

# Transforming the buildings sector

Selected case studies from the Partnership for Energy Efficiency in Buildings



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# PEEB – Policy and Financing for the Buildings Transition



Launched in 2016, the Partnership for Energy Efficiency in Buildings is funded by



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PEEB is transforming the sector through financing, policy and capacity-building with the vision to achieve a zero emissions and resilient buildings sector.



# Buildings and the Climate

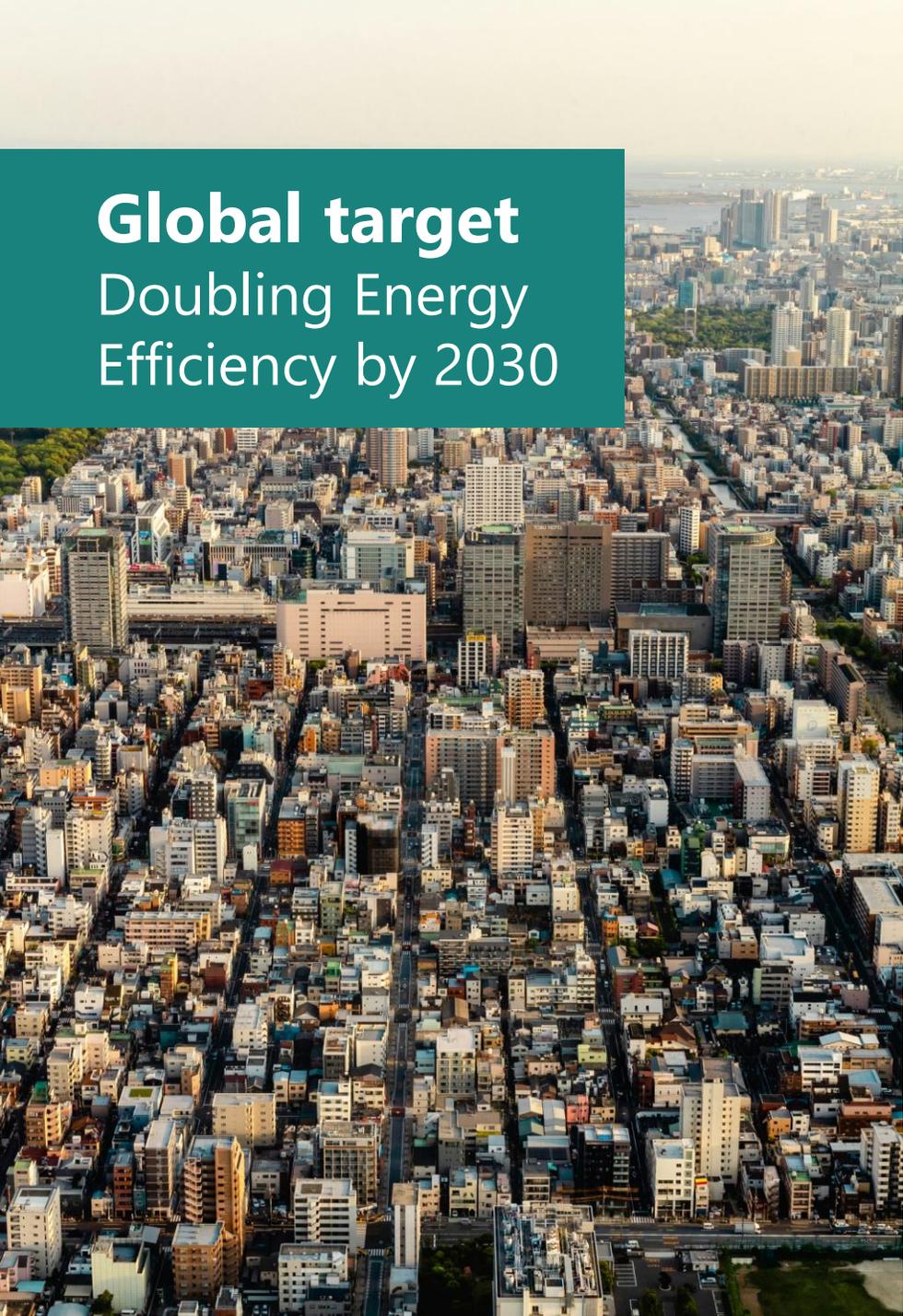
## 1) Buildings have a massive impact on the climate

