

Climate Change Policy: Cost Effective Strategies for the U.S. and the World

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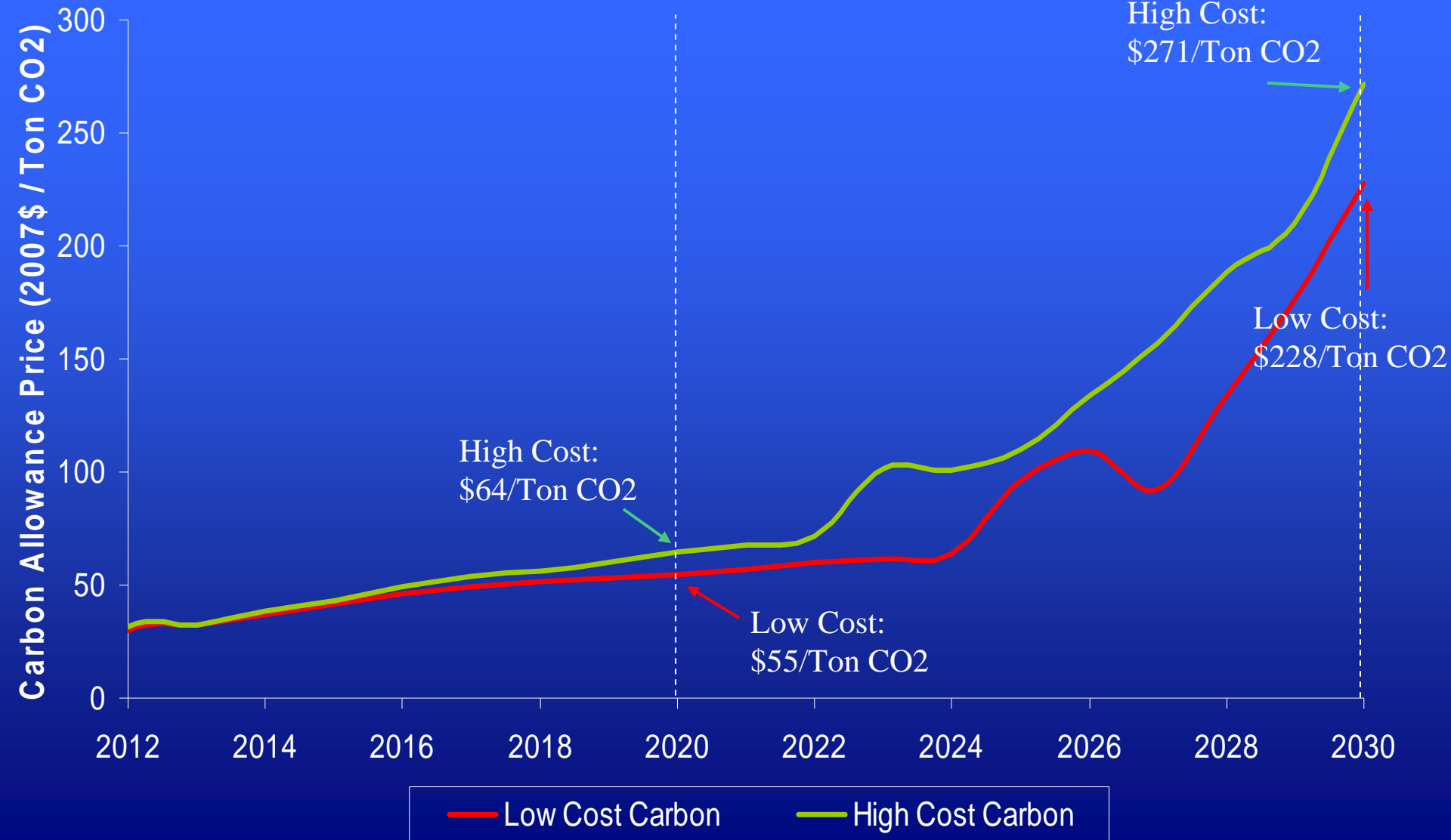
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Impact of Lieberman-Warner Bill on the United States Compared to Baseline Forecast

