

Policy seminar

Energy Use and Green Buildings After Great East Earthquake in Japan

Tokyo, February 25th

Overview of Buildings Energy Efficiency Policies in IEA member countries

Dr. Yamina SAHEB

Head of Sustainable Buildings Centre

International Energy Agency

yamina.saheb@iea.org



**International
Energy Agency**

Buildings energy efficiency policies

■ Regulatory instruments

- Buildings energy codes including minimum energy performance requirements (standard) aiming to zero energy buildings

■ Information instruments

- Labels and certificates

■ Incentive schemes

- Fiscal instruments
- Financial measures
- Market-based instruments
- Direct instruments

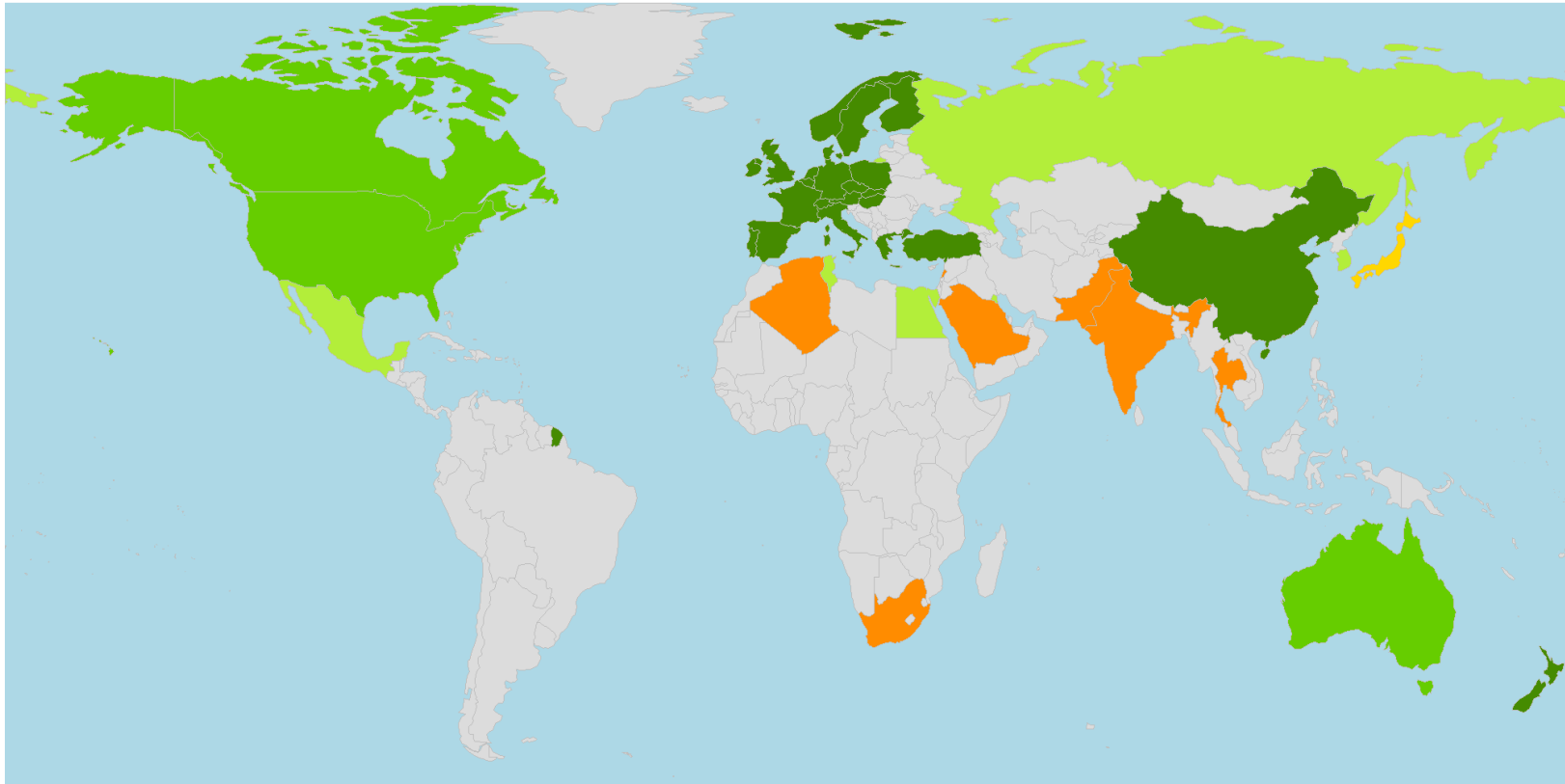
Building energy codes

- **Building energy codes are the major tool to reduce energy demand in the buildings sector**
- **Building energy codes regulate the design and construction of buildings to foster the effective use and conservation of energy over the lifetime of the building**
- **Buildings energy codes apply for both new and existing buildings**
- **Building energy codes need to be dynamic, regularly updated and permanently enforced to deliver energy savings**

