Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

# Towards Low Carbon Building

Kimmo Tiilikainen
Minister for Housing, Energy and the Environment


**Low carbon building contributes to the UN Sustainable Development Goals.**

# Finland´s action plan for sustainable urban development

## Low carbon cities

- Low-carbon approach
- Circular economy, resource efficiency
- Sustainable food system, nutrient cycles, locally produced food
- Wood construction
- Innovative and sustainable public procurement

## Smart cities

- Transport and sustainable mobility
- Smart infrastructure and smart energy
- Smart services and service chains

## Socially inclusive cities

- Combating segregation
- Narrowing inequality

## Healthy cities

- Healthy indoor and outdoor spaces
- Green spaces and recreation
- Ecosystem services and nature-based solutions
- Accessibility

**30 %**
from GHGs

**40 %**
from primary energy

**50 %**
from raw materials

**Built environment uses a lot of energy and materials and produces a lot of emissions.**

So far focus has been on energy efficiency


New means to improve low carbon building in the future

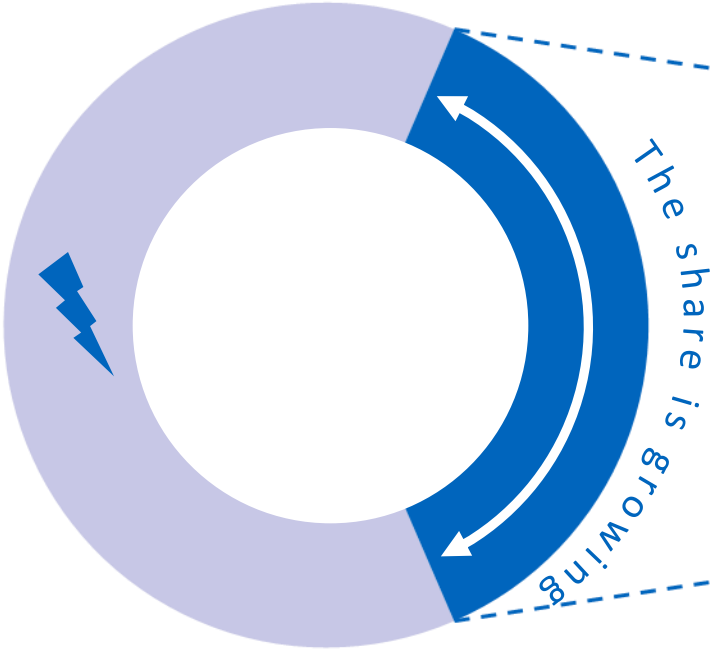
**Now focus to the full life cycle of buildings**

# Example of the carbon footprint of a building

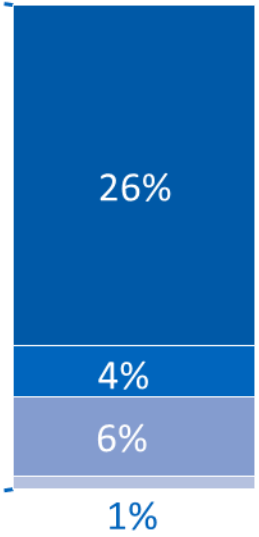
**Background:** Ruuska & Häkkinen: ”The significance of various factors for greenhouse gas emissions of buildings.” *International Journal of Sustainable Engineering*, 2014.

- Building year 2012
- 6 storeys + basement
- Gross floor area 2 500m²
- Energy class A
- Estimated service life 50 years

**63% Energy use**




**37% Other stages of the life cycle**




Production of building materials

Construction

Repairs

Demolition

# Roadmap to low carbon building

- Shift to the regulation of the lifecycle carbon footprint in new building.
  - → Besides energy efficiency, emissions of the production of materials taken into account. Linkage to energy efficiency guidance defined during the implementation of the roadmap.
  - → The aim is flexible guidance where low carbon building can be achieved by following several different routes.
- Carbon footprint calculation must be cost efficient and sufficiently simple and it may not weaken the other aspects of building.
- Carbon footprint calculation based on European standards (EN 15978).

