



DG DIGIT

Unit B1

User Manual

Building Stock Observatory (BSO)

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The Document Author is authorized to make the following types of changes to the document without requiring that the document be re-approved:

- Editorial, formatting, and spelling
- Clarifications

To request a change to this document, contact the Document Author or Owner. Changes to this document are summarized in the following table in reverse chronological order (latest version first).

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| | | | |

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1 PURPOSE

This document serves as a user guide for the public users of the Building Stock Observatory (BSO). It guides the users through the steps to easily navigate the new BSO.

2 SCOPE

The broad aim of the EU Building Stock Observatory is to provide a web-based data platform integrated with a sophisticated Power BI Solution showing a comprehensive snapshot of buildings' energy performance across Europe.

The BSO platform is a part of the DG ENER website and is available at this URL:

<https://building-stock-observatory.energy.ec.europa.eu/>

The structure of the website is made up of a home page and two data tools: **Database**, and **Factsheets**.

- The **Database** containing the whole set of collected indicators.
- **Factsheets** of countries addresses the most relevant issues related to the implementation of the EU legislation dealing with buildings.

In the next sections, the navigation of each data tool will be explained in detail.

3 DATABASE

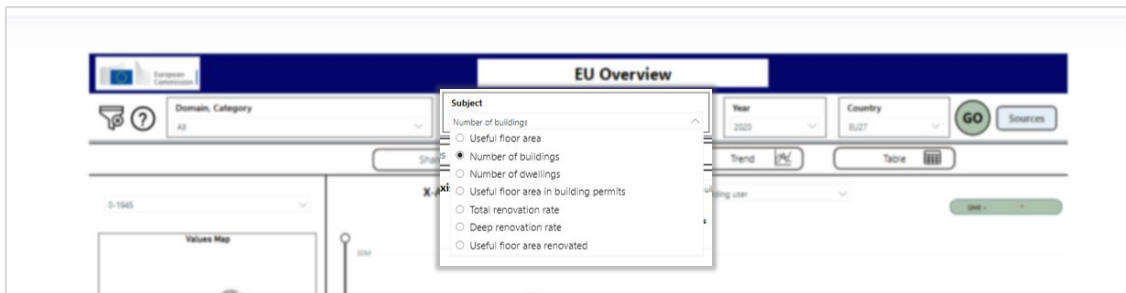


The Database provides access to the user to analytical data in five domains: **Building Stock, Energy and environmental performance, Financial performance, Social performance and Reference buildings.**

Domain, Category

To access the data, the user must select a Subject. The user can narrow down the available Subjects by selecting a domain and category of interest from the menu. In the following the user must press the **GO** button.

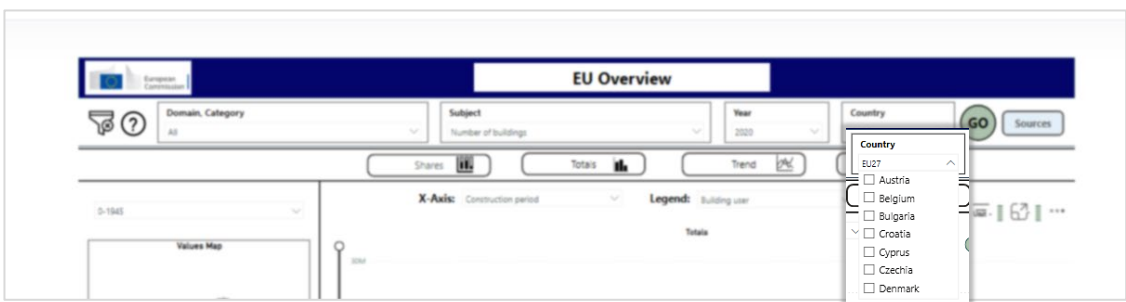
When the user makes a selection, the options in the next dropdowns are automatically filtered to show only the granularity options which are relevant to the previous selection.



