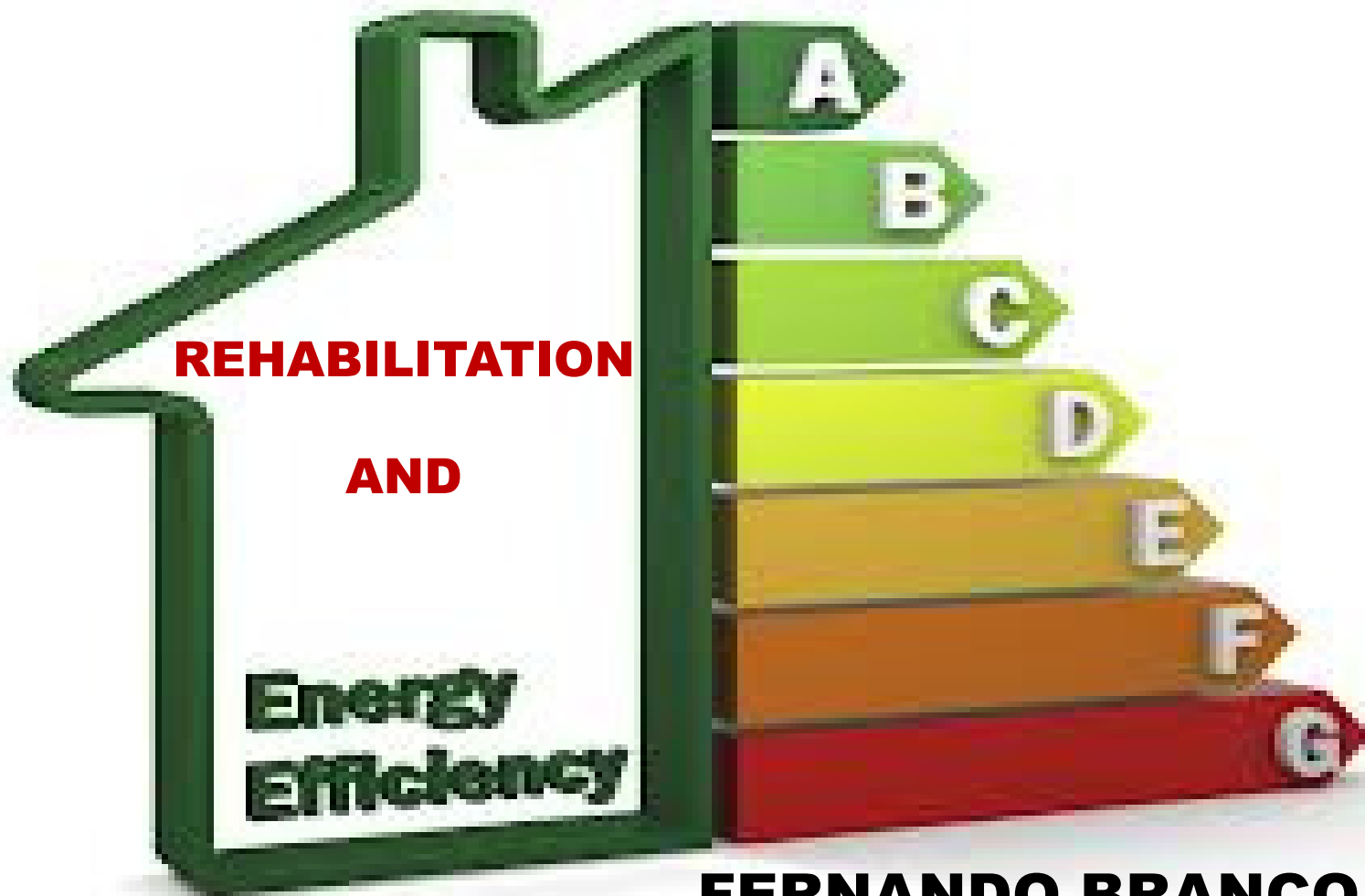




REHABILITATION AND ENERGY EFFICIENCY



FERNANDO BRANCO

- EUROPEAN COUNCIL OF CIVIL ENGINEERS





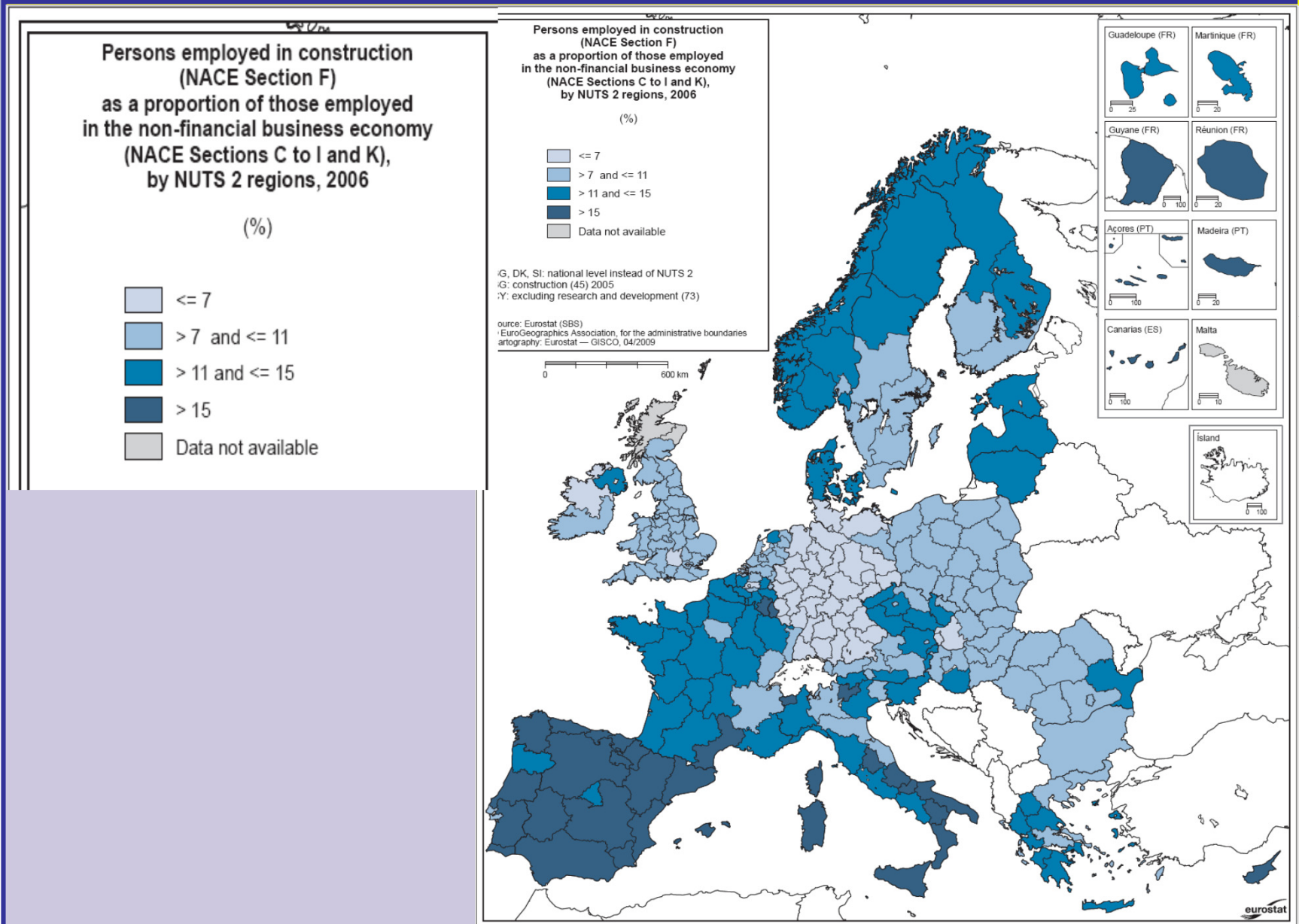
REHABILITATION AND ENERGY EFFICIENCY

	Value
Main indicators	
Number of enterprises (thousands)	882.2
Number of persons employed (thousands)	3 940
Turnover (EUR million)	580 144
Purchases of goods and services (EUR million)	418 752
Personnel costs (EUR million)	90 774
Value added (EUR million)	150 931
Gross operating surplus (EUR million)	60 157
Share in non-financial business economy total (%)	