Building energy codes types

- Prescriptive – fixed (seventies)
 - Simplest, least costly compliance, most restrictive
- Prescriptive – with tradeoffs (eighties)
 - Simple to follow, more flexibility, more complexity
- Model-based - (nineties)
 - Design an “equivalent” building that meets code, then show your building is equal or better
 - Very flexible, but costly in terms of design
 - Constraints in terms of operational issues
 - Requires accurate, useable energy simulation tools
- **Performance based – Measured outcomes (current)**
 - How to account for actual energy use, occupancy
 - What if performance does not meet goals?
 - More pressures on tools to accommodate “reality”

Building energy codes stringency for new residential buildings

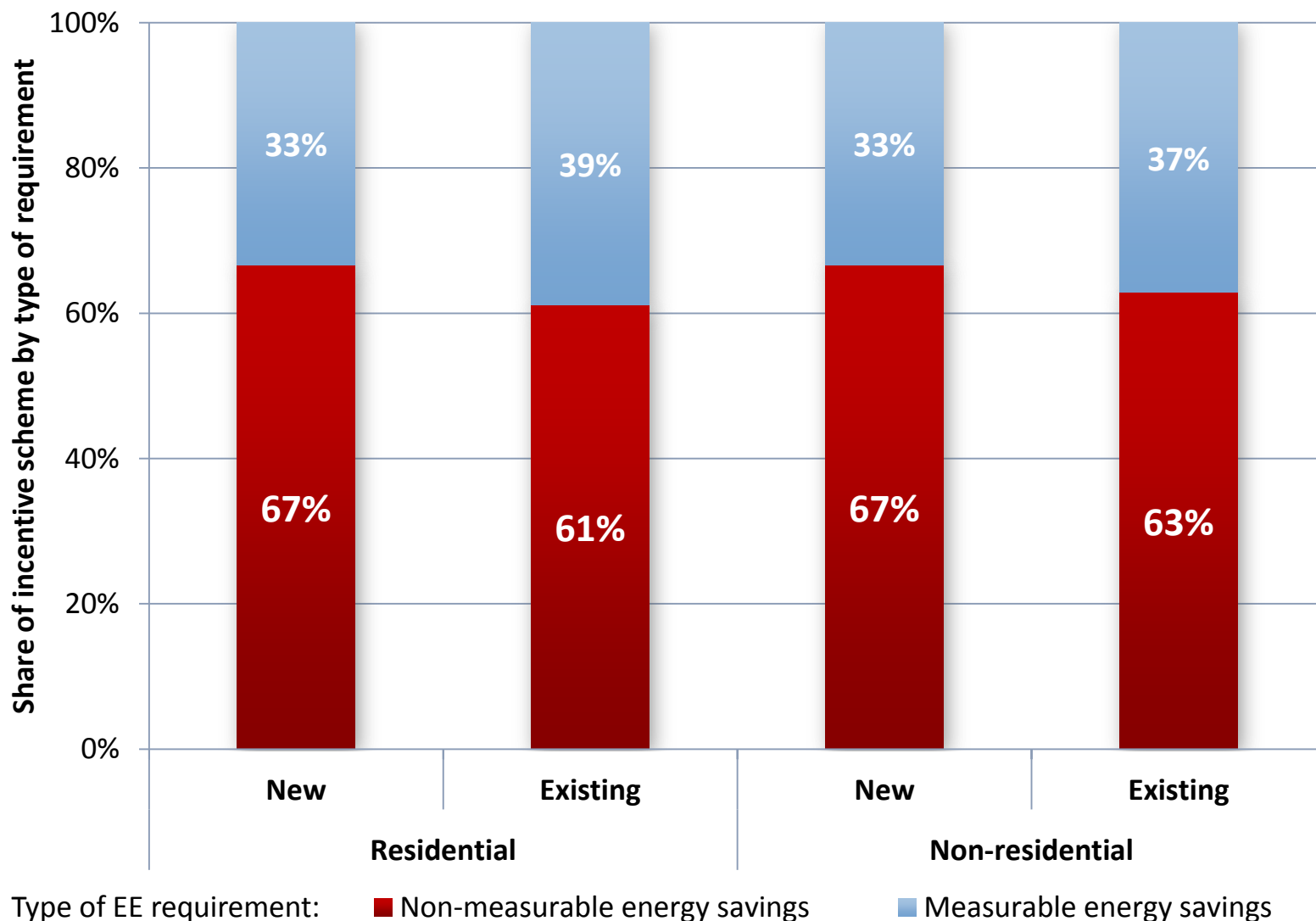


- All mandatory:** the entire building stock is covered by mandatory building energy codes
- All mixed:** the entire building stock is covered by a mix of mandatory and voluntary building energy codes
- Partial mandatory:** part of the building stock is covered by mandatory building energy codes
- All voluntary:** the entire building stock is covered by voluntary building energy codes
- Partial voluntary:** part of the building stock is covered by voluntary building energy codes
- No codes or Unknown**