Subject

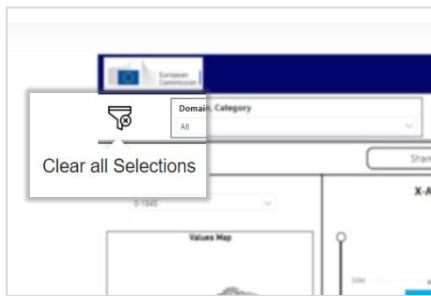


Year



Country

The report can be viewed in Fullscreen mode by clicking the corresponding button.



Clearing selections

While the report is initially filtered based on the user's menu selections, the user can redirect to any preference using the slicers/buttons provided.

To avoid confusion when changing the domain, category or subject of interest, the selected options should be deleted first using the **'Clear all selections'** button provided at the top left corner of the page.

Data Sources

The report also provides the user with the ability to find the sources for each value provided, by clicking the **'Source'** button at the top right corner of the page.

The page can be scrolled to the right to find more information such as comments and publication date.



'Source' button

| Subject | Country | URL1 | URL2 |
|---------------------|-------------|---|---|
| Number of buildings | Austria | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Belgium | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Bulgaria | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Croatia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Cyprus | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Czechia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Denmark | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Estonia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | EU27 | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Finland | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | France | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Germany | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Greece | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Hungary | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Ireland | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Italy | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Latvia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Lithuania | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Luxembourg | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Malta | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Netherlands | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Poland | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Portugal | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Romania | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Slovakia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Slovenia | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Spain | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |
| Number of buildings | Sweden | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis | https://github.com/MODERATE-Project/building-stock-analysis/tree/main/T3-2-static-analysis |

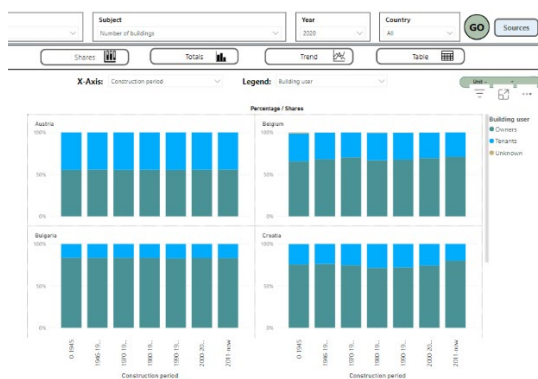
List of sources

Visual display

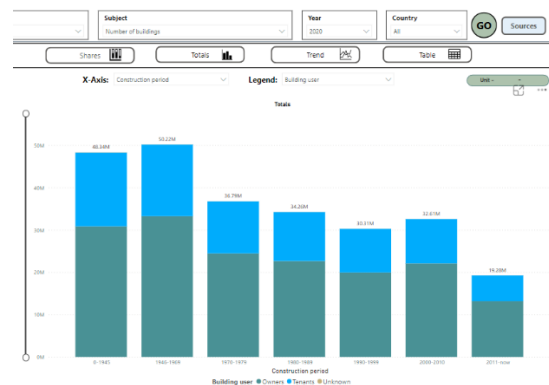
The information in the main visual can be displayed in the following chart types:

- Shares (*stacked columns*)
- Totals (*stacked columns, clustered columns*)
- Trend (*line chart*)
- Table (*numerical data*)

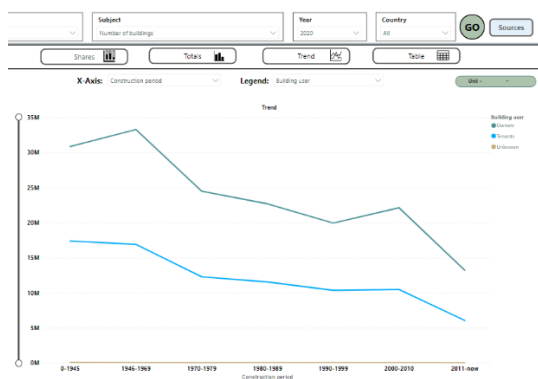
In case there is no data available for the selection, a corresponding text will be displayed. It is not possible to display all kinds of data in every chart type. Hence, some chart types are not available for certain subjects.



