

to Secure our Global Energy Future



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Building energy code is the first IEA EE policy recommendation for buildings

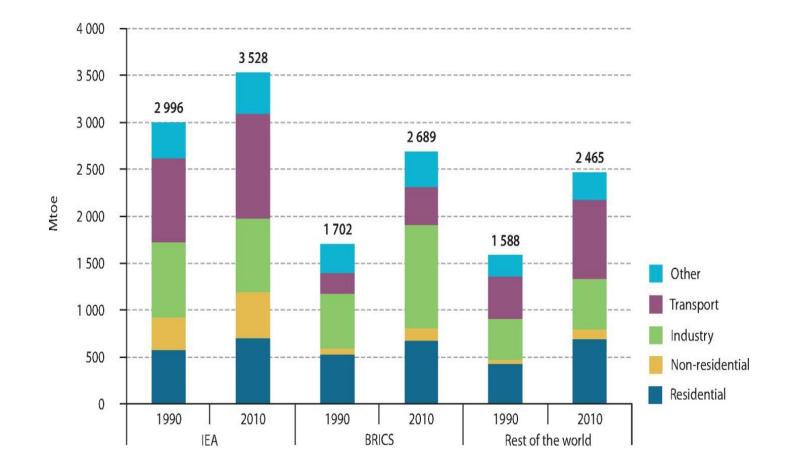
The IEA recommends in its 25 Energy Efficiency Policy Recommendations that governments "require all new buildings, as well as buildings undergoing renovation, to be covered by energy codes and meet minimum energy performance standards (MEPs) that aim to minimise life-cycle costs.

Energy codes and MEPs should be enforced, regularly strengthened and take a holistic approach that includes the building envelope and equipment"

Policy Pathway



The buildings sector is the largest consumer of energy globally



Policy Pathway

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The buildings sector exerts a heavy pressure on global energy supply

100 90 80 70 60 Mtoe 50 40 30 20 10 0 United Kingdom Germany France Spain Japan Total gas demand Gas imports used for buildings Gas imports used for industry Gas imports used for others Gas imports used for power generation

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Residential energy expenditures place a heavy burden on households

4.0% 3.5% 3.0% 2.5% 2.0% Others 1.5% LPG 1.0% Oil and derivatives 0.5% Natural gas Electricity 0.0% Slovak Republic Luxenbourg Netherlands United Kingdom New Legand . Germany Greece reland 1×alty Japan tores Switterland Canada France Portugal spain Belgium United States

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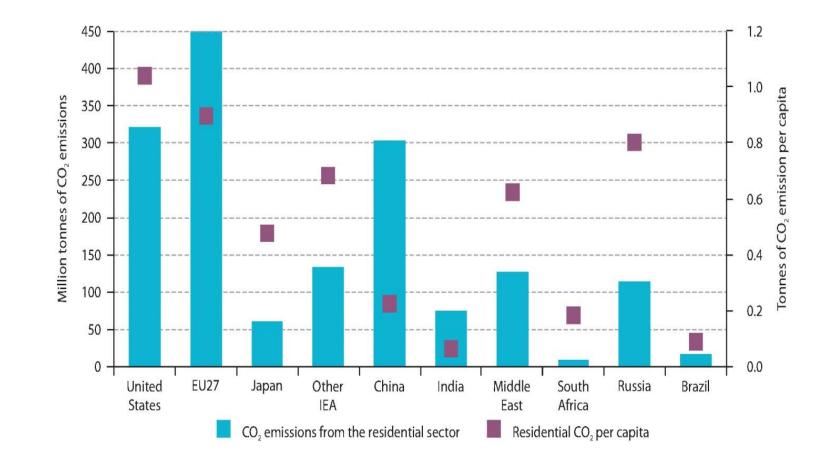
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Energy used in buildings generates significant GHG emissions



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Building energy codes: the policy instrument to reduce buildings' energy consumption Prescriptive energy codes (trade-off could be made between energy performance of the envelope and those of HVAC systems) 1970 Modernisina Building **Energy Codes** to Secure our Global Energy Model energy codes (called also performance code in Future some countries) (energy requirements vary from one reference building to another) 1990 **Overall performance code (integrated design & holistic** approach, standard energy performance requirements for each building type in each climate zone) 2000 **Resilient** nations

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Modern building energy codes: energy sufficiency, energy efficiency and renewable energy

Energy sufficiency Energy efficiency Renewable energy strategy Reduce energy needs Reduce energy consumption Reduce CO, emissions by using renewable energy Policy instrument Building energy codes Land-use policies Land-use policies Building energy codes S&L policies **Building energy codes** S&L policies for equipment **Bioclimatic design principles** Mandatory S&L for: Mandatory share of supply Policy measure overall building energy from renewable energy sources Use of passive solutions performance Mandatory S&L for equipment building elements and equipment

Policy Pathway

OECD/IEA/UNDP 2013

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Energy

A policy package to increase the stringency of energy requirements and to avoid the lock-in effect