- **34%** of global **energy-related CO<sub>2</sub> emissions**
- **34%** of all the **energy consumed globally**
- Global building floor area expected to **double** by **2060**
- Use of air-conditioning expected to **triple** by **2050**

## 2) How can energy efficiency help?

- Up to **40%** of global emissions reductions needed to meet climate targets can come from EE measures
- Energy-efficient buildings are **resilient** to **extreme weather, geopolitical instability, and economic crises**

We must therefore **double** the annual rate of energy efficiency improvements **from 2% to 4% until 2030!**



# Global target

## Doubling Energy Efficiency by 2030

- **Current pace:** Global energy intensity improving at 1% per year
- **Target:** 4% improvement per year by 2030
- **What's needed:**
  - Investment in energy efficiency (EE) must **triple** from around USD 650 billion per year today to about USD 1.9 trillion per year by 2030
  - Boost access to **affordable, targeted financing** and build **institutional capacity** to drive EE investments, especially in low-income countries and hard-to-abate sectors (such as buildings)
- **Buildings = Key sector** due to energy use, massive savings potential, and considerable room to scale up efficiency gains
- **Emerging markets and development economies:** Low EE investment share and limited policy coverage

# Benefits

## Energy Efficiency in Buildings



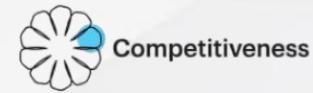
Energy savings

EE measures **reduce the amount of energy required** to fuel and grow our economies



Affordability

EE measures can **reduce energy bills for households**, decrease energy poverty, and make access to energy services more affordable



Competitiveness

EE measures can improve competitiveness at **both the firm level and the country level**, by reducing the amount of energy required to produce economic output



Grid investments

EE can help **close the gap between supply and demand**, at lower costs and more quickly



Energy security

EE can help **mitigate energy security risks** by reducing the reliance on fossil fuel imports, improving grid reliability, and acting as a buffer to supply shocks



Emission reductions

EE can **reduce emissions of GHGs and air pollutants** and make the energy system more sustainable



Jobs

Investment in EE **creates jobs** in a wide range of occupations and geographic locations



Asset values

EE can **increase the value of assets**, such as homes, buildings or equipment



Health

EE can **improve health** by creating healthy living environments with comfortable temperatures and humidity levels



Economic growth

EE allows countries to **generate more economic activity** using the same amount of energy



# The PEEB approach

# Combining Finance and Policy for the Buildings Transition



## PEEB Partnership

<b>Investment Facility</b> Large-scale Projects	<b>Enabling Facility</b> Policies and Capacity
 Technical design and financial feasibility  Concessional loans and grants	 Sectoral strategies  Public policies  Capacity-building  Knowledge
 	

PEEB combines **financing** and **policy** to bring projects to scale for long-lasting sector transformation.

PEEB's **Investment Facility** offers comprehensive support via tailored financial instruments and technical assistance for both public and private sectors to promote energy efficiency and climate adaptation.

PEEB's **Enabling Facility** strengthens national frameworks and removes obstacles to implementing energy efficiency measures.

**Each project serves as a catalyst** for sustainable building practices, promoting the scaling of resilient and energy-efficient construction.

