

Building on buildings in climate change action: have the cake and eat it too?

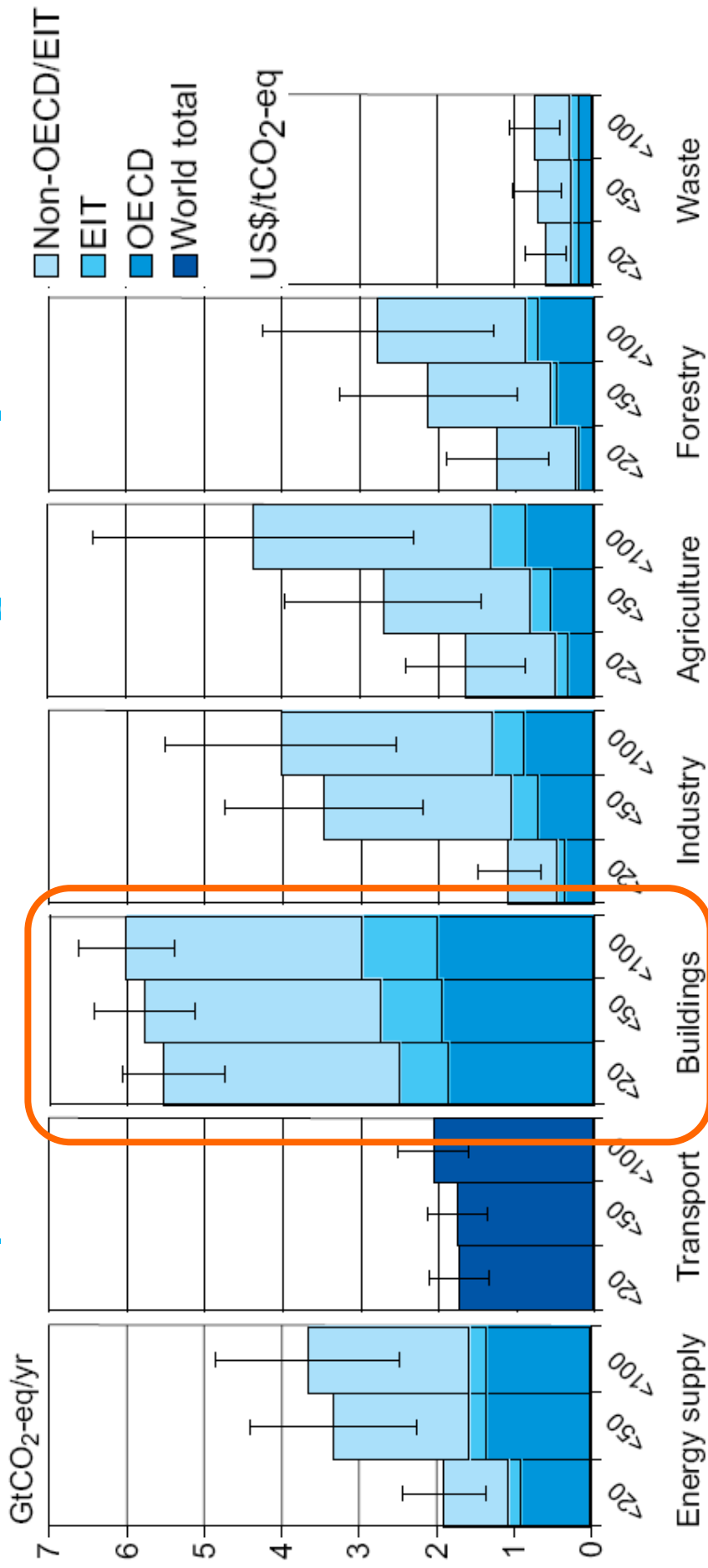
CENTER FOR CLIMATE CHANGE
AND SUSTAINABLE ENERGY POLICY



CENTRAL EUROPEAN UNIVERSITY

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IPCC: The buildings sector offers the largest low-cost potential in all world regions by 2030