The path to low-energy and low-carbon buildings

	1 Energy sufficiency	2 Energy efficiency	3 Renewable energy
Energy strategy	Reduce energy needs	Reduce energy consumption	Supply with renewable energy
Policy instrument	Land use policies Building energy codes	Building energy codes S & L policies	Land use policies Building energy codes S&L policies for equipment
Policy measure	Bioclimatic design principles Use of passive solutions	Mandatory S&L for: <ul style="list-style-type: none"> • overall building energy performance • building elements and equipment 	Mandatory share of supply from renewable energy sources Mandatory S&L for equipment

Most incentive schemes are not tied to measurable energy efficiency measures



IEA- BEEP (Buildings Energy Efficiency Policies) database

Browse policies

BEEP database is the global one stop-shop for Building Energy Efficiency Policies from all over the world.

 Australia	 Hungary	 Russia
 Austria	 India	 Slovak Republic
 Belgium	 Ireland	 South Africa
 Brazil	 Italy	 S Spain
 Ca Canada	 J Japan	 Sw Sweden
 C China	 K Korea	 Switz Switzerland
 Czech F Czech Republic	 Luxerr Luxembourg	 Tu Tunisia
 Den Denmark	 Nethe Netherlands	 Turkey
 Fir Finland	 New Z New Zealand	 United K United Kingdom
 France	 Norway	 United States
 Germany	 Poland	
 Greece	 Portugal	

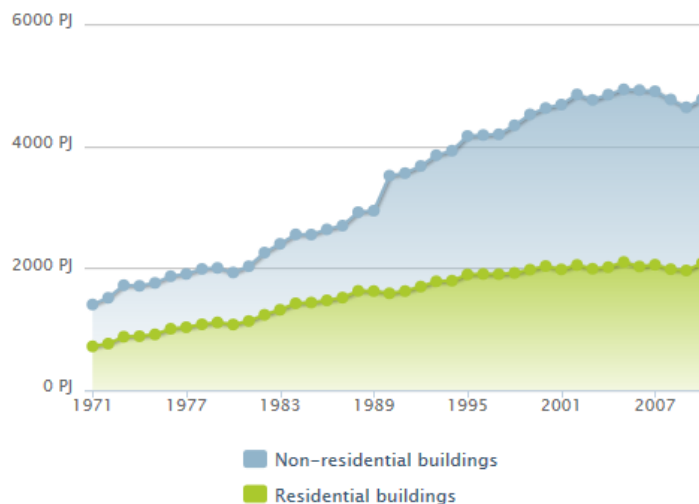


Japan

Overview

Facts

Final energy consumption of the buildings sector (2010)	4,767 PJ
Residential buildings	2,080 PJ
Non-residential buildings	2,687 PJ



◀ Final energy consumption of the buildings sector ▶

Policies

National policies

Building Codes

Residential buildings [Rational use of energy within buildings](#)

COUNTRY

Japan

- [Overview](#)
- [Building Codes](#)
- [Labels](#)
- [Incentive Schemes](#)
- [Zero Energy Buildings](#)

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BROWSE

Australia

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- [Labels](#)
- [Incentive Schemes](#)
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Austria

- [Overview](#)
- [Building Codes](#)
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Belgium

- [Overview](#)

The EU has adopted a comprehensive regulatory framework but the ambition level is too low

Energy Efficiency Directive

Energy Performance Building Directive

Ecodesign Directive

Cost-optimum methodology

Several incentive schemes

- **3%** renovation rate of buildings **owned and occupied by central governments**
- **Staged** deep renovation
- Mandatory MEPS for buildings that undergo **major** renovation
- **Lack of compliance** checking
- **Component** approach
- **Boilers not yet regulated**
- **Lack of market surveillance**
- **Societal** perspective missing
- **Multiple** streams
- Incentives **not tied to MEPS**

Fragmentation of the buildings sector is a major barrier to stringency increase





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The IEA Sustainable Buildings Centre is the online voice for low energy buildings

	Germany
	Building Energy Code
	National
	RESIDENTIAL
	NON-RESIDENTIAL
	Energy Conservation Regulations (EnEV)
	Chronology
	Development
	Implementation
	Verification
	Enforcement
	Compliance path
	Enforcement
	Permits type
	Fines
	Sanctions
	Information
	Guidelines
	Standards
	Guidelines
	Standards



	China
	Labels
	National
	RESIDENTIAL
	NON-RESIDENTIAL
	Passive House
	Chronology
	Development
	Implementation
	Verification
	Enforcement
	Compliance path
	Enforcement
	Permits type
	Fines
	Sanctions
	Information
	Guidelines
	Standards
	Guidelines
	Standards

Events



Energy Transition, Seminar of the Energy Center, Ifri

Paris,
12 October 2012

[See all events](#)

Publications



25 Energy Efficiency Policy Recommendations (2011)

[See all publications](#)