Number of enterprises	4.1
Number of persons employed	3.0
Value added	2.5
Derived indicators	
Apparent labour productivity (EUR thousand per head)	38.3
Average personnel costs (EUR thousand per head)	29.1
Wage-adjusted labour productivity (%)	132.0
Gross operating rate (%)	10.4

Source : Eurostat (online data code: sbs_na_con_r2)

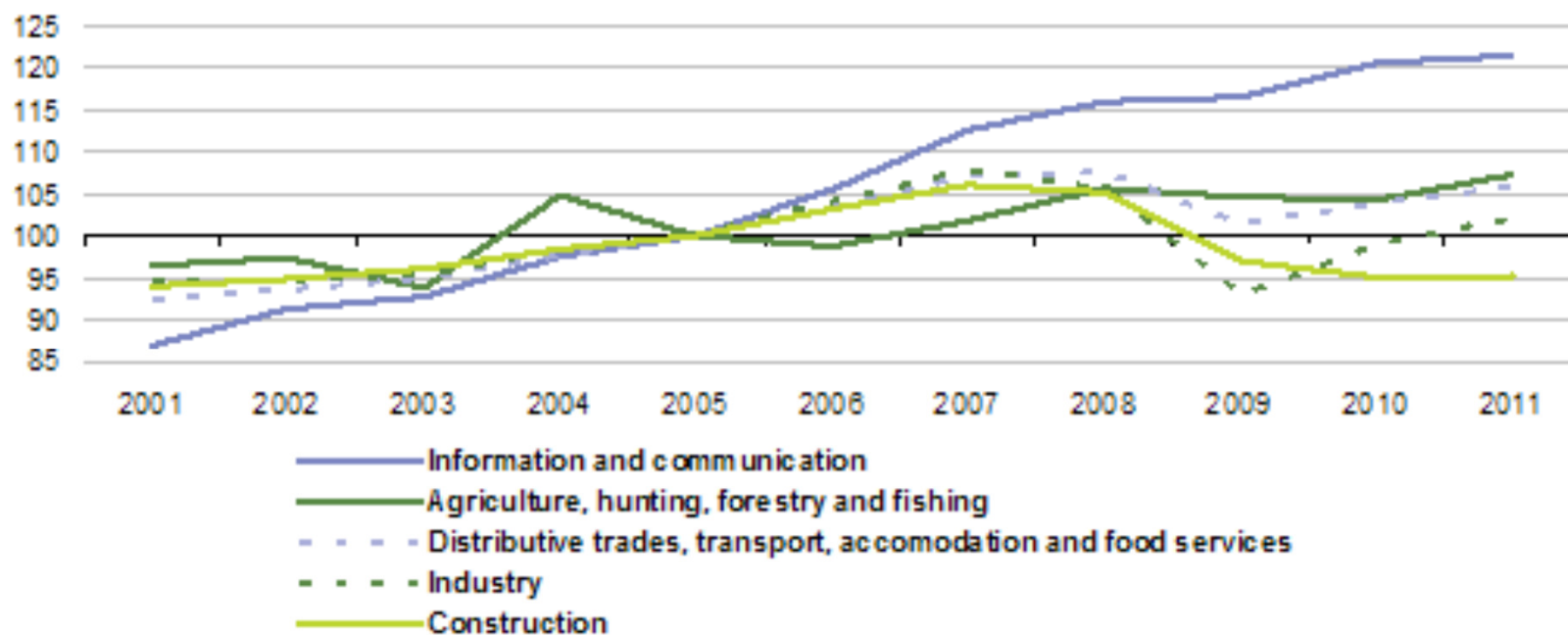


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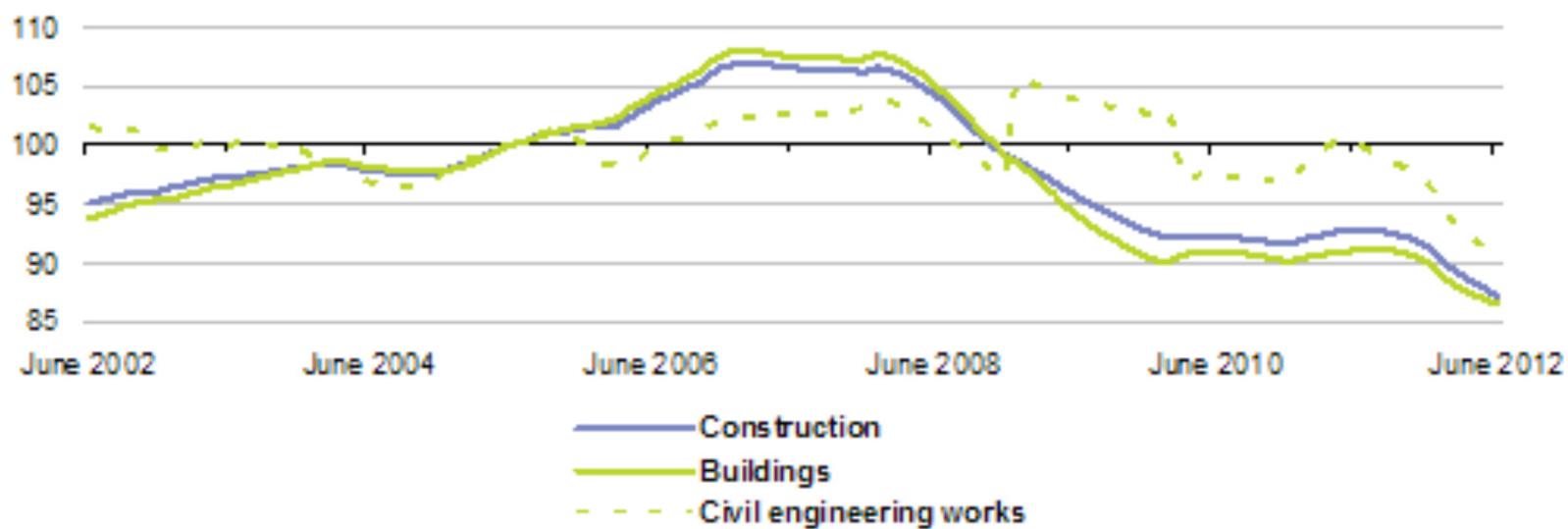
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Source: Eurostat (online data code: nama_nace10_k)