Sector	(potential at <US\$100/ tCO ₂ -eq: 2.4 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 1.6 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 5.3 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 2.5 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 2.3 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 1.3 eq/yr)	(potential at <US\$100/ tCO ₂ -eq: 0.4 eq/yr)
Energy supply	- 4.7 Gt CO ₂ -eq/yr	- 2.5 Gt CO ₂ -eq/yr	- 6.7 Gt CO ₂ -eq/yr	- 5.5 Gt CO ₂ -eq/yr	- 6.4 Gt CO ₂ -eq/yr	- 4.2 Gt CO ₂ -eq/yr	- 1 Gt CO ₂ -eq/yr
Transport							
Buildings							
Industry							
Agriculture							
Forestry							
Waste							

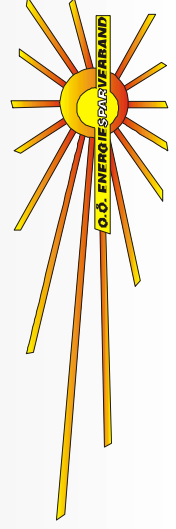
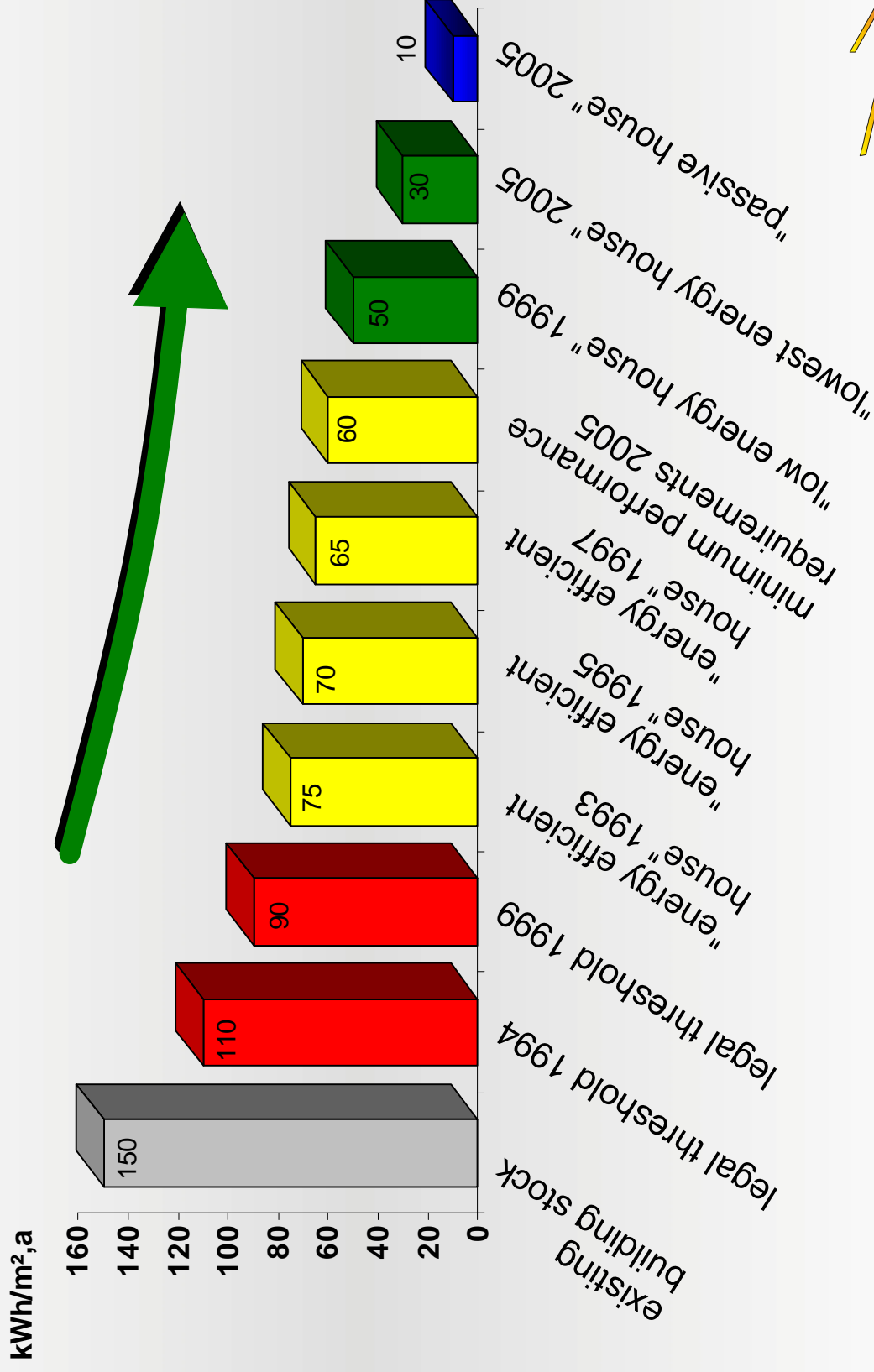


Buildings utilising passive solar construction the start of a building transition?