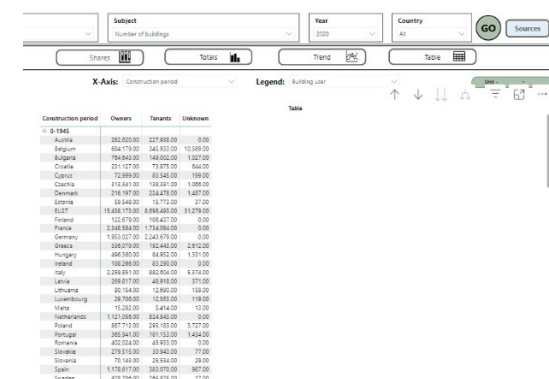
Shares



Totals

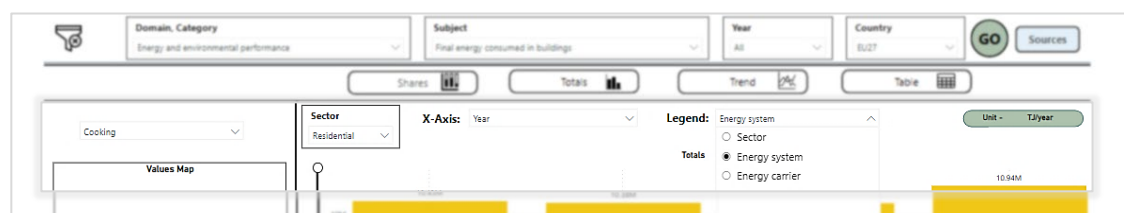


Trend



Table

Apart from the type of chart, the users can navigate through the various possible combinations of the available granularities in a subject by changing the 'X-axis' and 'Legend' parameters. Note: For some subjects, there may be only one granularity available each for X-axis and Legend.

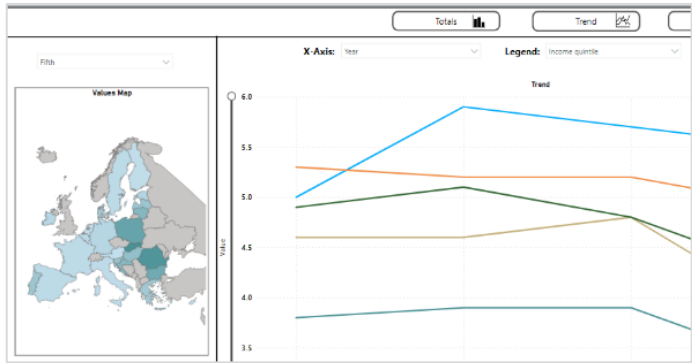


X-axis, Legend and Unit

The Unit belonging to the data in the selected visualisation is displayed in the green tab.

A complementary colourmap is provided to illustrate the variation in data amongst the countries.

The dropdown menu above the map allows the user to select the available items. The



items refer to the previously selected granularity in the **'Legend'** dropdown (**'income quintile' in the image**). For the selected item, the map will show the values for the countries, which will enable the users to see the differences via the colour gradient.

Values map



The specific information is displayed in a tooltip when hovering on the country of preference.

Hovering tooltip

Exporting data

The user can also export the data shown in the visuals in either *xlsx* or *csv* format by selecting **'More options'** from the three dots (...) and then **'Export data'**.