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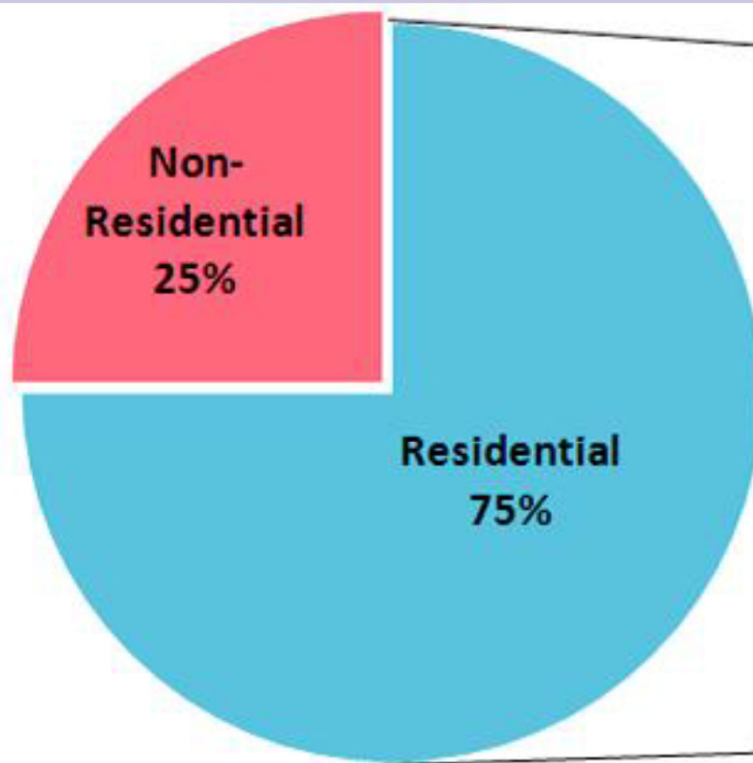


(1) Trend cycle; estimates.

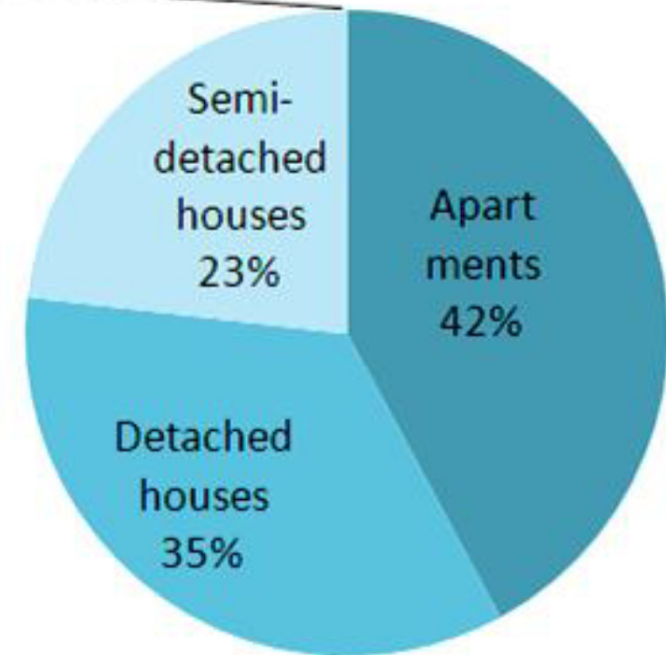
Source: Eurostat (online data code: sts_copr_m)



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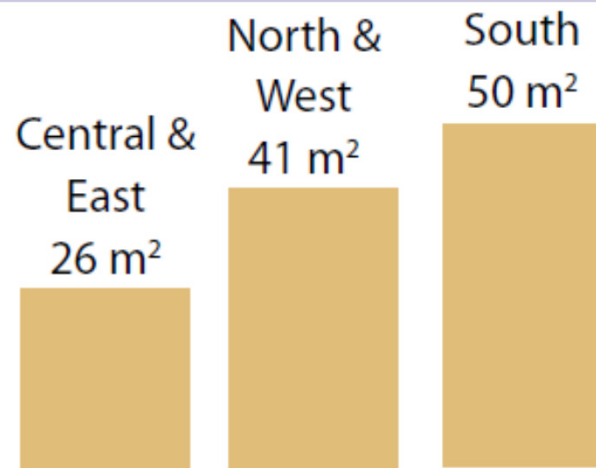
Building stock (m2)



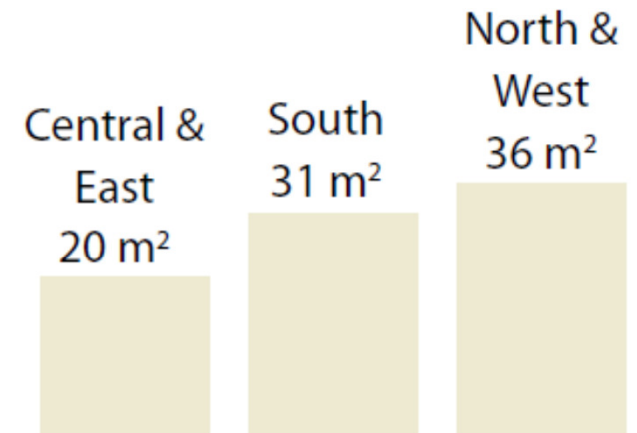
Percentage of EU population living in different residential buildings