# Low carbon building step-by-step

**Step 1:**

**Testing and methods 2017–**

- Impact assessments of the regulatory framework
- Carbon footprint calculation methods and emissions database
- Competence and tools
- Testing in public building projects and private sector

**Step 2:**

**Regulatory framework 2019–**

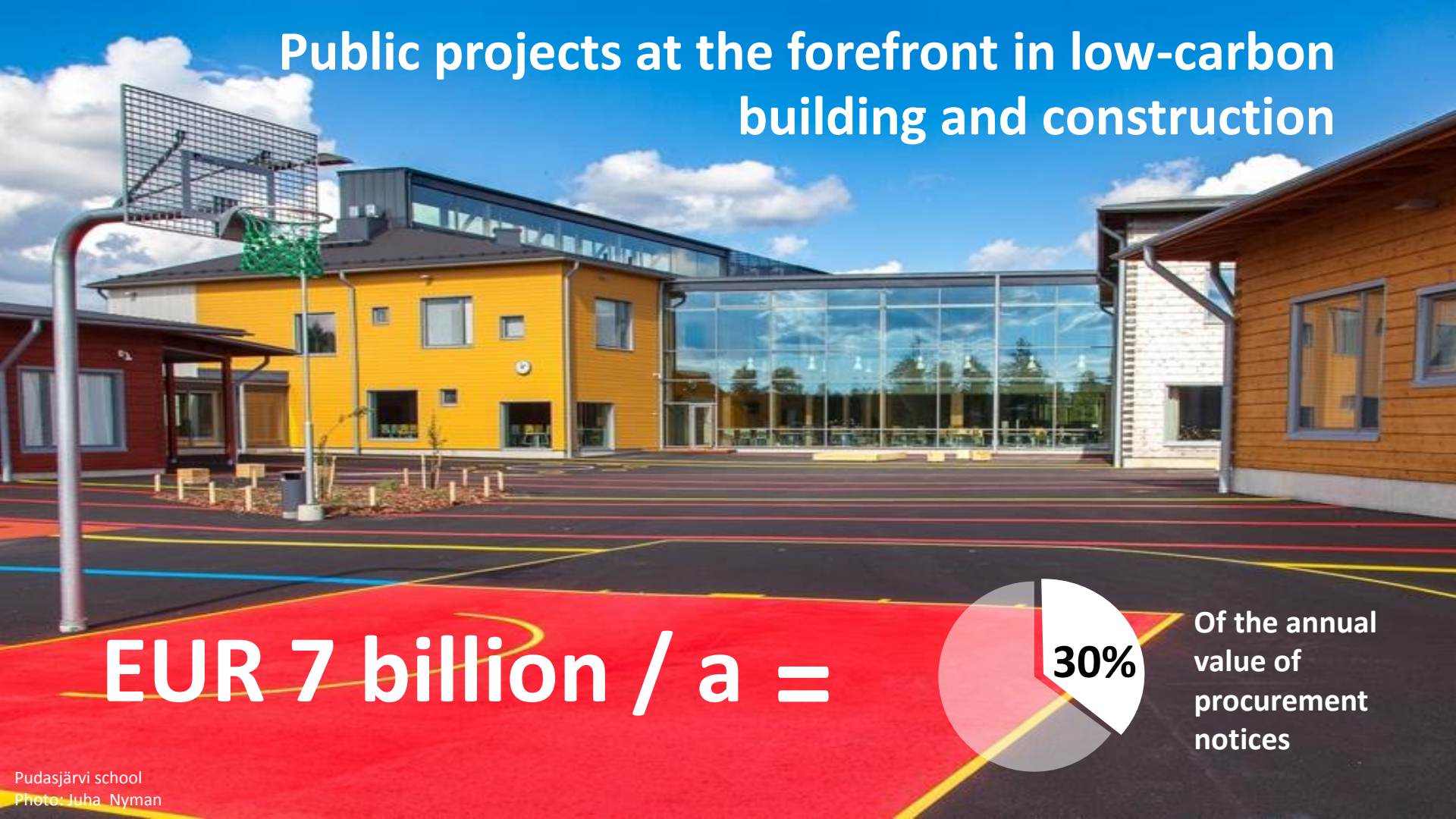
- Legislative preparation and possible incentives
- Linked to city planning and energy regulations
- Extension of pilot projects
- Preparations for monitoring of and statistics on emissions data on buildings

**Step 3:**

**Into use by 2025**

- Possible notification obligation before binding thresholds
- Building stock can be linked to the regulatory framework
- Monitoring emissions data on the building stock

# Public projects at the forefront in low-carbon building and construction



**EUR 7 billion / a =**




**Of the annual value of procurement notices**

Pudasjärvi school
Photo: Juha Nyman

# Procurement criteria for low-carbon building


## Competence

- Competence and references
- Enabling access of new players

## Energy

- Energy efficiency beyond what required by law
- Higher energy efficiency at building sites

## Materials

- Use of renewable or recycled materials
- Carbon footprint calculated

## Innovations

- Encouraging to new low-carbon solutions

## Costs

- Costs during the whole lifecycle into account

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# Thank you!

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