# Integrated Approach

**AVOID**

Building design adapted to local climate

Low-carbon solutions such as PV solar and other renewables

**SHIFT**

**IMPROVE**

Improved energy efficiency of systems and appliances



# Selected case studies

# Partnering for better health

TUNISIA



**Identifying** large potential savings is often the first step to recognizing that **energy efficiency Investment pays off.**

Collaboration between AFD, GIZ, and the Tunisian government turned the renovation of two hospitals into a **blueprint for a broader transformation** of the country's healthcare infrastructure

## COMMITMENTS

- ➔ Mapping the energy efficiency of 35.993 public buildings
- ➔ EUR 442.000 in Technical Assistance for the renovation projects of hospitals in Gafsa (35.000m<sup>2</sup>) and Sidi Bouzid (33.000m<sup>2</sup>) to achieve HQE certification
- ➔ Developing guidance and trainings to strengthen the Tunisian ecosystem (hospital staff, policymakers, professionals) for implementation of efficient healthcare infrastructure



# Partnering for better health in Tunisia

## IMPLEMENTATION



Mapping **identified healthcare** as a high-energy consumption, **priority sector**



**On-site TA** during design and construction phases to ensure hospitals meet EE and sustainability standards

- ⇒ Optimise building orientation, shape, and thermal insulation to maintain comfortable interior temperatures
- ⇒ Enhance natural ventilation and improve heating, ventilation, and air-conditioning systems
- ⇒ Incorporating renewable sources of energy



**Trainings** enhance framework conditions for efficient health buildings

- ⇒ 215 hospital staff members trained on energy efficiency
- ⇒ 12 policymakers trained on energy efficiency finance
- ⇒ 35 municipal agents trained in enforcement of the building code



Publication of a **guide on energy efficiency** for healthcare facilities and awareness-raising among Ministry of Health staff

## IMPACTS

- ⇒ Catalysing finance from EUR 157 million in AFD loans for renovation and EUR 1 million in an EU grant to implement energy efficiency measures
- ⇒ Both hospitals will exceed energy regulations for hospital buildings by **20%**
- ⇒ Saving **171,700 tCO<sub>2</sub>e** over 25 years compared with their baseline scenario
- ⇒ Prepared for a 3°C increase by 2050, with stable or slightly **reduced energy consumption**
- ⇒ **Preparation of projects for expanding** energy efficiency throughout the healthcare sector

# Fostering sustainable tourism

MEXICO



Tourism is responsible for 8% of GHG emissions globally and is a key economic sector in warm countries like Mexico. Working together, PEEB, the Ministry of Environment and private Hotel groups showed that **even small Energy Efficiency improvements yield high savings**

## COMMITMENTS

- Cooperation with the Ministry of Environment to update hotel energy efficiency regulation
- Energy efficiency in hotels guide
- Energy efficiency support to Grupo Posadas and 20 hotels of the Grupo Misión

# Fostering sustainable tourism in Mexico

## IMPLEMENTATION



Technical cooperation for the **development of new energy efficiency hotel regulation**



Development of hotel prototype **simulations for three different climate zones in Mexico**, identifying **potential building energy efficiency measures** ranging from no cost to measures that would cost under EUR 100.000 per hotel



Publication of a technical **guide for energy efficiency in hotels**

## IMPACTS

- ⇒ Hotels achieve significant energy and cost savings, improving business profitability.
- ⇒ **34% of energy consumption reduction**, corresponding to **cost savings of EUR 1 million** and **emissions reductions of 29%** in Grupo Posadas hotels
- ⇒ Plans for construction of 20 hotels by Grupo Misión **incorporate energy efficiency measures** with estimated **savings of 120 ktons of CO2 over 30 years**
- ⇒ Energy **savings of 630 MWh** in 2020 for 2 Grupo Misión hotels

## Provinces leading efficient social infrastructure

### ARGENTINA

In Argentina, the buildings sector is **transforming from the bottom-up**. The provinces of Cordoba, Entre Rios, and Santa Fe and the city of Buenos Aires are working with PEEB Cool to **make social infrastructure energy efficient and resilient**.

Using the PEEB approach, they are renovating hospitals, schools, and airports to meet enhanced energy consumption, safety, and comfort standards – and **transforming policy to make these high standards the norm for the sector**.

