energy Costs →

   Cost Summary →

   Maintenance Costs →

   Depreciation →

   Energy Consumption →

   Energy Costs →

   Financial Information →

   Price development →

   Tenancy Situation →

   Rent Increase Method →

   Exit Yield →

Financial Information

Energy-related gross investment costs:	[X]	121000,00	CZK
Debt Portion:	[X]	65,00	% ❓
Investor's own Equity amount for the energy investment:	[X]	42350,00	CZK ❓
Required debt amount for the energy investment:	[X]	78650,00	CZK
Expected volume of subsidised loans:	[X]		CZK ❓
Interest rate of subsidised loans:	[X]		%
Term of the subsidised loans:	[X]		years
Initial payback pause of the subsidised loans:	[X]		years
Repayment bonus (if any):	[X]		CZK
Remaining Financing volume (market loan):	[X]	78650,00	CZK
Expected amount of eligible grants:	[X]		CZK ❓
Repayment method market loan (structure of principal/ interest ratio over time):	[X]	Please select an option ▾	❓
Individual interest rate on market loan:	[X]		% ❓
Current borrowing rate fixed or variable:	[X]	○ fixed ○ variable	❓
Current Savings Interest Rate:	[X]		% ❓

Language selection

Investor ✓ Property ✓ Refurbishment ✓ Financing ✓ Market ✓

Where am I   Help

The Return on Equity depicts the central KPI of the whole calculation methodology, as it states which interest is paid to the investor for his investment's own equity. It is therefore more investor-oriented than, for instance, the Return on Investment. One additional calculation will additionally reveal the Return on Equity under the assumption that the property is sold at the end of the consideration period and a Green Exit Sales Premium is realised and the final equity value is therefore further increased.

In addition to the VoFI method, the net present value method is often used to assess profitability. If the profitability of an investment project is calculated on the basis of the same assumptions, the following correlation results between the two indicators Return on Equity (RoE) and Net Present Value (NPV): A RoE of 5% means that the investor achieves a NPV of zero with his investment (assuming the same costs and earnings and the same financing) if the discount rate used within the NPV method is exactly 5%.

Key Performance Indicators (KPIs) – Investor Perspective

	Total:		Per m^2:	
Additional Net Rental Income (annual, first year):	54992.00	CZK	423.02	CZK
Return on Equity (annual, excluding Green Value):	2.57	%		
Return on Equity (annual, including Green Value):	5.56	%		
Payback Period (excluding Green Value):	39	years		
Payback Period (including Green Value):	18	years		
Additional Exit Value (Green Value):	112797.20	CZK	867.67	CZK
Expected Reduction in Vacancy Rate:	5	%		
DSCR (Debt Service Coverage Ratio):	118.25	%		

Change in non-reimbursable Inspection

🏳 Language selection

RentalCal English

Investor ✓ | Property ✓ | Refurbishment ✓ | Financing ✓ | Market ✓

| Where am I | Help |

Additional non-monetary Impacts of the Refurbishment

❓

- Positive impact on local air quality

- Positive impact on indoor air quality

- Positive impact on reliability of HVAC systems

- Positive impact on noise protection (from outside)

- Positive impact on thermal comfort in winter

- Positive impact on thermal comfort in summer

- Positive impact on mould prevention

- Positive impact on inhabitants' health

- Possibly reduced risk of rent reduction

- Positive impact on socio-economic status of the building occupants and prevention of area deprivation

- Positive impact on environment as a result of reduced residential energy usage

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Continue »

Contributors

![RENTALCAL logo]

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www.rentalcal.eu

Thank you very much for your attention!

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