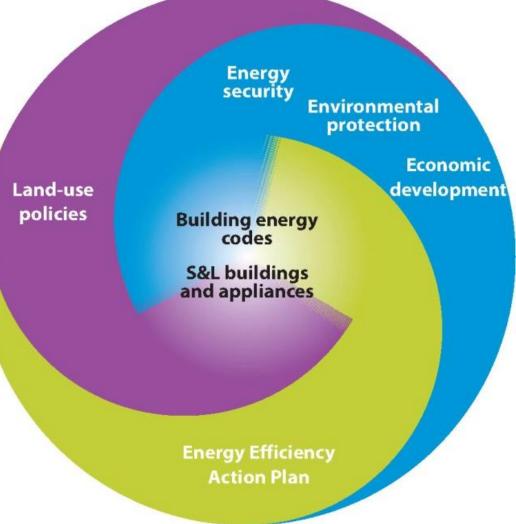
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Getting it right from the start is crucial given the long lifespan of buildings

Light bulbs: incandescent Light bulbs: fluorescent Office equip: computers, printers, faxes, copiers. Modernisina Buildina Consumer electronics: TVs, VCRs, stereos.. **Energy** Codes Cons. appliances stoves, fridges, washers.. to Secure our Residential space heating and cooling equip. **Global Energy** Residential water heating equipment Commercial heating and cooling equip. Electric transm. and distrib., telecom, pipelines Power stations Building stocks 20 80 40 60 Years

Policy Pathway

100

120

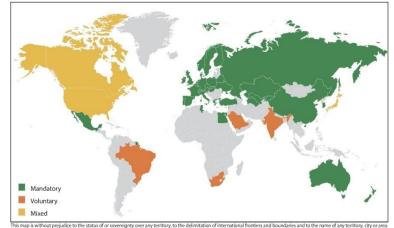
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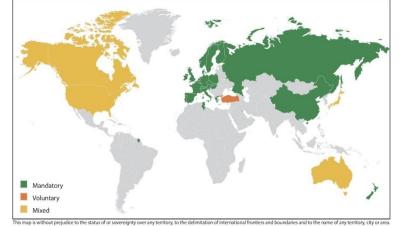
Future

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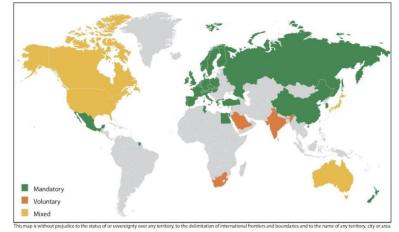
Progress needs to be made in the implementation of building energy codes



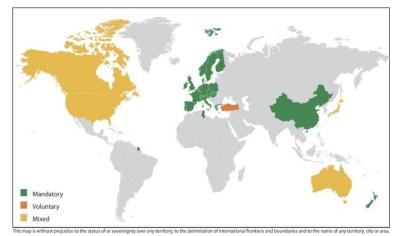
New residential buildings



Existing residential buildings



New non-residential buildings



Existing non-residential buildings

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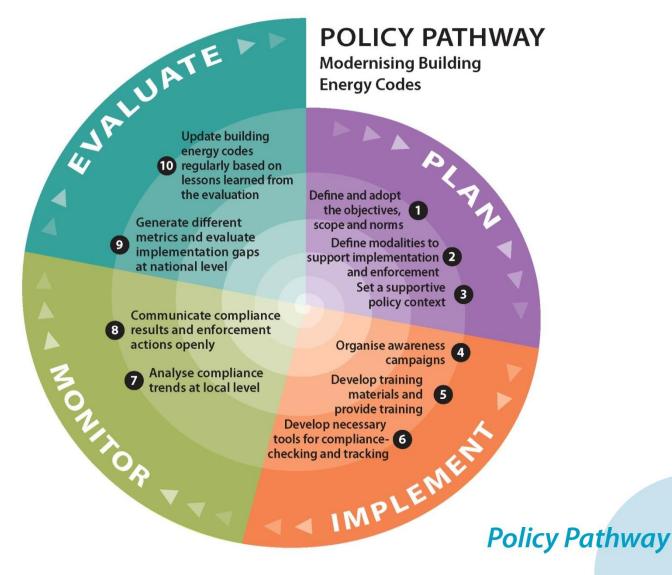