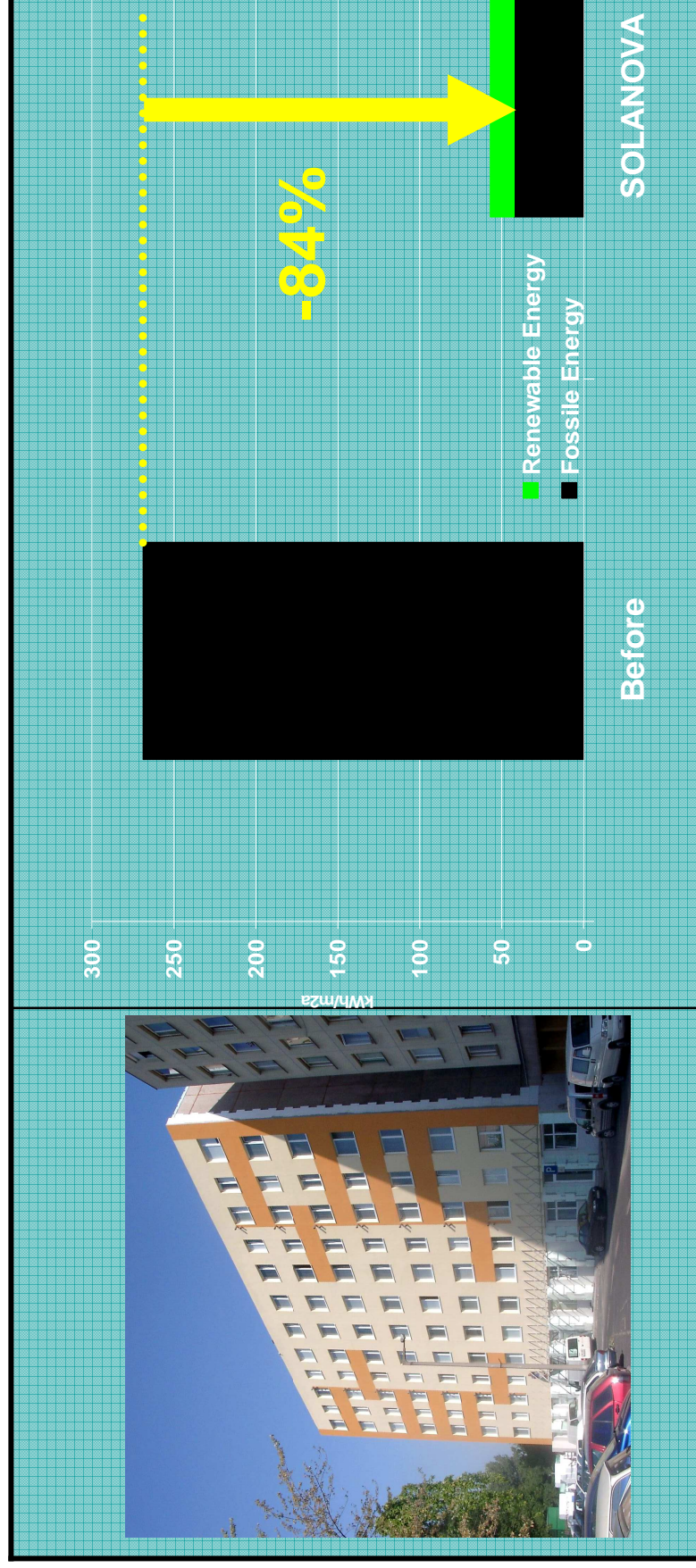
-90%

The start of a revolution (2)? Building Trends in Upper Austria



Source: Christine Egan

Saving 3/4 of the energy costs for Eastern European households?