	Low Cost Case			High Cost Case		
	2014	2020	2030	2014	2020	2030
Loss in GDP	-0.8%	-0.8%	-2.6%	-1.6%	-1.1%	-2.7%
Loss in Jobs (millions)	-0.85	-1.22	-3.04	-1.86	-1.80	-4.05
Loss in Household Income (2007\$)	-\$1,010	-\$739	-\$4,022	-\$2,779	-\$2,927	-\$6,752

Macroeconomic Impact of Lieberman-Warner Bill: Carbon Allowance Price (2007\$/Ton CO₂)



Impact of Lieberman-Warner Bill on the United States: Change in Energy Prices Compared to Baseline Forecast

	Low Cost Case			High Cost Case		
	2014	2020	2030	2014	2020	2030
Rise in Gasoline Prices	13%	20%	77%	50%	69%	145%
Rise in Residential Electricity Prices	13%	28%	101%	14%	33%	129%
Rise in Industrial Electricity Prices	22%	41%	142%	23%	49%	185%
Rise in Industrial Natural Gas Prices	36%	49%	180%	40%	66%	244%

Environmental Impact of Lieberman Warner Bill

- **U.S. EPA analysis of McCain Lieberman bill(S.280) shows :**
 - ❖ **If U.S .adopts S.280 emission caps and no other countries adopt emission caps, then global CO2 concentrations are 23 ppm lower in 2095 than under reference scenario**
 - ❖ **Global concentrations of CO2 would be 3 % less in under S.280 without international participation**

- **Lieberman Warner(S.2191) targets are estimated to be about 25 % tighter in the long run than McCain Lieberman**
 - ❖ **If U.S. adopts S.2191 and no other countries adopt emission caps, then global CO2 concentrations are about 29 ppm lower in 2095 than under the reference scenario**
 - ❖ **Global concentrations of CO2 would be about 4% less under S.2191 without international participation**

Macroeconomic Impact of Lieberman-Warner Bill:

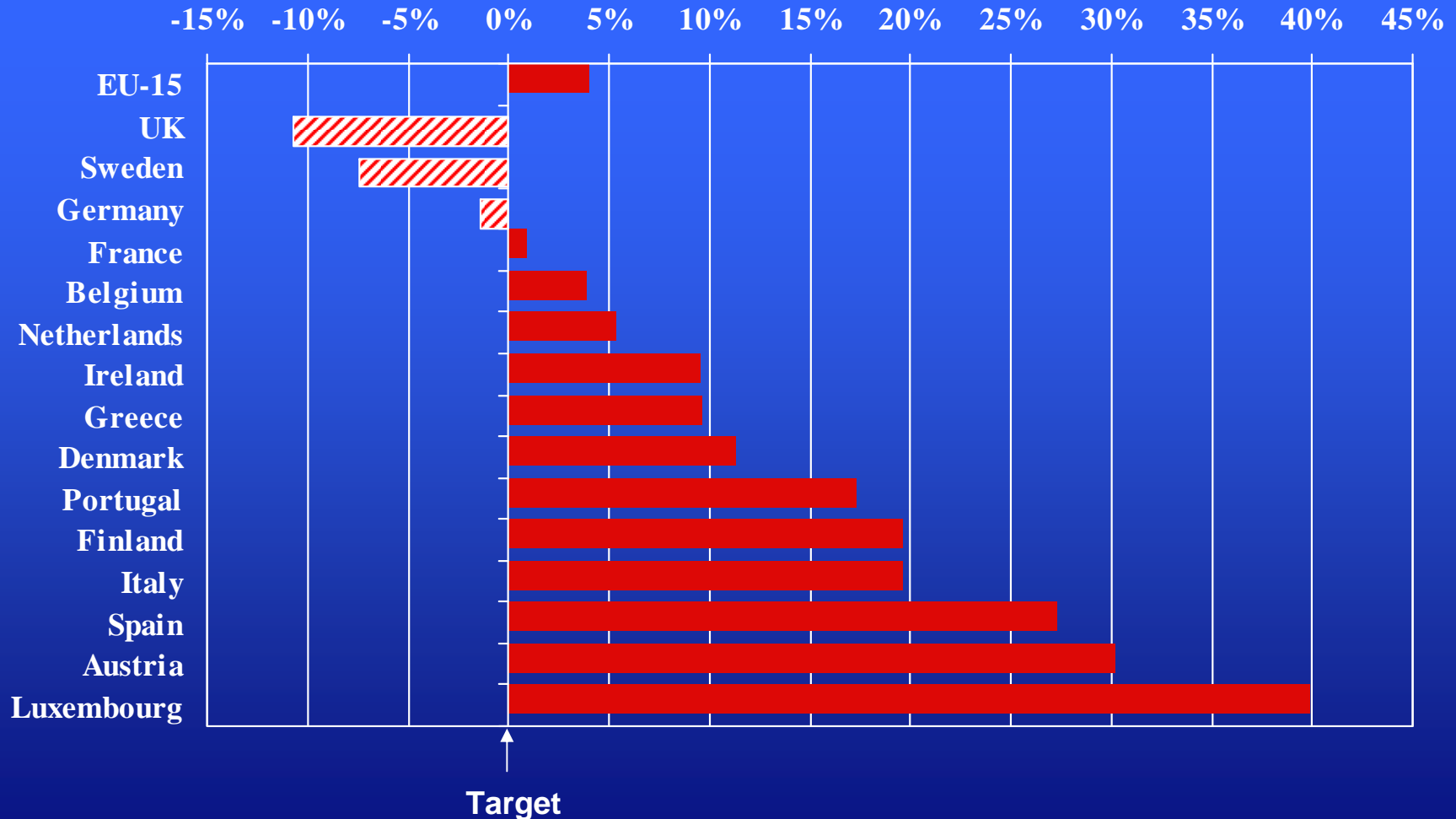
Changes in Pennsylvania Economy Compared to Baseline Forecast