REHABILITATION AND ENERGY EFFICIENCY



Single family house floor space per capita



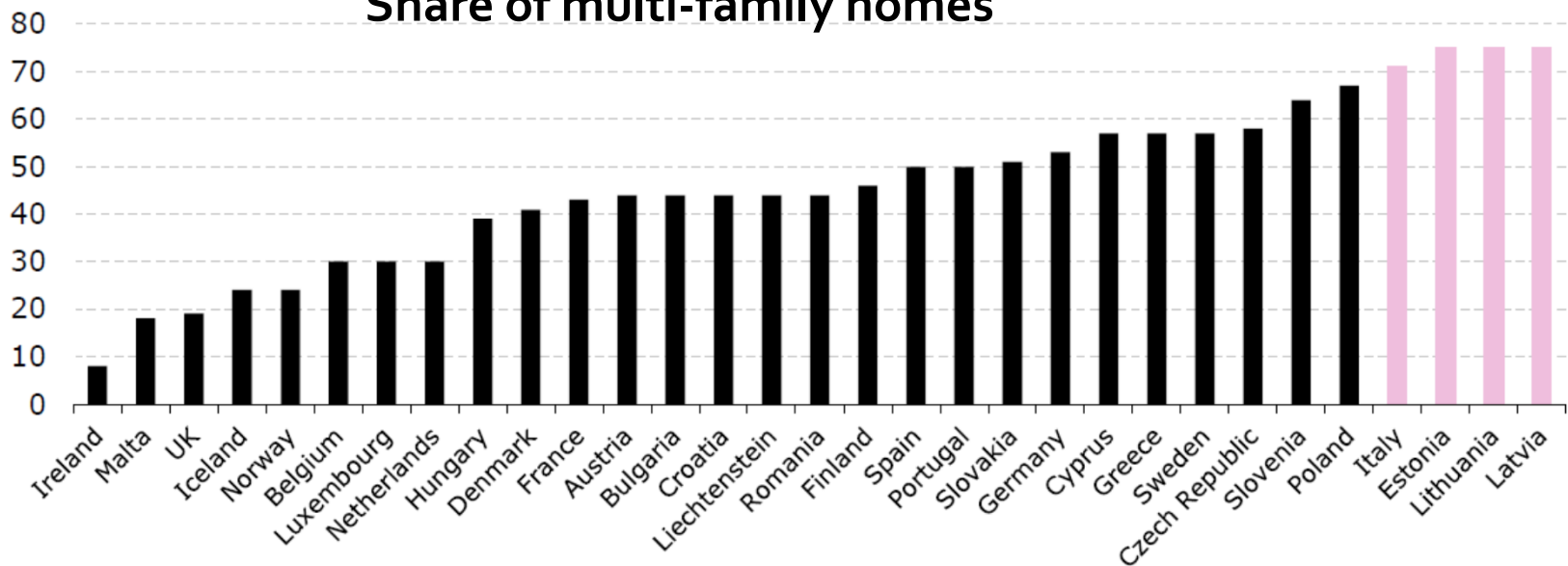
Apartment floor space per capita



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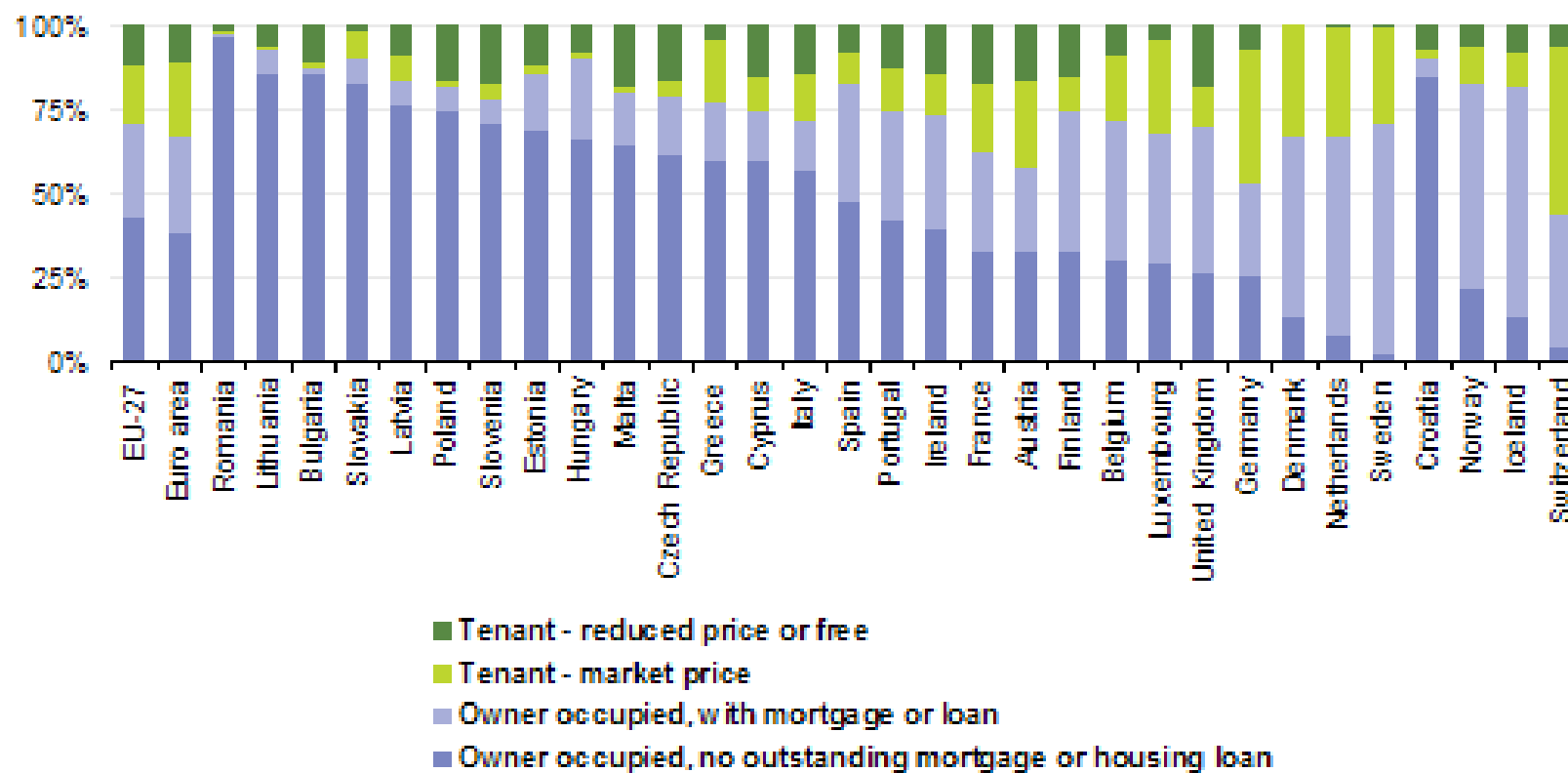
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Share of multi-family homes