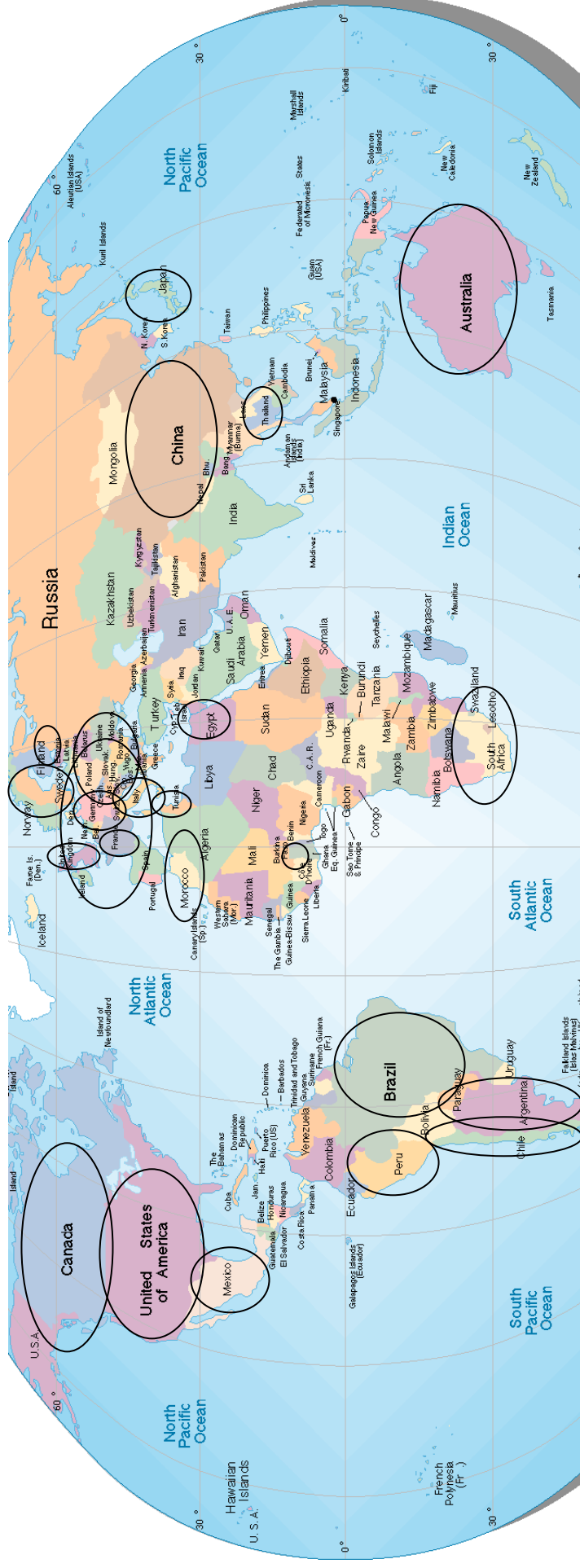
More on Solanova: www.solanova.eu



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Many countries are saving GHGs at a net profit through buildings policies

- ❖ Over 80 policy evaluations reviewed from over 52 countries
- ❖ Appliance standards at costs as low as -192 to -56 \$/tCO₂
- ❖ Building codes: - 180 \$/tCO₂ to - 5 \$/tCO₂,
- ❖ Energy efficiency obligations: -216\$/tCO₂ to -139 \$/tCO₂





A private industry vision:

*“A world where buildings
consume zero net energy”*



World Business Council for
Sustainable Development

“Our target is all buildings, everywhere

The EEB project will map out the transition to a 2050 world in which buildings use **zero net energy**.

They must also be aesthetically pleasing and meet other sustainability criteria, especially for air quality, water use and economic viability.”