	Low Cost Case		High Cost Case	
	2020	2030	2020	2030
Loss in GSP (million 2007\$)	-\$6,100	-\$22,496	-\$8,453	-\$26,561
Loss in Jobs	-44,000	-104,000	-66,000	-139,000
Loss in Household Income (2007\$)	-\$1,018	-\$4,314	-\$3,299	-\$7,866

Macroeconomic Impact of Lieberman-Warner Bill: Change in Energy Prices in Pennsylvania Compared to Baseline Forecast

	Low Cost Case		High Cost Case	
	2020	2030	2020	2030
Rise in Gasoline Prices	20%	74%	66%	143%
Rise in Residential Electricity Prices	22%	78%	26%	113%
Rise in Residential Natural Gas Prices	23%	93%	32%	133%

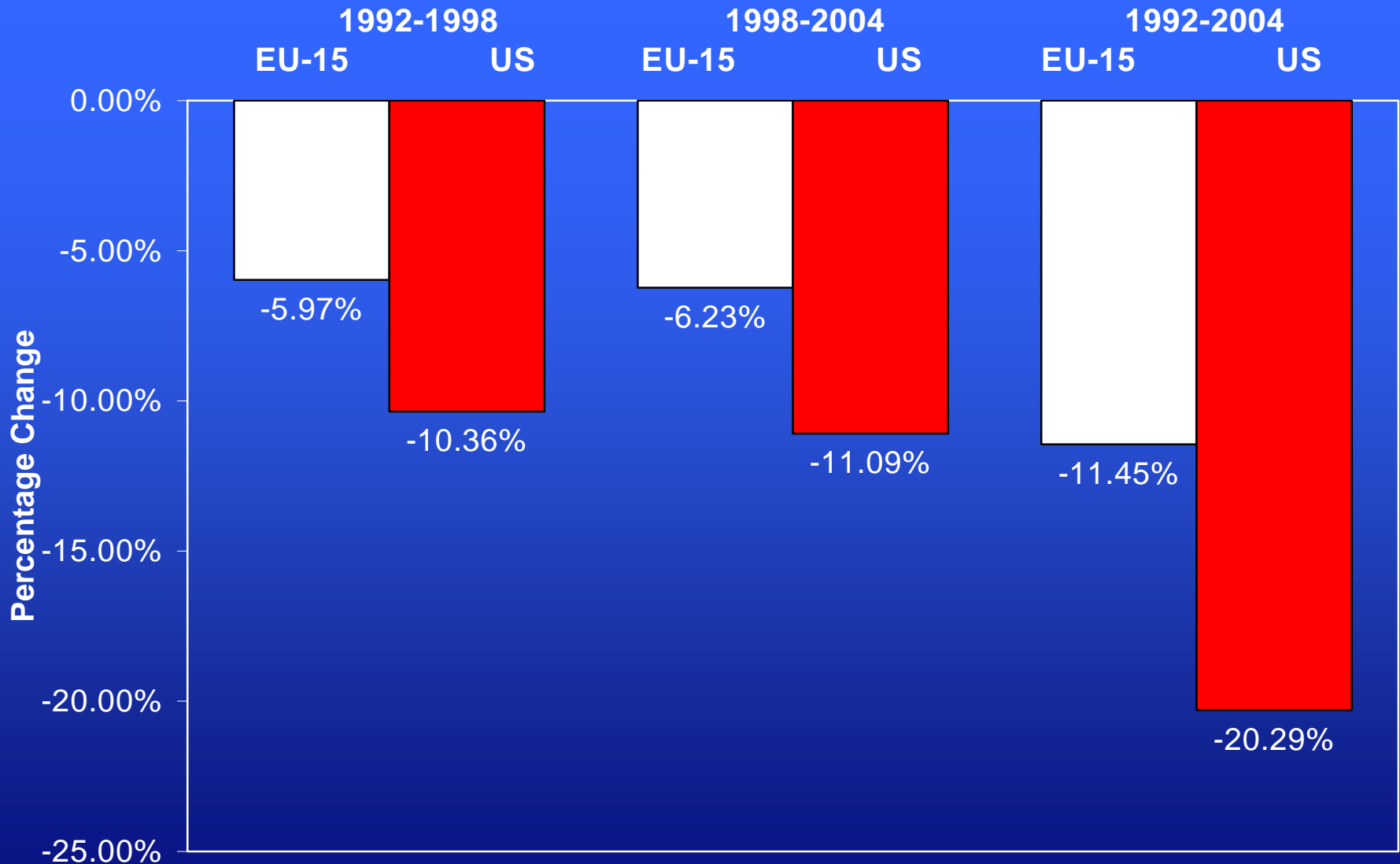
Greenhouse Gas Emissions in the European Union: Gap Between Projections* and Kyoto Targets in 2010



* Projections assume existing measures already in place.

Source: European Environmental Agency, November 2007.

