

# FINLAND

## 1. CONTEXT OF THE BUILT ENVIRONMENT

### Urban population

| Total population        | Functional Urban Area population* | Share of urban population | Average urban growth |
|-------------------------|-----------------------------------|---------------------------|----------------------|
| 5.468<br>million (2020) | 2.528<br>million (2020)           | 46%<br>(2020)             | 2.8%<br>(2015-2020)  |

\*Data source: European Commission (2023), FUA and eFUA methodology: OECD/European Commission (2020)<sup>1</sup>

### Building data

|                 | Building stock                             | Built before 1980 | Annual construction                       | Annual construction rate |
|-----------------|--|-------------------|---|--------------------------|
| Residential     | 2,816.2<br>thousand dwellings<br>(2022)    | 47%               | 41.6<br>thousand dwellings<br>(2022)      | 1.5%<br>(2022)           |
| Non-residential | 195.80<br>million m <sup>2</sup><br>(2022) |                   | 4.672<br>million m <sup>2</sup><br>(2022) | 2.4%<br>(2022)           |

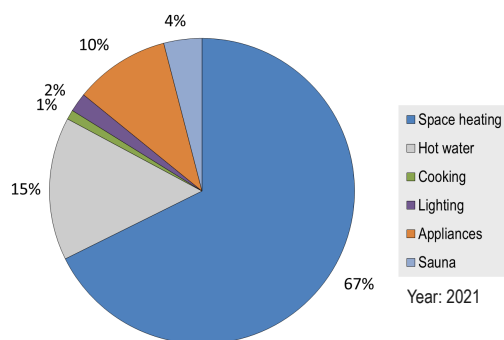
### Energy & emissions data

| Residential buildings**                 | 1990  | 2021  | +/- rate |
|---|-------|-------|----------|
| Final energy consumption (PJ/year)      | 223.3 | 223.1 | -0.1%    |
|   | 1990  | 2021  | +/- rate |
| GHG emissions (MtCO <sub>2</sub> /year) | 7     | 1     | -88%     |

\*\*Data source: IEA Countries & Regions<sup>2</sup>

| Non-residential buildings               |     |
|---|-----|
| Final energy consumption (PJ/year)      | N/A |
| GHG emissions (MtCO <sub>2</sub> /year) | N/A |

#### Energy consumption by end-use (Residential)



#### Heating degree days\*\*\*

3,438.9

Degree (°C) Days (2020)

Reference degree day: 16 degree (°C)

#### Cooling degree days\*\*\*

5.9

Degree (°C) Days (2020)

Reference degree day: 21 degree (°C)

\*\*\*Data source: IEA Weather, Climate and Energy Tracker<sup>3</sup>

<sup>1</sup> <http://data.europa.eu/89h/2ff68a52-5b5b-4a22-8f40-c41da8332cfe>, <https://doi.org/10.1787/d58cb34d-en>

<sup>2</sup> <https://www.iea.org/countries>

<sup>3</sup> <https://www.iea.org/data-and-statistics/data-tools/weather-climate-and-energy-tracker>

## 2. GOVERNANCE AND CAPACITY BUILDING

### Who does what

#### Ministries/Agencies responsible for BEE (building energy efficiency) and related policies

|                                  |                              |   |                                   |          |
|----------------------------------|------------------------------|---|-----------------------------------|----------|
| <b>A</b> Ministry of Environment | <b>B</b> Ministry of Finance | <b>C</b> Ministry of the Economy and Employment | <b>D</b> Ministry of the Interior | <b>E</b> |
|----------------------------------|------------------------------|---|-----------------------------------|----------|

#### Ministries/Agencies responsible for each policy area

|  |  |  |  |  |
|--|--|--|--|--|
| Building code                                | Governmental buildings                       | Housing policy in general                    | Financial incentives for BEE                 | Behaviour change for BEE                     |
| <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> |
| BEE standard                                 | Act/law for BEE regulation                   | Whole life carbon                            | Energy policy in general                     | NDC  |
| <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> | <b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> |

#### Local governments' authority to customise BEE standards<sup>4</sup>

|          |  |
|----------|--|
| —        | Local governments can customise national standards.  |
| —        | Local governments cannot adjust national standards, but the standards differ across regions depending on the local climate.                          |
| <b>✓</b> | <b>Local governments cannot adjust national standards. All building codes, standards or requirements are uniform across the entire country.</b>      |
| —        | Neighbourhood level approach/planning  |
| —        | The national government is tracking progress on decarbonisation efforts at the local level   |
| <b>✓</b> | <b>More ambitious policy instrument by local governments</b><br>The City of Helsinki has already set CO2 limit values for the construction projects. |