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Thank you for your attention

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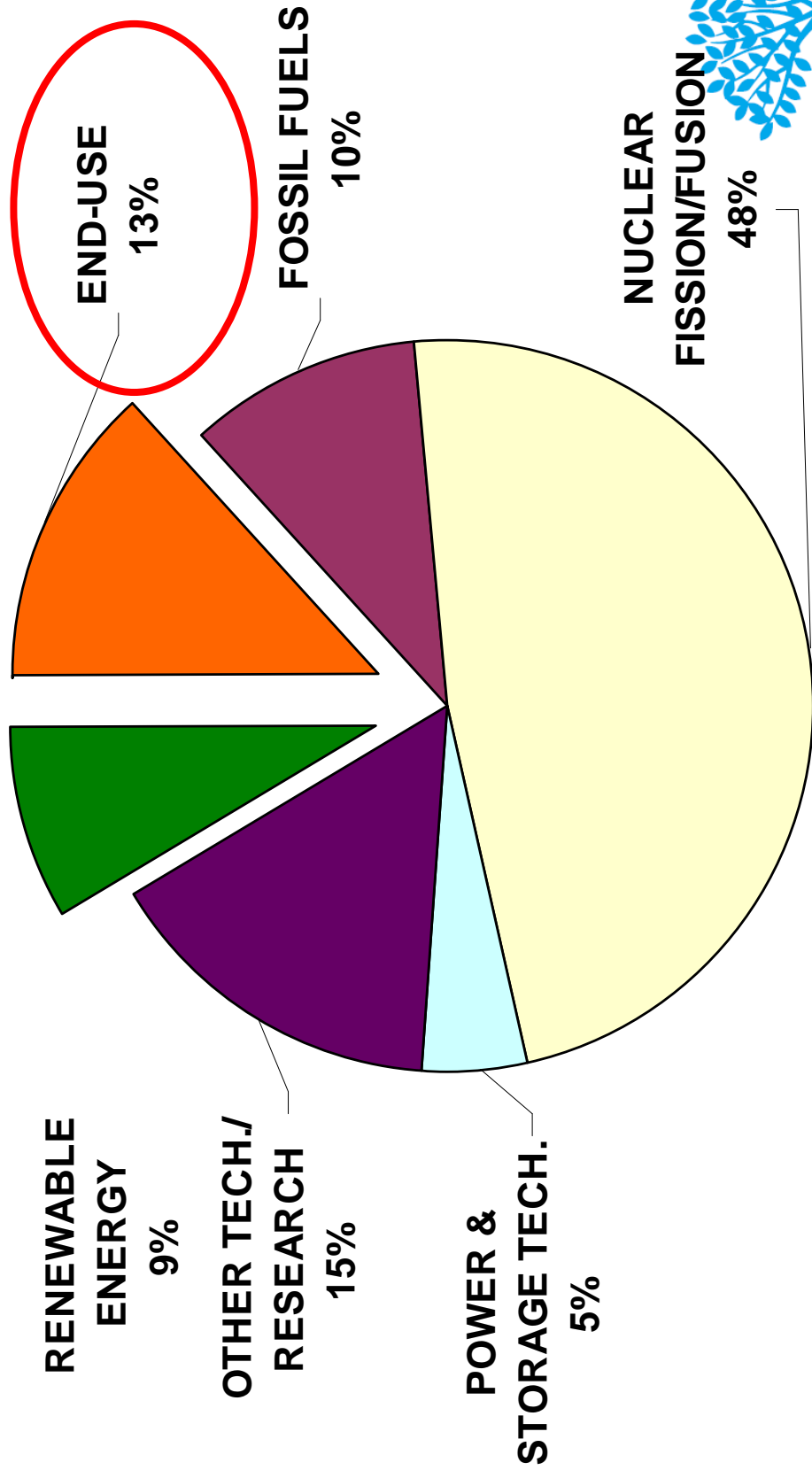
Diana Ürge-Vorsatz

<http://3csep.ceu.hu>

www.globalenergyassessment.org

Needs in RD&D: Can Our Present Spending Take Us Where We Need to Be?

OECD PUBLIC ENERGY RD&D SPENDING, 1992 - 2004



Source: IEA Statistics 2005

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Buildings as the pillars of a low-carbon future

Reconstruction from Germany

Before reconstruction



over 150 kWh/(m²a)



Reconstruction according to the passive house principle



15 kWh/(m²a)

-90%



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Co-benefits

- ❖ Many individual co-benefits amount to 20-43% of saved energy costs
- ❖ Largest financial value of NEBs as compared to the direct benefits – economic benefits estimated over the lifetime of a complex weatherization measures
- ❖ At least 9 groups of researchers monetize the value of single NEBs in the range of tens – hundreds of million EUR/yr in different countries, occasionally reaching billions
- ❖ corresponding to a few % of national GDPs