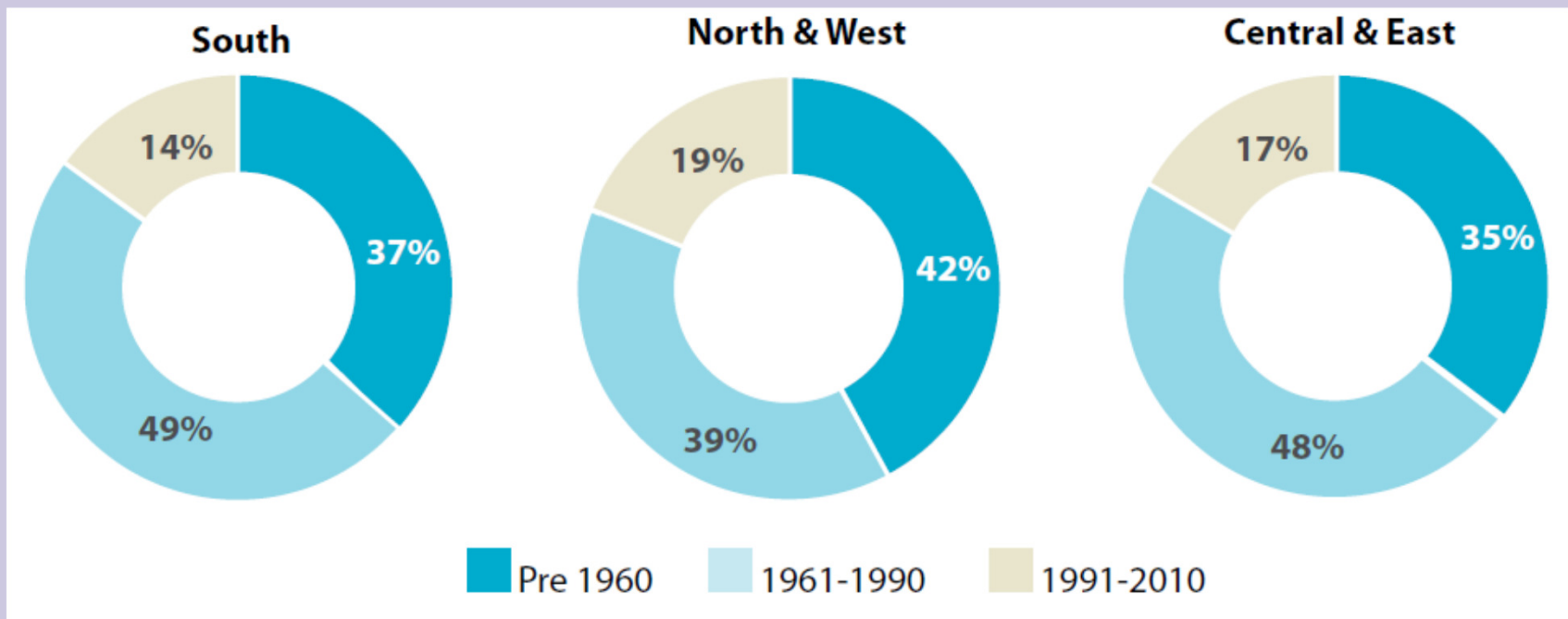
REHABILITATION AND ENERGY EFFICIENCY



Source: Eurostat (online data code: ilo_lvh002)



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Age profile of residential floor space



REHABILITATION AND ENERGY EFFICIENCY

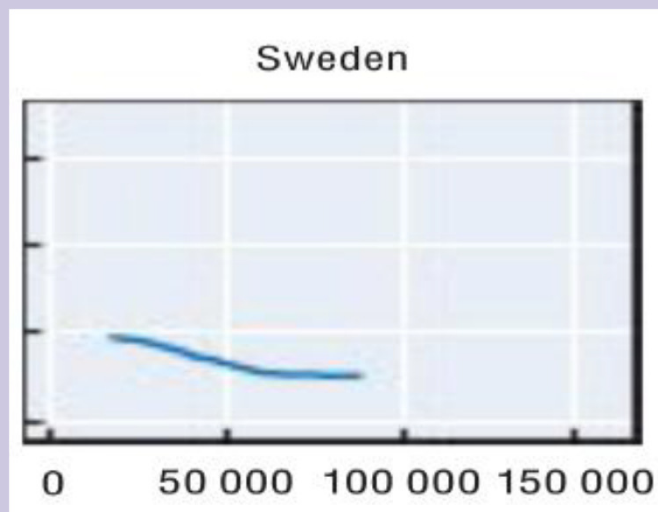
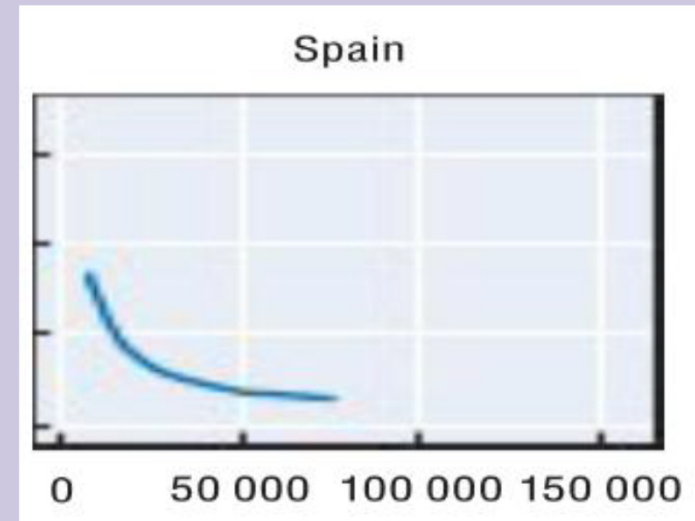
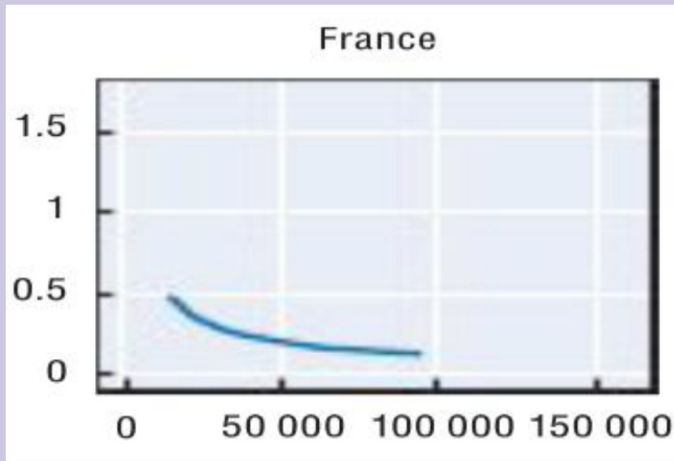
Indicator	2010	2020	2030	2040	2050
Population (million)	497	508	512	512	508
GDP (billion 2010 USD at PPP)	18 637	23 660	29 335	36 027	42 948
Per-capita income (USD GDP/capita)	37 494	46 615	57 240	70 353	84 472
Services floor area (million m ²)	8 096	9 039	10 107	10 571	11 007
Residential floor area (million m ²)	20 063	21 714	23 173	24 264	25 087
Number of households (million)	210	224	235	240	242
Occupancy rate (people per household)	2.4	2.3	2.2	2.1	2.1
Average house size (m ² /house)	95.7	97.0	98.8	101.0	103.5

Notes: GDP = gross domestic product, USD = United States dollar, PPP = purchasing power parity, m² = square metre.

