

# JAPAN

## 1. CONTEXT OF THE BUILT ENVIRONMENT

### Urban population

Total population	Functional Urban Area population*	Share of urban population	Average urban growth
124 million (2020)	106 million (2020)	86% (2020)	-1% (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	53,616 thousand dwellings (2018)	24.6%	860 thousand dwellings (2022)	2%
Non-residential	1,786 million m <sup>2</sup> (2018)		25.3 million m <sup>2</sup> (2022)	N/A

### Energy & emissions data

Residential buildings**	1990	2021	+/- rate	Non-residential buildings	2021
Final energy consumption (PJ/year)	1,575	1,722	9.3%	Final energy consumption (PJ/year)	2,053
	1990	2020	+/- rate		2021
GHG emissions (MtCO <sub>2</sub> /year)	57.1	51.2	-10.3%	GHG emissions (MtCO <sub>2</sub> /year)	190

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

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

N/A

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

1,398

Degree (°C) Days (2020)

Reference degree day: 16 degree (°C)

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

475.6

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 Land, Infrastructure, Transport and Tourism	<b>B</b> Ministry of Economy, Trade and Industry	<b>C</b> Ministry of the Environment	<b>D</b>	<b>E</b>
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#### 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 C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>
BEE standard	Act/law for BEE regulation	Whole life carbon	Energy policy in general	NDC
<b>A B C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>	<b>A B C D E</b>

#### Local governments' authority to customise BEE standards

—	Local governments can customise national standards.
✓	<b>Local governments cannot adjust national standards, but the standards differ across regions depending on the local climate.</b>
—	Local governments cannot adjust national standards. All building codes, standards or requirements are uniform across the entire country.
✓	<b>Neighbourhood level approach/planning</b> By 2025, the Ministry of Environment will choose at least 100 municipalities as the preceding decarbonizing cities and give supports to them. In addition, the Ministry of Land, Infrastructure, Transport and Tourism will start the "Renewable Energy Promotion District", where municipalities can designate the area where renewable energy is taken efficiently as Renewable Energy Promotion District, and ease the regulation about height and building coverage ratio when building owners install the renewable energy equipment.
✓	<b>The national government is tracking progress on decarbonisation efforts at the local level</b> Collecting data through survey forms to all local governments.
✓	<b>More ambitious policy instrument by local governments</b> The Tokyo Metropolitan Government mandate the large housing companies to install rooftop PVs.

### 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	—

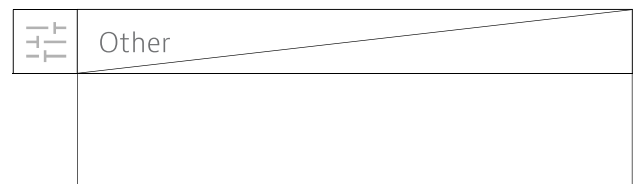
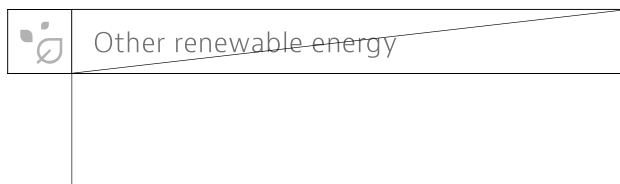
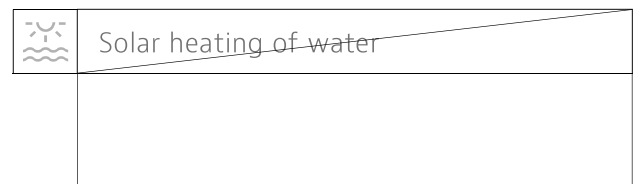
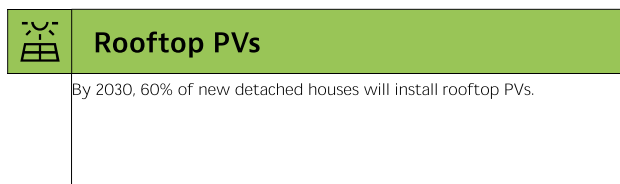
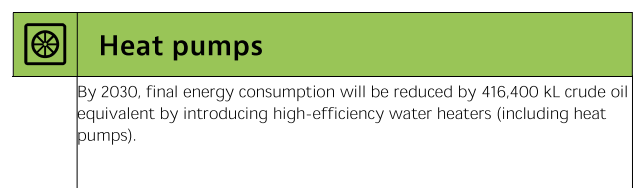
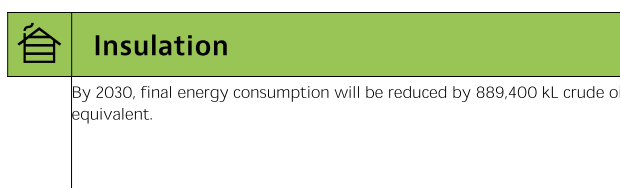
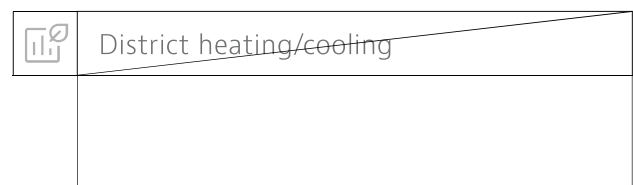
**Actions undertaken by the national government to support local governments for BEE policy implementation**

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	Priority ✓
Hosting annual conferences focused on BEE policy implementation	—
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**


## Policy focus for decarbonising buildings (Top 3)

### Current focus

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



### Future priorities

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

## 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 checked="" type="checkbox"/>
Financial support to renovate their homes to zero-energy/emission	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" 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="checkbox"/>
	State level	<input type="checkbox"/>
	Local level	<input type="checkbox"/>

#### 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 checked="" type="checkbox"/>
Energy labelling on annual energy consumption	<input checked="" type="checkbox"/>
Comprehensive built environment certification	<input checked="" type="checkbox"/>
Labeling for whole life carbon emissions	<input type="checkbox"/>

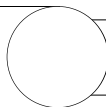
**Target for Mandatory EPC**

New buildings (residential)	<input type="checkbox"/>
New buildings (non-residential)	<input type="checkbox"/>
Existing buildings for renovation	<input 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 type="checkbox"/> Governmental	<input checked="" type="checkbox"/> Non-governmental
Grant for using the following materials	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Low-carbon	<input checked="" type="checkbox"/> Bio-based <input type="checkbox"/> Reused
Policy tools for reusing building materials	<input checked="" type="checkbox"/>		
Mandatory declaration	<input type="checkbox"/>	<input type="checkbox"/> Public	<input type="checkbox"/> Residential <input type="checkbox"/> Non-residential
Limit value on CO2 emissions	<input type="checkbox"/>	<input type="checkbox"/> Public	<input type="checkbox"/> Residential <input 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 checked="" type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Green facades	<input checked="" type="checkbox"/>	<input type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Other	<input type="checkbox"/>		

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

Lowest liveable floor above ground level	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Regulations	<input type="checkbox"/> Financial incentives
Roof drainage system	<input checked="" type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/> Regulations	<input checked="" type="checkbox"/> Financial incentives
Microgrids	<input checked="" type="checkbox"/>	<input type="checkbox"/> Regulations	<input checked="" 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.