Effective building energy codes to secure our global energy future

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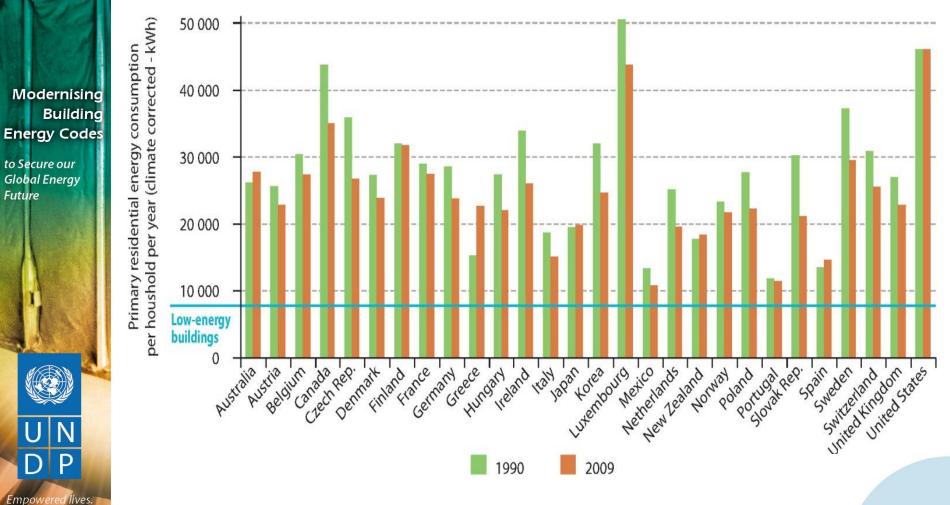






Future

Challenges to effective building energy codes at the planning phase (1)

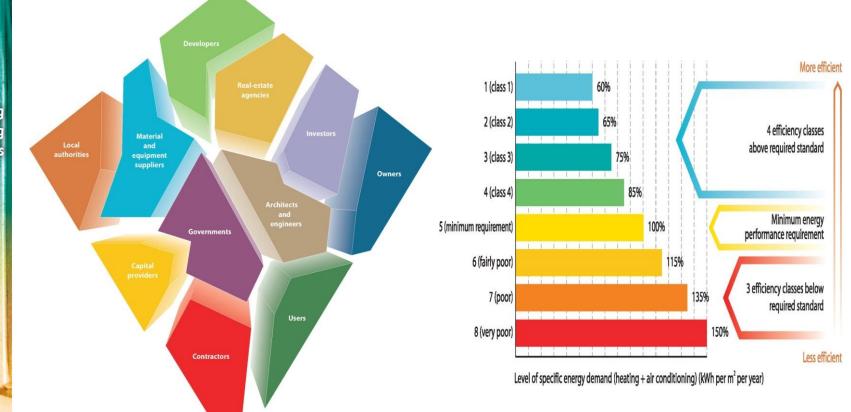


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Challenges to effective building energy codes at the planning phase (2)



Fragmentation of the buildings sector

Alignment of energy requirements in different policy instruments

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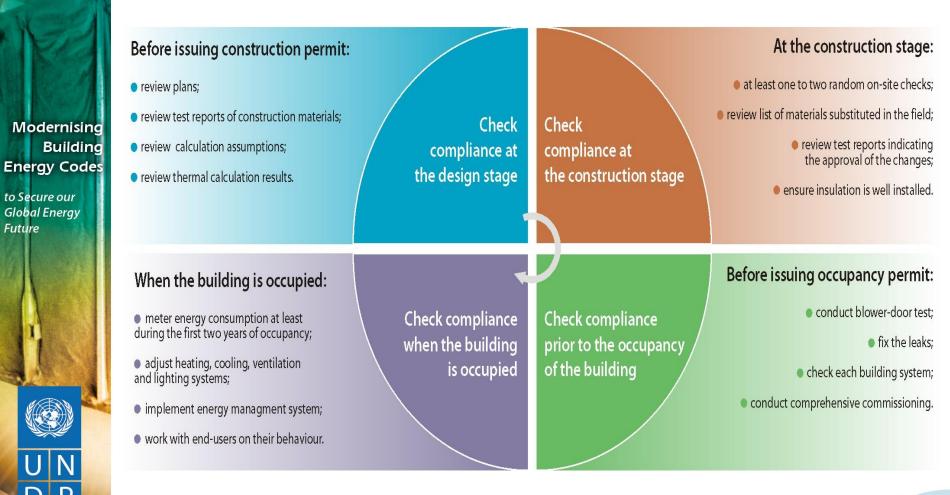
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Challenges to effective building energy codes at the implementation phase



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Demonstration projects to develop baselines and build technical capacity

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External insulation of walls of new buildings in Kyrgyzstan

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More than 40 countries benefit from UNDP support for effective building energy codes

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International collaboration to achieve an efficient buildings stock globally

IEA Sustainable buildings Centre, www.sustainablebuildingscentre.org

Sample of UNDP/GEF projects: in Central Asia www.beeca.net

NAMAs (Nationally Appropriate Mitigation Actions)http://www.lowemissiondevelopment.o rg/knowledge-center/namas

The UN-SE4ALL (Sustainable Energy For All)

initiative

www.sustainableenergyforall.org **Policy Pathway**

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Empowered lives. Resilient nations. The publication and the presentation are now available for free download at the following link

http://www.iea.org/publications/freepublications/publica tion/name,42535,en.html

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