Sources: UN DESA (2011) for population; IEA (2012) for GDP; other data from IEA analysis.



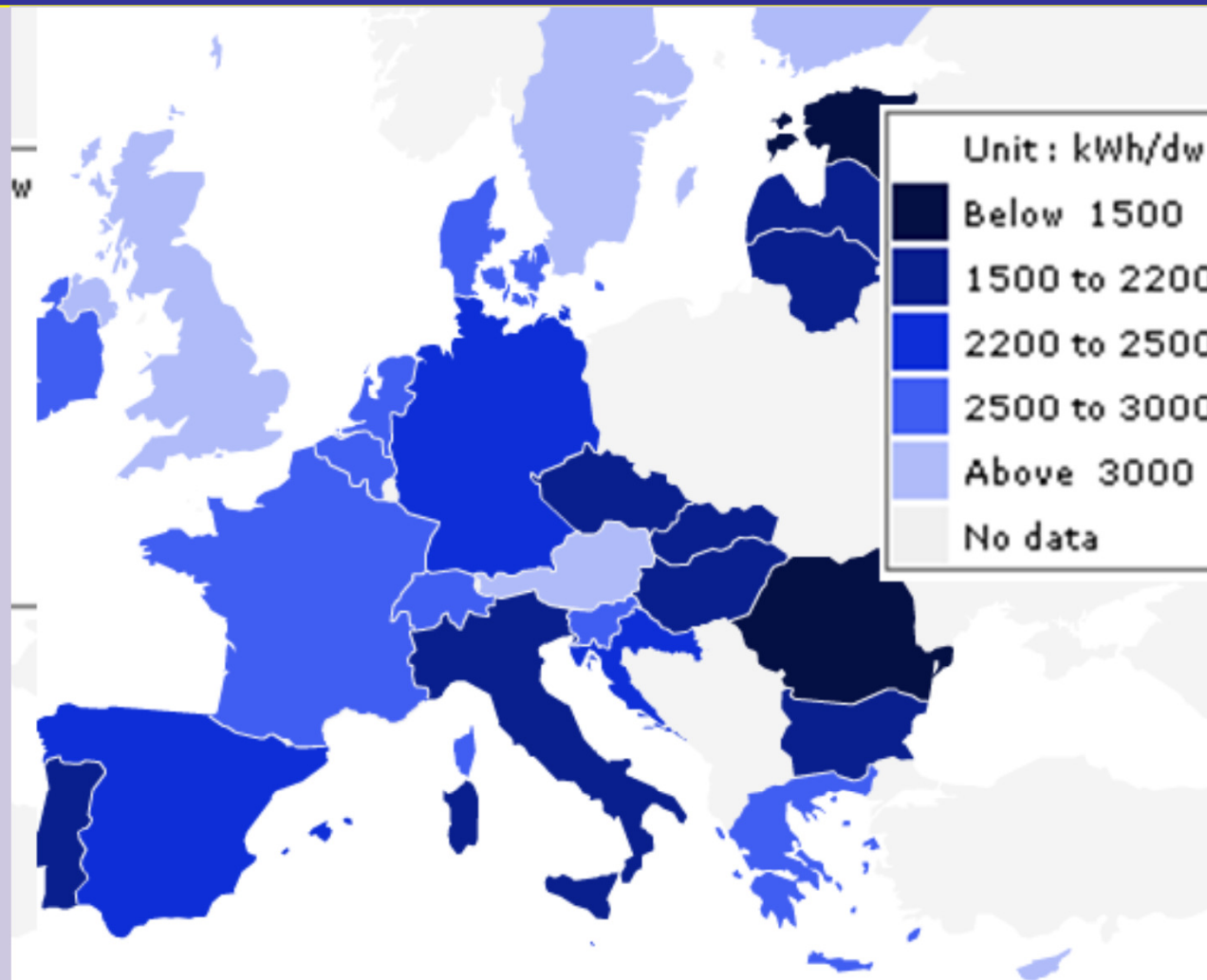
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Share of electricity costs in household income (vertical axis) and annual household income (horizontal axis)



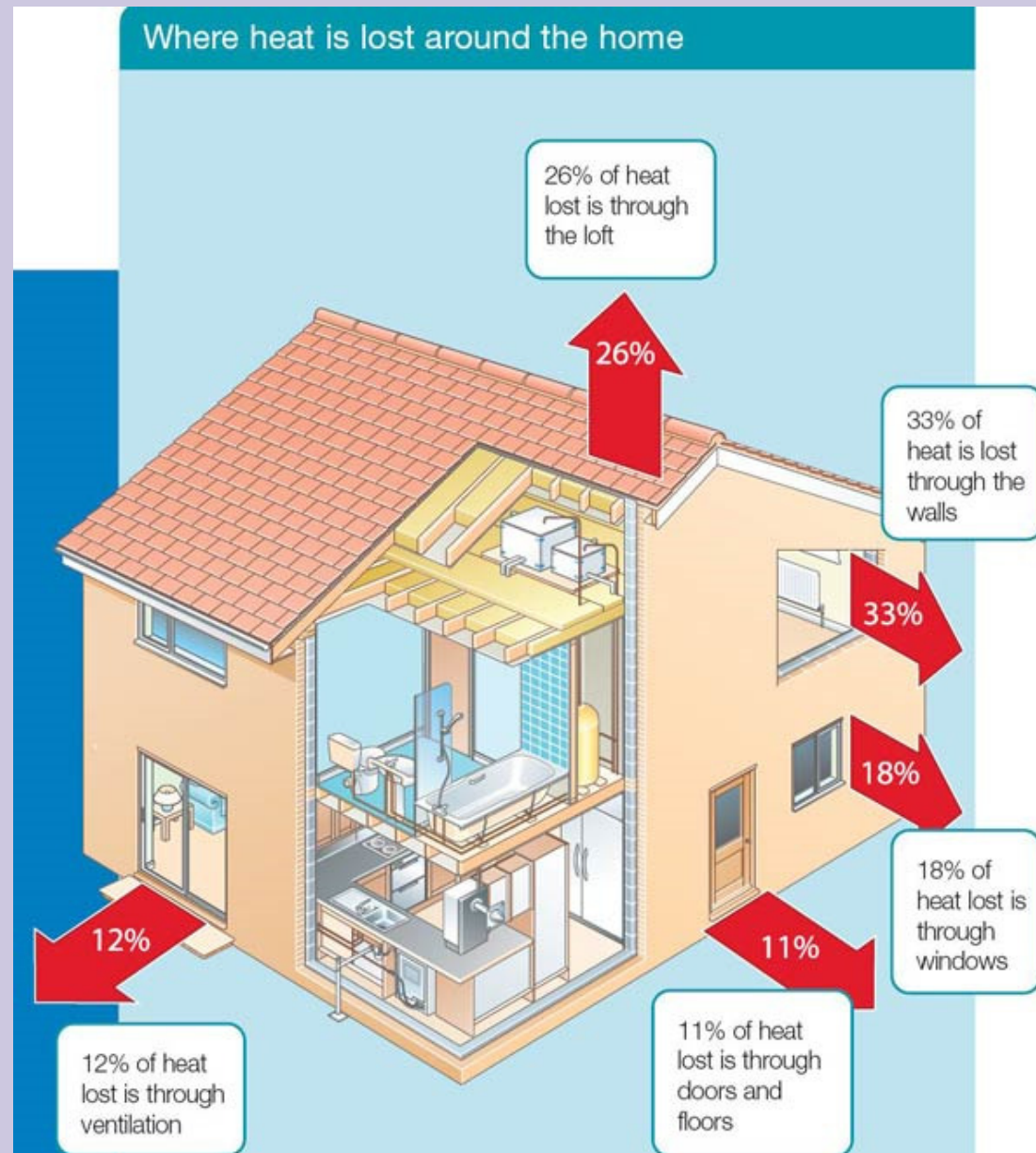
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Electricity consumption per dwelling for
lighting and electric appliances

