



UNLOCKING EFFICIENCY

The Global Landscape of Building Energy Regulations and their Enforcement



THE WORLD BANK
Development Economics • Global Indicators



Globally buildings account for 37% of CO2 emissions with energy consumption  at alarming rate

88

countries analyzed in global dataset

71

have unified Building Energy Codes

52

countries demonstrate consistent enforcement



75% Increase in Global Floor Area by 2050

Projected to add a floor area equal to the size of Paris every week



Building energy codes are essential for transforming construction and fighting climate change



Decisions made today on building energy efficiency will shape emissions and energy use for decades



Gaps between code adoption and enforcement persist globally, especially where institutional capacity is low



Implementing energy codes during construction is **3-5x** more cost-effective than retrofitting later



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Core Technical Areas Covered

Countries Requiring, Regulating, or Enforcing Standards

Roofs & Walls

- 62** Roof insulation requirements
- 57** Wall insulation standards
- 47** Stricter roof vs. wall standards



Windows & Doors

- 51** Window insulation regulations
- 41** Door thermal performance standards
- 35** Solar heat gain limits

Air Barriers

- 31** Passive design checklists enforced
- 19** Shading requirements mandated
- 56** Insulation calculations verified



Space Heating

- 43** Heating system efficiency standards
- 32** Regulations for fossil fuel boilers
- 38** Heat pump efficiency standards



Space Cooling

- 52** Cooling system regulations
- 36** Split AC efficiency standards
- 33** Central AC performance standards

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Core Technical Areas Covered

Countries Requiring, Regulating, or Enforcing Standards

Water Heating

- 43** Fossil fuel water heater standards
- 37** Electric water heater standards
- 32-1.0** Energy factor requirement range

Lighting

- 51** Lighting efficiency regulations
- 38** Luminaire efficacy standards (45–150 lm/W)
- 27** Indoor lighting allowances

Passive Design

- 31** Passive design checklists enforced
- 19** Shading requirements mandated
- 56** Insulation calculations verified

Retrofit Standards

- 16** Retrofit requirements in place
- 19** Retro commissioning enforced
- 05** Retrofit standards in Sub-Saharan Africa

Post-Construction Verification

- 35** As-built energy verification
- 22** Walkthrough inspections required
- 14** Mandatory energy audits



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