### COMMITMENTS



- ➔ 100 million EUR for project assistance for renovation of 6 hospitals, 2 airports, and 15 schools
- ➔ Support for the development and implementation of energy efficiency policies on the province level
- ➔ Communities of practice to prepare professionals to implement ambitious energy efficiency regulations

 **Santa Fe**  
PROVINCIA | Ministerio  
de Salud

Salud

# Partnering for better health in Tunisia

## IMPLEMENTATION



Support to drafting on **energy and environmental criteria** for the public sector in the Santa Fe province



**On-site TA** during design and construction phases to ensure renovation projects meet EE and sustainability standards

- Modernization of cooling and heating systems
- Better insulation
- Incorporating renewable sources of energy



Development of **technical guides** covering specific energy efficiency topics

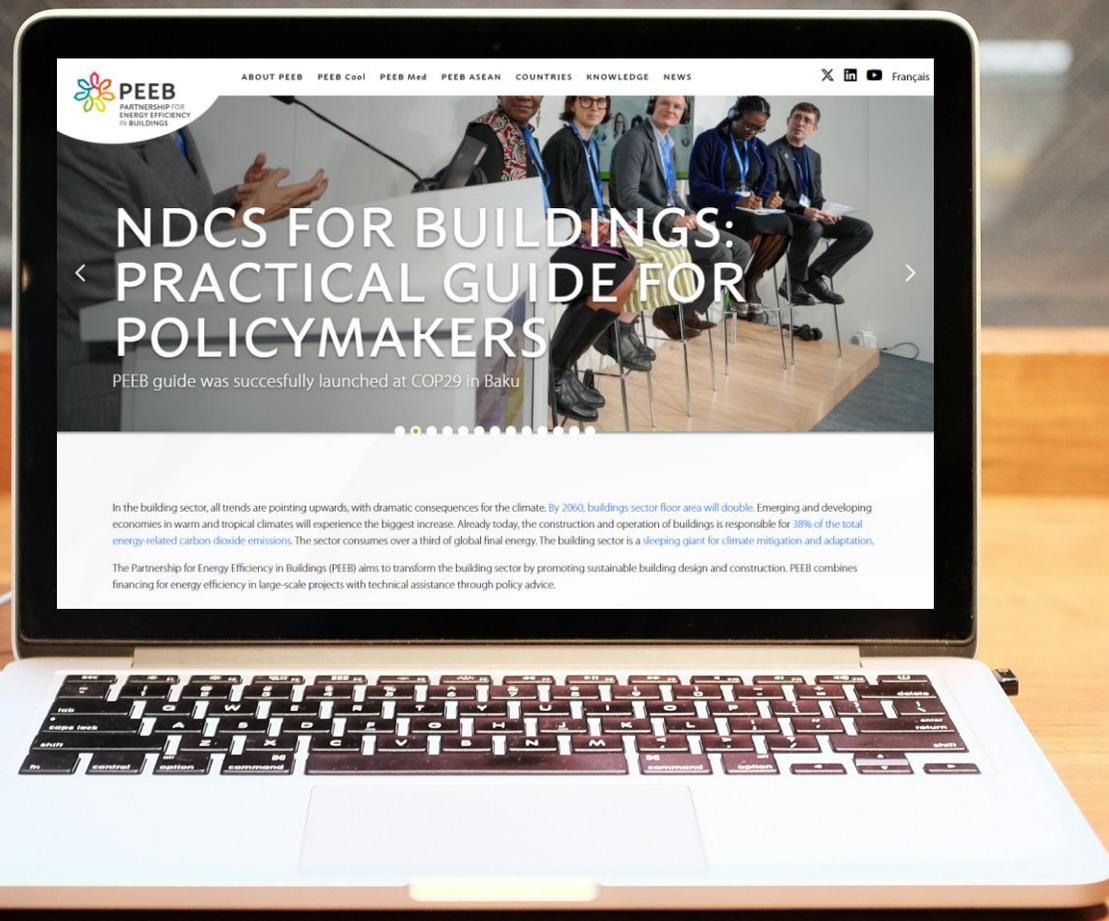


**Trainings and communities** of practice for **qualification and knowledge exchange**

## IMPACTS (EXPECTED)

- **Reduction by 40% of GHG** or energy use in 6 hospitals, 2 airports & 15 schools
- **Improved thermal comfort** in hospitals and schools
- **Improved regulations** and new efficiency standards apply to future public sector projects

# Thank you!



PEEB



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