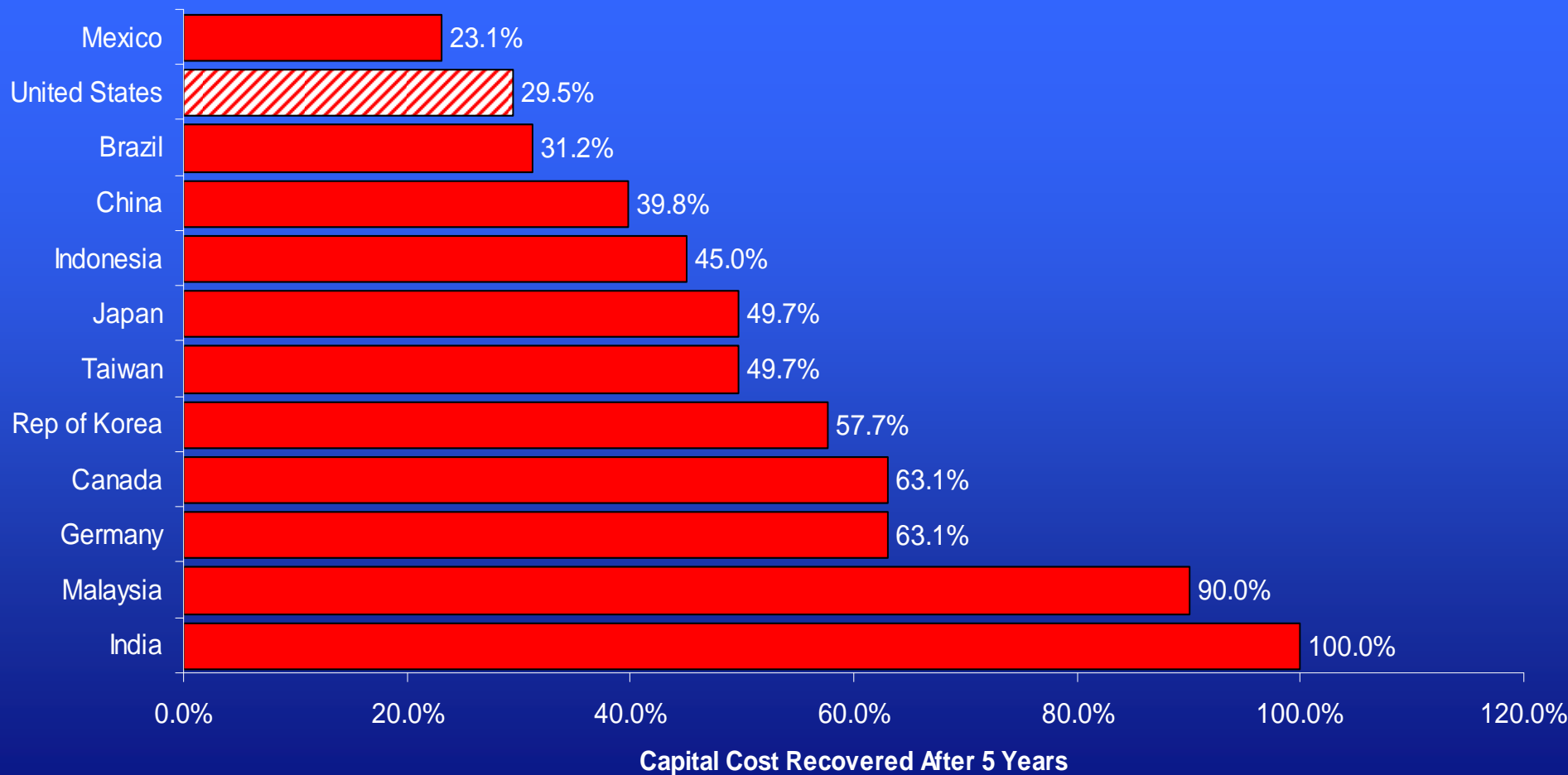
Comparison of EU and US Energy Intensity Reduction 1992-2004