### Capacity building

#### Government funding programmes to train/enhance skills for SMEs

|   |   |  |   |
|---|---|--|---|
| Designing for ZEB                               | — | Insulation                                 | — |
| Calculation for energy performance of buildings | — | Installation of energy efficient equipment | — |
| Calculation for life cycle CO2 of buildings     | — | Other                                      | — |

**Actions undertaken by the national government to support local governments for BEE policy implementation<sup>5</sup>**

|  |            |
|--|------------|
| Co-ordinating regional networks for knowledge exchange and support                   | ✓          |
| Providing funding for training   | -          |
| Distributing toolkits and guidelines   | Priority ✓ |
| Developing online platforms to share best practices                                  | -          |
| Hosting annual conferences focused on BEE policy implementation                      | Priority ✓ |
| Offering grants to hire consultants  | -          |
| Collaborating with research institutes offering specialised courses on BEE practices | -          |
| Creating incentive programmes to reward local governments                            | -          |
| Supporting the Implementation of local regulations                                   | -          |
| Establishing mentorship programmes   | -          |
| Other  | -          |

### 3. GOALS AND POLICY FOCUS

**Policy areas covered in the goals and existing commitments**

|                  | Zero emission for new buildings | Zero emission for existing buildings | Renewable energy for new buildings | Renewable energy for existing buildings | Whole-life cycle carbon reduction |
|------------------|---------------------------------|--------------------------------------|------------------------------------|---|-----------------------------------|
| NDC              | -                               | -                                    | -                                  | -                                       | -                                 |
| LT-LEDS          | -                               | -                                    | -                                  | -                                       | -                                 |
| Ministerial plan | ✓                               | ✓                                    | ✓                                  | ✓                                       | -                                 |

**Quantitative targets included in long-term goals**

|  |  |
|--|--|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Fossil fuel-free buildings                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  District heating/cooling                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div> |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Insulation                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>                 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Heat pumps                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>               |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Rooftop PVs                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>                | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Solar heating of water                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>   |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Other renewable energy                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>     | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">  Other                 </div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>                    |

## Policy focus for decarbonising buildings (Top 3)

### Current focus

|   |                                  |
|---|----------------------------------|
| Passive design to reduce heating demand | <input type="radio"/>            |
| Energy efficiency on heating            | <input checked="" type="radio"/> |
| Passive design to reduce cooling demand | <input type="radio"/>            |
| Energy efficiency on cooling            | <input type="radio"/>            |
| Switching energy to sustainable energy  | <input type="radio"/>            |
| Renewable energy                        | <input checked="" type="radio"/> |
| Embodied carbon                         | <input checked="" type="radio"/> |
| Circularity of building materials       | <input type="radio"/>            |



### Future priorities

|   |                                  |
|---|----------------------------------|
| Passive design to reduce heating demand | <input type="radio"/>            |
| Energy efficiency on heating            | <input type="radio"/>            |
| Passive design to reduce cooling demand | <input type="radio"/>            |
| Energy efficiency on cooling            | <input checked="" type="radio"/> |
| Switching energy to sustainable energy  | <input type="radio"/>            |
| Renewable energy                        | <input type="radio"/>            |
| Embodied carbon                         | <input checked="" type="radio"/> |
| Circularity of building materials       | <input checked="" type="radio"/> |

## Energy poverty

Strategies to reduce poverty and inequality via decarbonising buildings

|   |   |
|---|---|
| Stronger financial support for decarbonising public housing for low-income people | <input type="checkbox"/>  |
| Financial support to buy zero-energy/emission homes                               | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Financial support to renovate their homes to zero-energy/emission                 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Allowing partial retrofits to ease financial burden on upfront cost               | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Provide energy efficient appliances (e.g. LED)                                    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Energy bill coupon  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Energy coach/consultation   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| Other   | <input type="checkbox"/>  |

Note: Policies targeting specific households Low-income Elderly Households with more than 3 children Other

# 4. DEVELOPMENT OF POLICY INSTRUMENTS

## Standards and regulations for decarbonising buildings

|                |                |                                  |
|----------------|----------------|----------------------------------|
| Building codes | National level | <input checked="" type="radio"/> |
|                | State level    | <input type="radio"/>            |
|                | Local level    | <input type="radio"/>            |

### Type of buildings covered by the mandatory energy efficiency code

|                           |   |   |
|---------------------------|---|---|
| Residential buildings     |   |   |
| New                       | <input checked="" type="checkbox"/> All | <input type="checkbox"/> Only large units |
| Renovated                 | <input checked="" type="checkbox"/> All | <input type="checkbox"/> Only large units |
| Non-residential buildings |   |   |
| New                       | <input checked="" type="checkbox"/> All | <input type="checkbox"/> Only large units |
| Renovated                 | <input checked="" type="checkbox"/> All | <input type="checkbox"/> Only large units |