More options



Export data

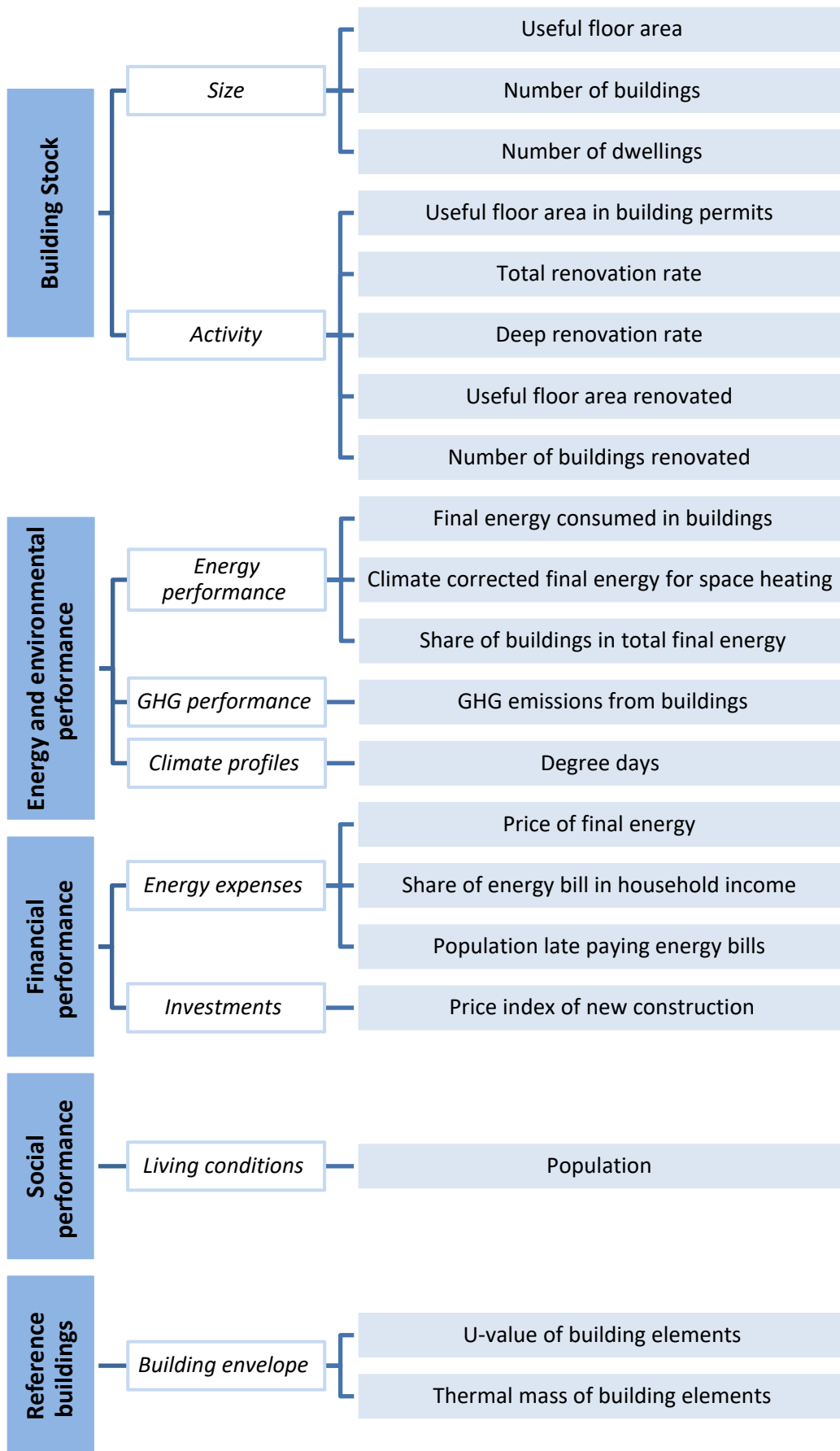
This feature enables the user to download the data for further data analysis.

4 DATABASE SITEMAP

The provided sitemap outlines a structure for implementing the Building Stock Observatory (BSO), which appears to be a tool or a framework to analyze various aspects of building stock, including size, activity, energy and environmental performance, financial performance, social performance, and reference buildings. Here is a short brief of each section in the sitemap:

1. **Building Stock:** This section focuses on the physical aspects of the buildings.
 - **Size:** Metrics related to the physical dimensions of the buildings, such as total useful floor area, the total number of buildings, and dwellings.
 - **Activity:** Data on the activity in the building sector, like the floor area included in building permits, rates of renovation, and the number of buildings renovated.
2. **Energy and Environmental Performance:** This assesses how buildings perform in terms of energy consumption and environmental impact.
 - **Energy Performance:** Measures the energy usage in buildings and adjusts for climate factors in heating.
 - **GHG Performance:** Evaluates the greenhouse gas emissions attributable to buildings.
 - **Climate Profiles:** Takes into account the number of degree days to relate energy consumption to weather conditions.
3. **Financial Performance:** This looks at the economic aspects of building energy use and construction.
 - **Energy Expenses:** Costs associated with energy consumption, including the price of energy and its impact on household income.
 - **Investments:** Monitors the financial side of the building industry, like the price index of new construction.
4. **Social Performance:** Pertains to the societal aspects of the building stock.
 - **Living Conditions:** May include various metrics like population levels that could relate to the demand for buildings.
5. **Reference Buildings:** Establishes benchmarks for comparison.
 - **Building Envelope:** Focuses on the insulation and thermal properties of building materials, such as U-values and thermal mass.

Each of these sections would contain detailed data that could be used for analysis, policymaking, and to track progress over time in the efficiency and sustainability of the building stock. The sitemap serves as a guide for what data to collect and monitor for a comprehensive understanding of building stock within a particular area or jurisdiction. In the below Sitemap chart, you will find the whole representation:



5 FACTSHEETS

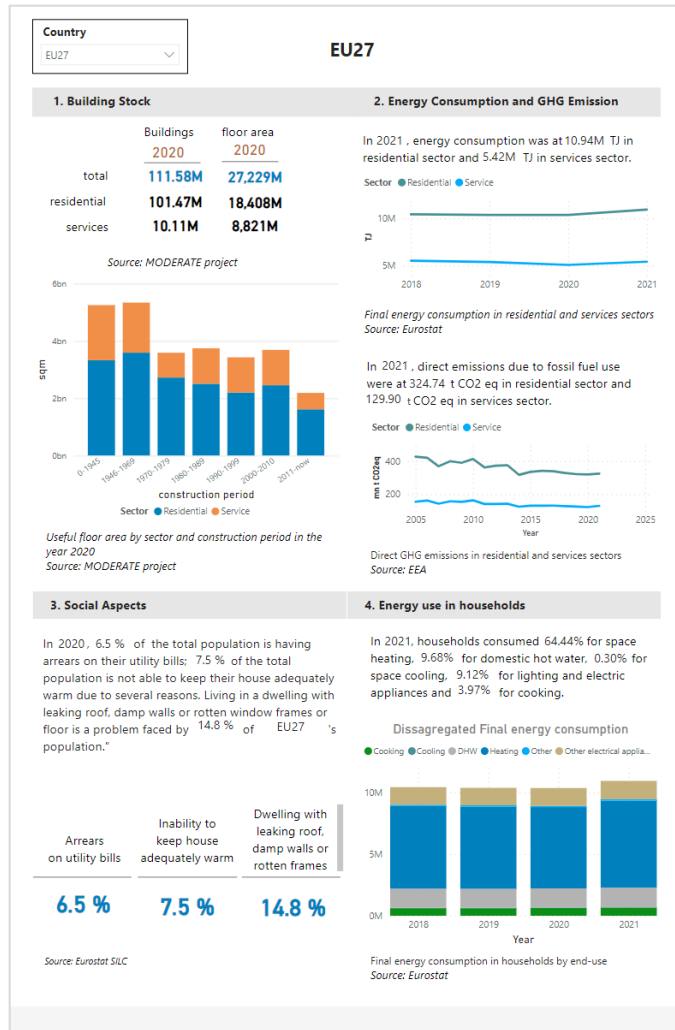
The Factsheets reports provide a brief statistical overview of the following topics:

1. **Building stock**
2. **Energy consumption and GHG emission**
3. **Social aspects**
4. **Energy use in households**

Factsheets are available for individual countries and for the group 'EU27'.

The factsheets include bar charts, trends, and info graphics to provide graphical overview of the data.

Sources are mentioned at the bottom of each topic.



Factsheets default view



Selecting a country

The report opens to the 'EU27' tab, which displays information on the EU27 group. Users can select individual countries from the dropdown menu 'Country'.

For an in-depth analysis of all the domains for a specific country and year, users can navigate through the 'Database'.