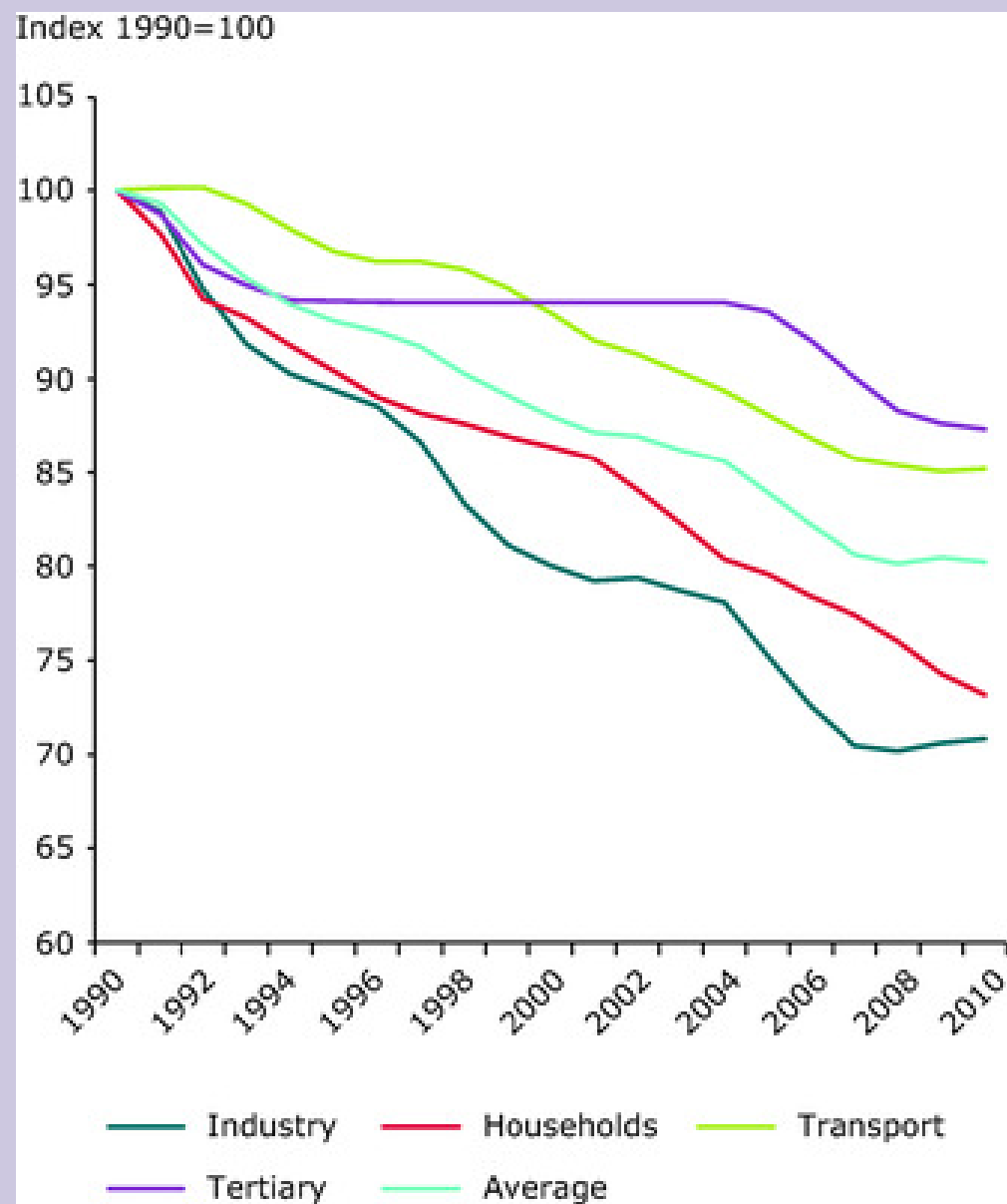


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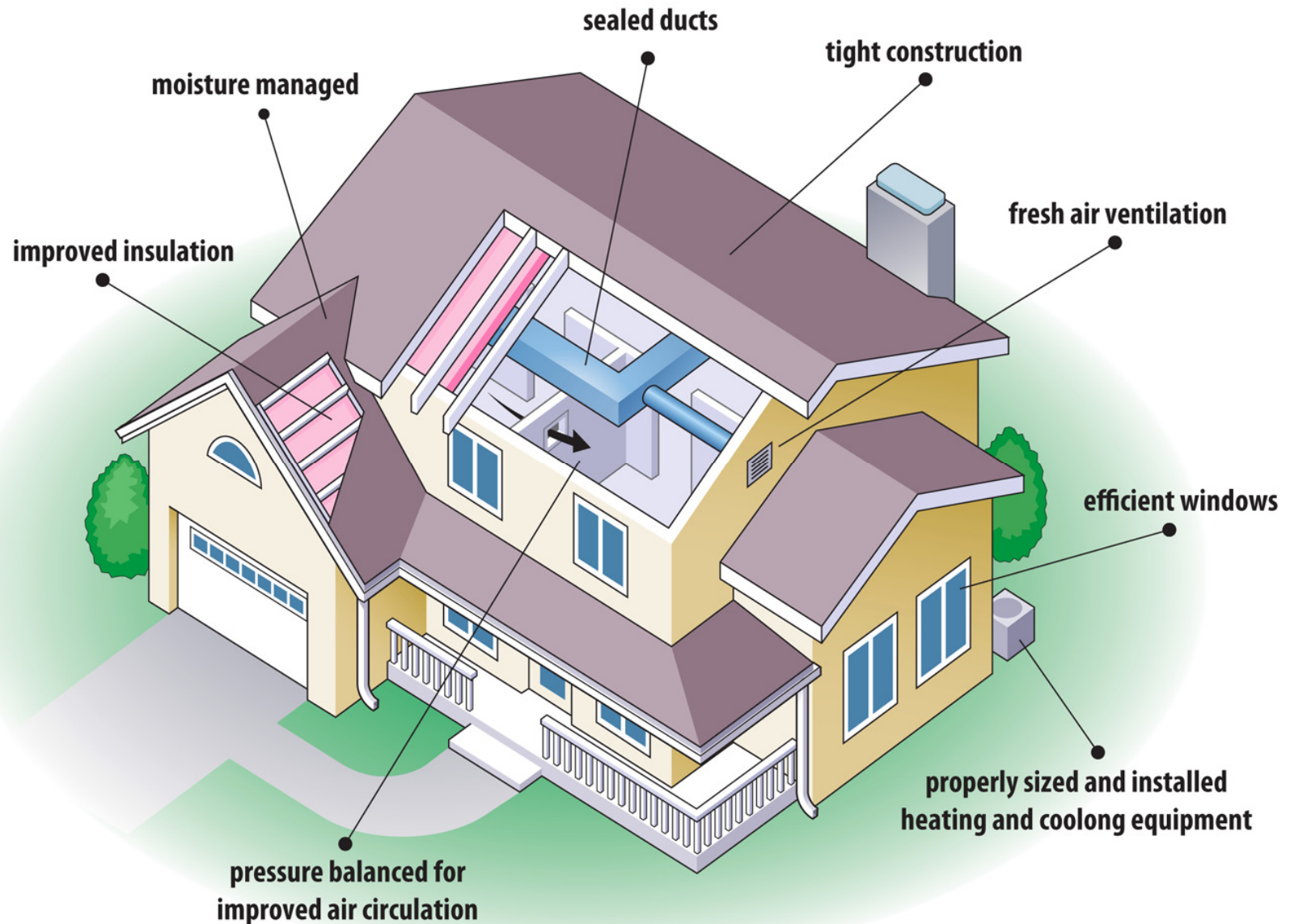


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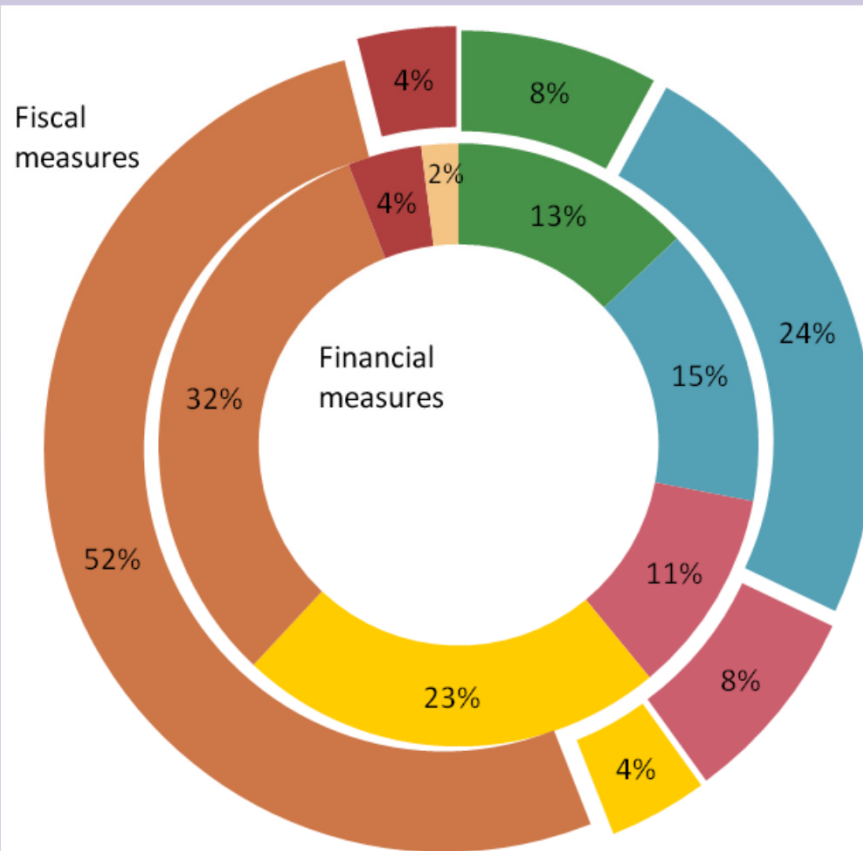


REHABILITATION AND ENERGY EFFICIENCY





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Measures to improve the performance of buildings covered by each fiscal / financial measure:

- Envelope: insulation, windows&glazing, exterior wall, doors, ceiling...
- Equipment: efficient heating, efficient lighting systems, ventilation, cooling, control systems...
- Other: energy audits, consultancy costs, labour costs, education, training activities...
- Envelope, equipment and other
- Envelope and equipment
- Envelope and other
- Equipment and other



REHABILITATION AND ENERGY EFFICIENCY

	Energy Savings	Implied Emissions Reductions	Other Material Improvements
Building Owners	1 Connect Building Energy Performance to Property Value and Establish Transparent Standards	0 Add Emissions Dimension to Energy Performance and Establish Transparent Standards	2 Material Improvements to Building Quality impact Building Value and Marketability
Building Occupiers	2 Reduce the Risk of Retrofit Energy Performance and Lower Cost of Funds	1 Introduce White Certificate Programmes to Prioritize EE Retrofits	2 Material Improvements Make Building Occupancy More Appealing
Banks	1 Improve Access to Low-Cost Financing and Engage as Distribution Channel for Retrofits	0 Make Emissions Reductions an Additional Source of Cashflow to Retrofit	1 Material Improvements Increase Building Value as Collateral
Refurbishment Contractor	1 Capacity Building, Quality Standards, Accreditation and Energy Performance Based Contracting	0 Place a Value on Emissions Reductions and Integrate into Refurbishment Activity	2 More Other Material Improvement Increases the Scope and Size of the Refurbishment Work
Energy Suppliers	0 Improve Access to Low-Cost Financing and Engage as Distribution Channel for Retrofits	1 White Certificate Programs and Placing a Realizable Value on Emissions Reductions	0 Potential to Stimulate Longer-term Customer Engagement



REHABILITATION AND ENERGY EFFICIENCY



**National plans for
Nearly Zero-Energy Buildings
(nZEBs)
are due for all Member
States by April 2014.**



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END

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Life Quality and a Sustainable Environment”



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