Source: U.S. Department of Energy, EIA, International Energy Annual 2004

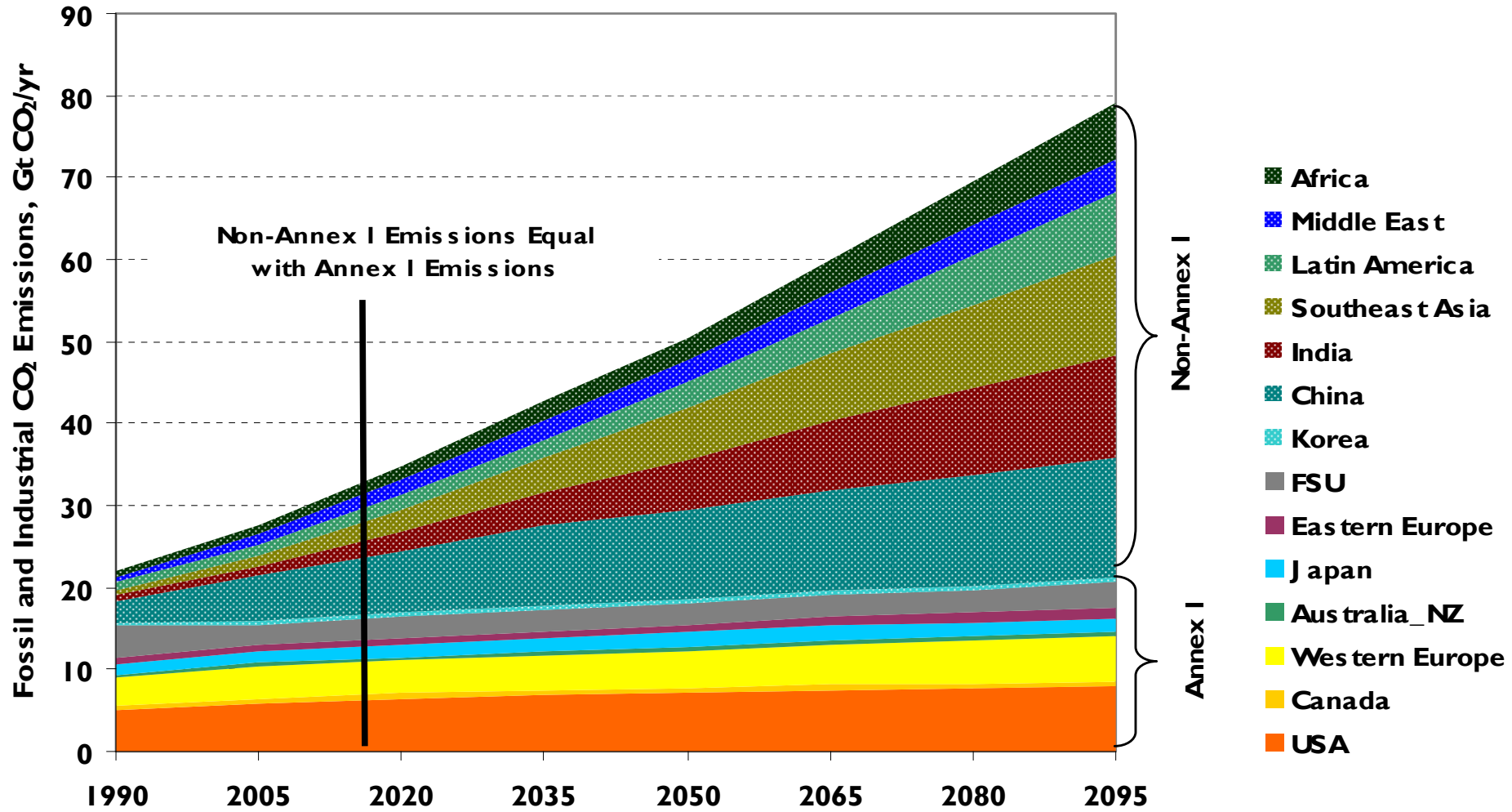
U.S. Capital Cost Recovery for Smart Meters Compares Poorly with Our Trading Partners

(Percent of Nominal Capital Cost Recovered After 5 Years)



