Tracking building energy codes for the Global Status Report for Buildings and Construction

H Kennard, I Hamilton UCL Energy Institute
h.kennard@ucl.ac.uk

Energy Evaluation 2022, Paris– Wednesday, 28th September 2022

The Global Status Report for Buildings and Construction (Buildings-GSR)

What is the Buildings-GSR?

A yearly report since 2016 on the progress of the buildings and construction sector globally towards achieving the Paris Agreement goals:

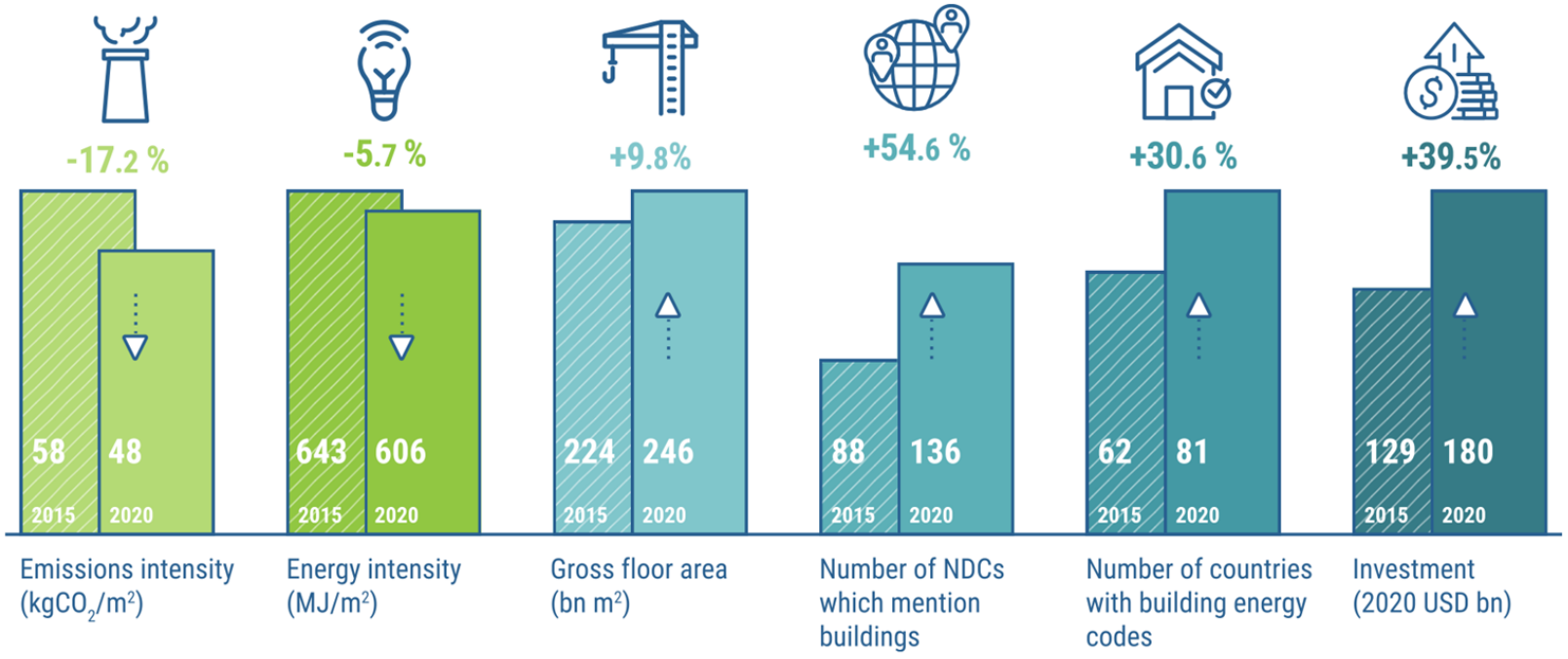
- An update on the drivers of CO_2 emissions and energy demand globally and
- Status of policies, finance, technologies, and solutions that support a zero-emission, efficient, and resilient buildings and construction sector

A collaborative effort, building a global community.

- BPIE & UCL
- International Energy Agency (IEA)
- World Bank / IFC
- Over 70 GlobalABC members and experts.

The 2022 Buildings-GSR will be published in the coming months

Change in global drivers of trends in buildings since Paris Agreement in 2015



Sources: UNFCCC 2021; Buildings-GSR 2021; IEA 2021a. All rights reserved.

Notes: Emissions intensity is total buildings construction and operations emissions over total floor area, energy intensity is total building operational energy over

As of 2020 and compared to 2015, global CO_2 emissions from buildings operations fell 10%, levels not seen since 2007. This decline follows an emissions peak in 2019. However, this decline appears to be temporary as emissions pick up again with increasing economic activity.

Building energy intensity has fallen by 5%, while floor area has increase by 10%.

Commitments, codes and investment in building efficiency have risen, but more effort is needed.

What is a building energy code?

- Any national or subnational legislation which regulates construction practice with a view to limiting buildings energy use.

- For the purposes of the Buildings-GSR, a building energy code will be available as a standalone document or a subsection of general building code.

- Typically, coverage is tracked for both residential and non-residential sectors but not reported at this level of detail.

Examples

Nigeria

NATIONAL BUILDING ENERGY EFFICIENCY CODE

2. Commencement and Definitions

2.1 Title, Aim, Scope and Adoption of BEEC

2.1.1 **Title:** This code shall be known as the "National Building Energy Efficiency Code" hereinafter referred to as "the BEEC".