### Elements of building codes (new buildings)

|  |                                     |
|--|-------------------------------------|
| Insulation/heat transmission coefficient | <input checked="" type="checkbox"/> |
| Primary energy consumption               | <input checked="" type="checkbox"/> |
| Primary fossil-fuel energy consumption   | <input type="checkbox"/>            |
| Energy efficiency of equipment           | <input checked="" type="checkbox"/> |
| Operational carbon reduction             | <input checked="" type="checkbox"/> |
| Whole life cycle carbon                  | <input type="checkbox"/>            |
| Comprehensive green building assessment  | <input type="checkbox"/>            |
| Other                                    | <input type="checkbox"/>            |

**Stricter standards for public buildings than private buildings**

For new construction For renovation

|                                      | Public buildings | Public housing |
|--------------------------------------|------------------|----------------|
| Energy efficiency                    | – –              | – –            |
| Zero energy/emission                 | – –              | – –            |
| Renewable energy                     | – –              | – –            |
| Embodied carbon/life cycle           | – –              | – –            |
| Locally sourced & recycled materials | – –              | – –            |

**Certificates/labeling programme for built environment**

**Types of certificates/programme**

|   |                                     |
|---|-------------------------------------|
| Energy Performance Certificate (EPC)          | <input checked="" type="checkbox"/> |
| Energy labelling on passive house             | <input type="checkbox"/>            |
| Energy labelling on annual energy consumption | <input type="checkbox"/>            |
| Comprehensive built environment certification | <input type="checkbox"/>            |
| Labeling for whole life carbon emissions      | <input type="checkbox"/>            |

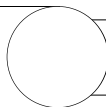
**Target for Mandatory EPC**

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| New buildings (residential)       | <input checked="" type="checkbox"/> |
| New buildings (non-residential)   | <input checked="" type="checkbox"/> |
| Existing buildings for renovation | <input checked="" type="checkbox"/> |
| Existing buildings for sales/rent | <input checked="" type="checkbox"/> |

**Standardised calculation methods for embodied carbon/LCA**


|   |                                     |  |   |
|---|-------------------------------------|--|---|
| Database of CFP/EPD                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> Governmental | <input type="checkbox"/> Non-governmental   |
| Grant for using the following materials     | <input type="checkbox"/>            | <input type="checkbox"/> Low-carbon              | <input type="checkbox"/> Bio-based <input type="checkbox"/> Reused                                  |
| Policy tools for reusing building materials | <input type="checkbox"/>            |  |   |
| Mandatory declaration                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> Public       | <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Non-residential            |
| Limit value on CO2 emissions                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> Public       | <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Non-residential |

Minimum energy performance standards (MEPS) regulation for existing buildings



|   |   |   |
|---|---|---|
| <input type="checkbox"/> All buildings      | <input type="checkbox"/> Residential (rent) | <input type="checkbox"/> Residential (sale) |
| <input type="checkbox"/> Office (rent/sale) | <input type="checkbox"/> Public buildings   | <input type="checkbox"/> Other              |

## Climate resilience

 **Extreme heat adaptation measures implemented in the building sector**

|  |                                     |                                      |   |
|--|-------------------------------------|--------------------------------------|---|
| Strategic orientation of main building facades | <input type="checkbox"/>            | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Light coloured and reflective materials        | <input type="checkbox"/>            | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Green roof                                     | <input type="checkbox"/>            | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Green facades                                  | <input type="checkbox"/>            | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Other  | <input checked="" type="checkbox"/> |                                      |   |

 **Floods/storms adaptation measures implemented in the building sector**

|  |                          |                                      |   |
|--|--------------------------|--------------------------------------|---|
| Lowest liveable floor above ground level | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Roof drainage system                     | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Hip-roof                                 | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Hurricane straps                         | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Impact-resistant glass                   | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Backup generators                        | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |
| Microgrids                               | <input type="checkbox"/> | <input type="checkbox"/> Regulations | <input type="checkbox"/> Financial incentives |

**Publicly available geographic database with climate risk information**

|            |                                     |
|------------|-------------------------------------|
| Flood risk | <input checked="" type="checkbox"/> |
| Heat wave  | <input type="checkbox"/>            |
| Storm      | <input type="checkbox"/>            |
| Wild fire  | <input type="checkbox"/>            |
| Other      | <input type="checkbox"/>            |

**Building certificate system on climate resilience**

|                          |                          |
|--------------------------|--------------------------|
| Resilience to flood risk | <input type="checkbox"/> |
| Resilience to heat       | <input type="checkbox"/> |
| Other                    | <input type="checkbox"/> |

This survey is designed for national governments.