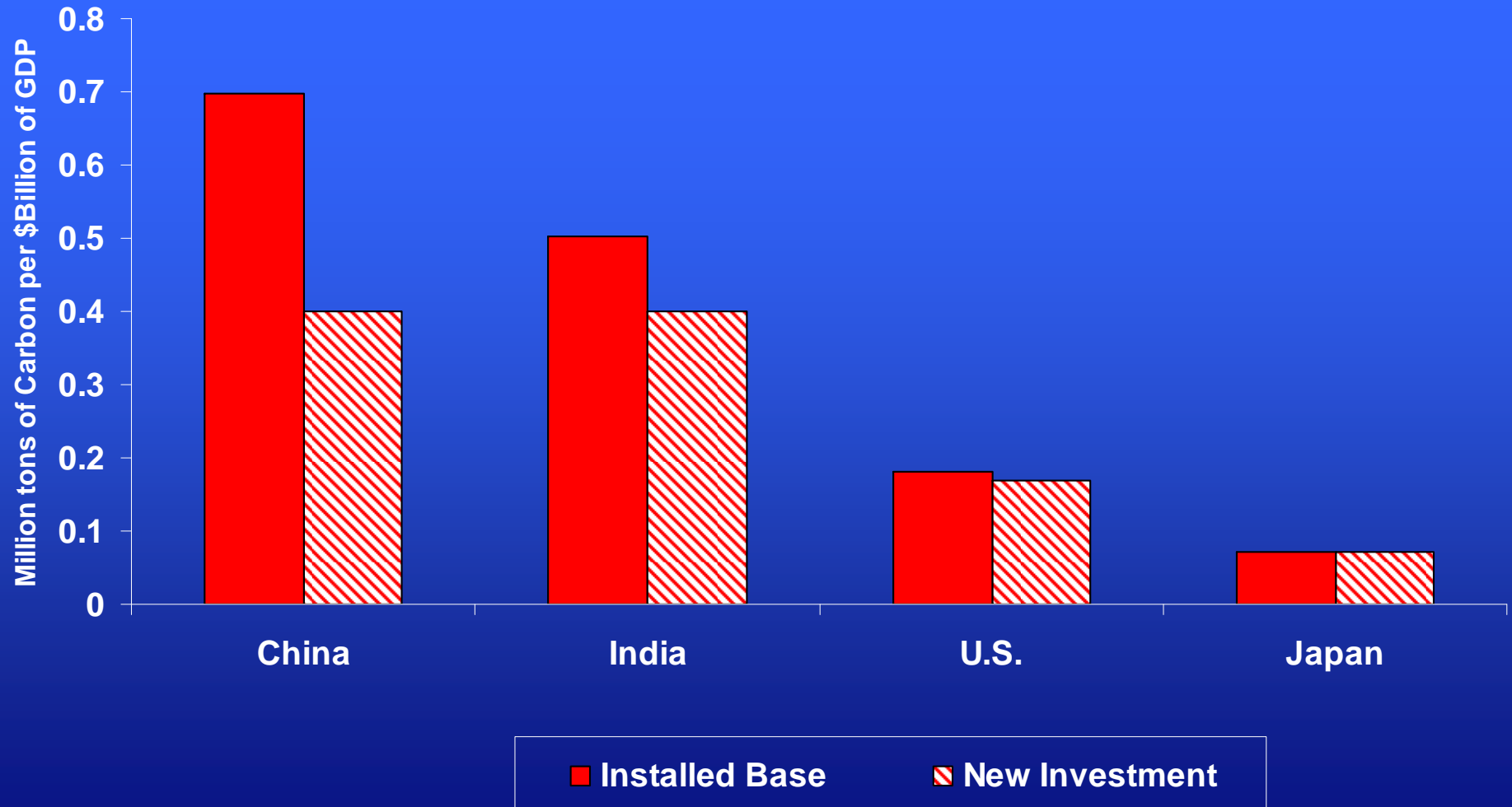
Source: "International Comparison of Depreciation Rules and Tax Rates for Selected Energy Investments," prepared for the American Council for Capital Formation by Ernst & Young LLP, May 2007. For full report, please see www.accf.org.

World Carbon Dioxide Emissions



Source: Data derived from *Global Energy Technology Strategy, Addressing Climate Change: Phase 2 Findings from an International Public-Private Sponsored Research Program*, Battelle Memorial Institute, 2007.

Greenhouse Gas Emissions Associated with Existing and New Investment in 2001 (Million tons of Carbon per \$Billion of GDP)



Source: *Promoting a Positive Climate for Investment, Economic Growth and Greenhouse Gas Reductions*, W. David Montgomery and Sugandha Tuladhar (see www.iccglobal.org)

Practical Strategies for Reducing Global Greenhouse Gas Growth

- **Use cost / benefit analysis before adopting policies**
- **Reduce cost of U.S. energy investment through tax code improvement and incentives for non profits**
- **Remove barriers to developing world's access to more energy and cleaner technology by promoting economic freedom and market reforms**
- **Increase R&D for new technologies to reduce energy intensity, capture and store carbon, and develop new energy sources**
- **Promote nuclear power for electricity**
- **Promote truly global solutions and consider expanding the Asia Pacific Partnership on Development with its focus on economic growth and technology transfer to other major emitters**