2.1.2 **Aim:** The aim of the BEEC is to set minimum requirements on Building Energy Efficiency and to provide for their proper implementation, control, and enforcement.

2.1.3 Scope of the BEEC

2.1.3.1 The BEEC consists of the following elements;

- Minimum energy efficiency requirements and verification methods;
- Calculation methods and tools;
- Building energy label and energy efficiency incentives;
- Control and enforcement;
- Qualification of experts;
- Review and adaptation.

2.1.3.2 The standards specified in the BEEC shall constitute the minimum requirement from which other energy-related regulations may be derived. Wherever any derived energy-related regulation is in conflict with any section of the BEEC, the provision in the BEEC prevails.

Ireland

Building Codes Assistance Project

SUNSHOT INITIATIVE | TOOLS | NEWS | CODE STATUS | ABOUT | CONTACT US

Ireland

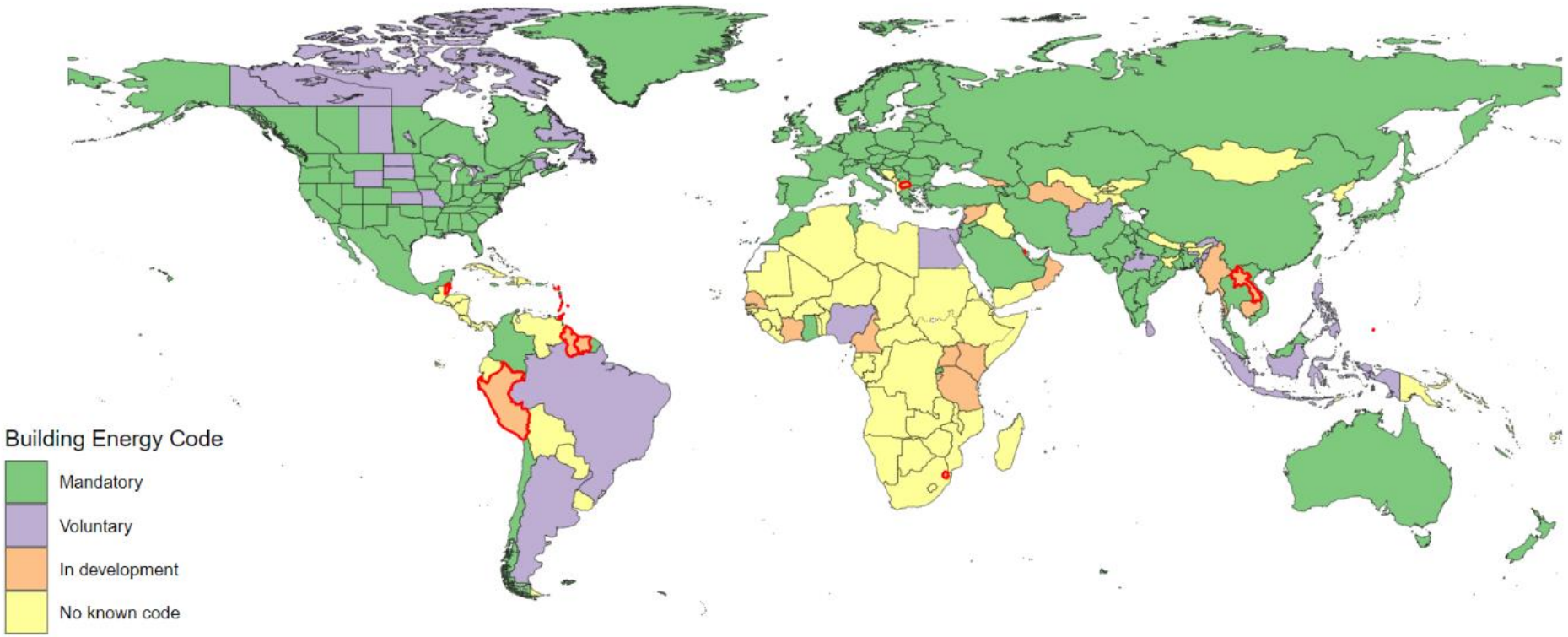
Current Codes

SI 259 of 2011

Part L of the Building Regulations Conservation of Fuel and Energy in Dwellings sets the energy and carbon dioxide emissions requirements for new and existing buildings subject to the Building Regulations. It is based on the UK's codes and covers a comprehensive list of building elements, as well as establishing a Dwelling Energy Assessment Procedure (DEAP).

Ireland already has a current building energy code, as well as national programs in place to help support it. The next step is to develop an update and change cycle to the Part L of the Technical Guidance Document. This will systematically ensure that the code stays current and incorporates the most recent advancements in building science.

Energy Building Codes in 2021



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city, or area.

As of September 2021, only 43 countries had nationwide mandatory codes for both residential and non-residential sectors.

Where they are implemented, the codes are typically not aligned with meeting a net zero goal by 2050.

82% of the population that is to be added by 2030 living in countries without any building energy codes or only voluntary codes.

Challenges/opportunities

- The existence of a building energy code does not necessarily mean it is enforced – can compliance be assessed at the national level?
- How might the instigation of building energy codes be used a natural experiment to evaluate building's energy use and emissions?
- How can regional/municipal building energy regulations be effectively tracked?
- How might regulations regarding *existing* building's energy use and emissions be incorporated in the tracking activity?