

# The Green New Deal

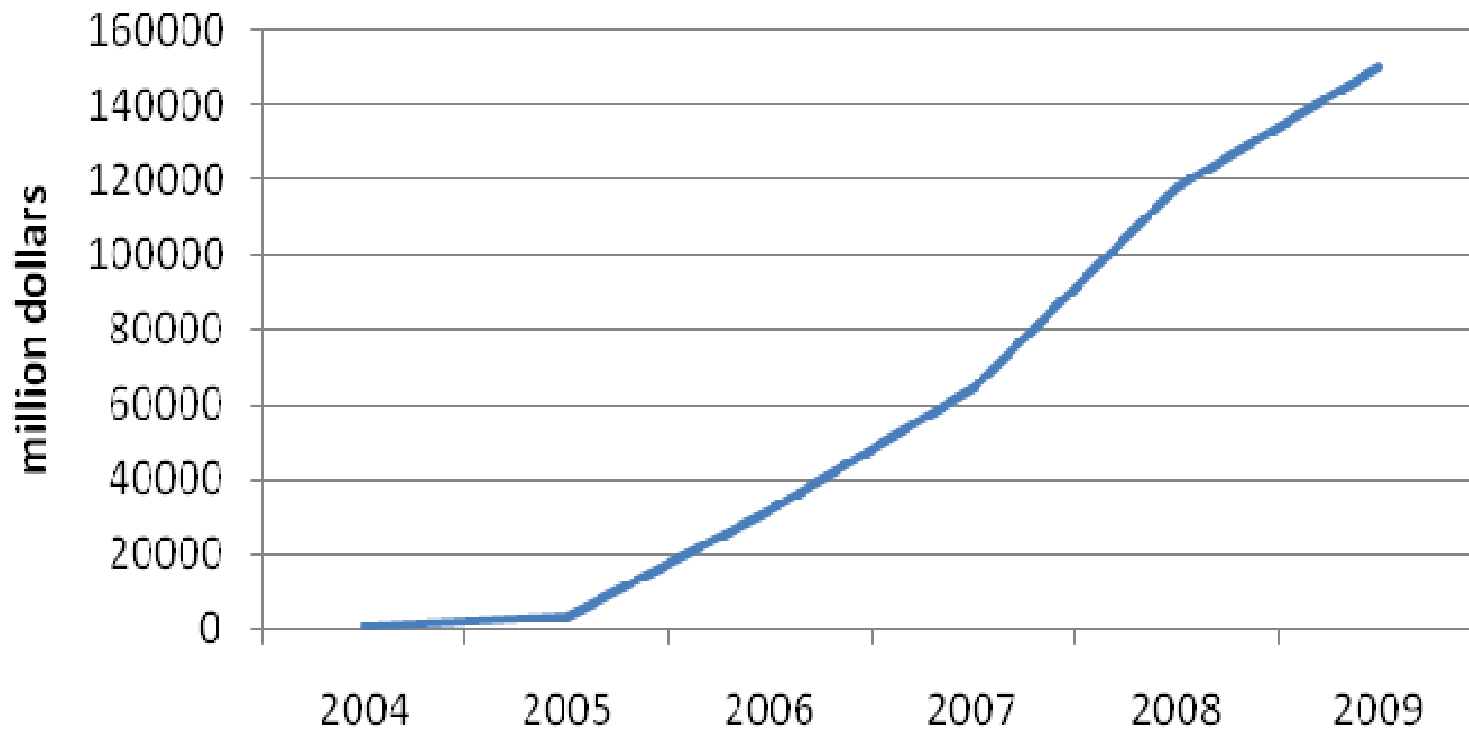
## Can Economic Crisis Spark a Global Sustainability Revolution?



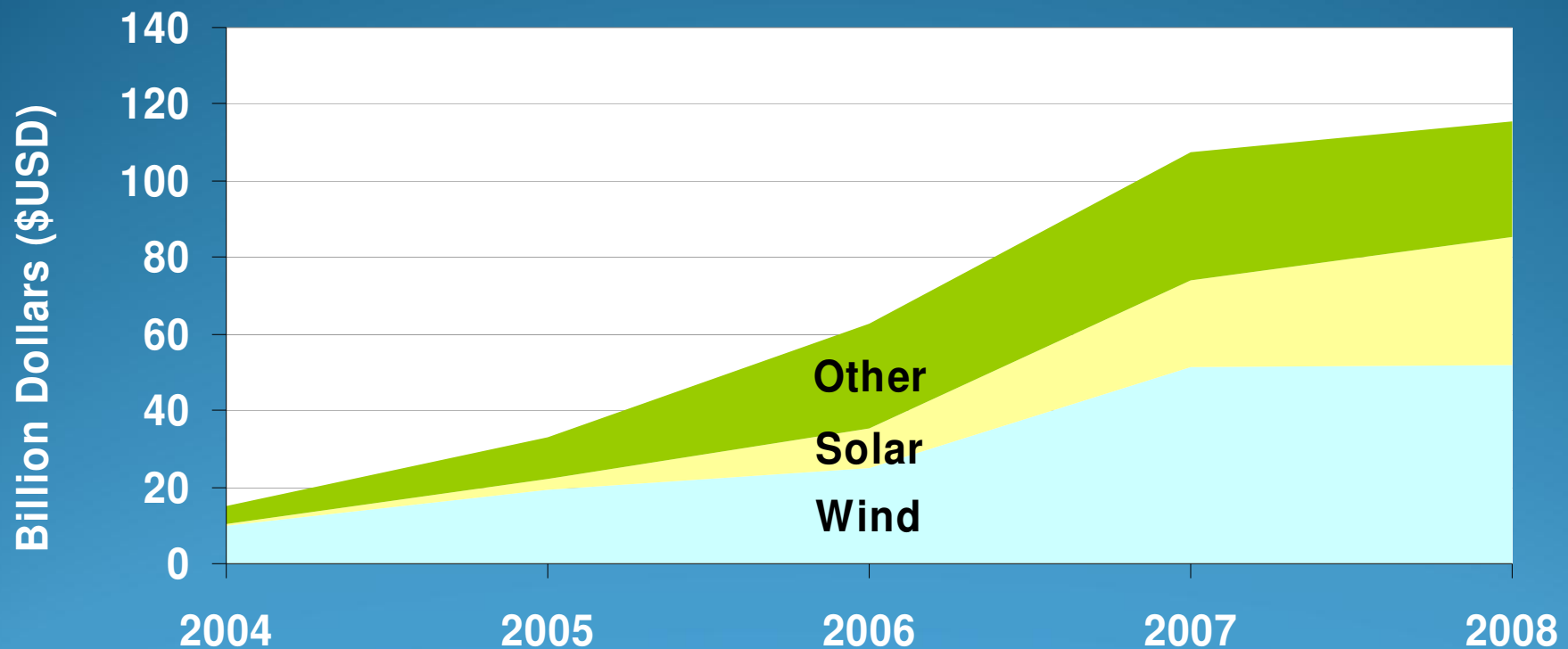
Christopher Flavin  
Worldwatch Institute

Ecomondo - Keyenergy

## Value of Major Carbon Markets, 2004-2009

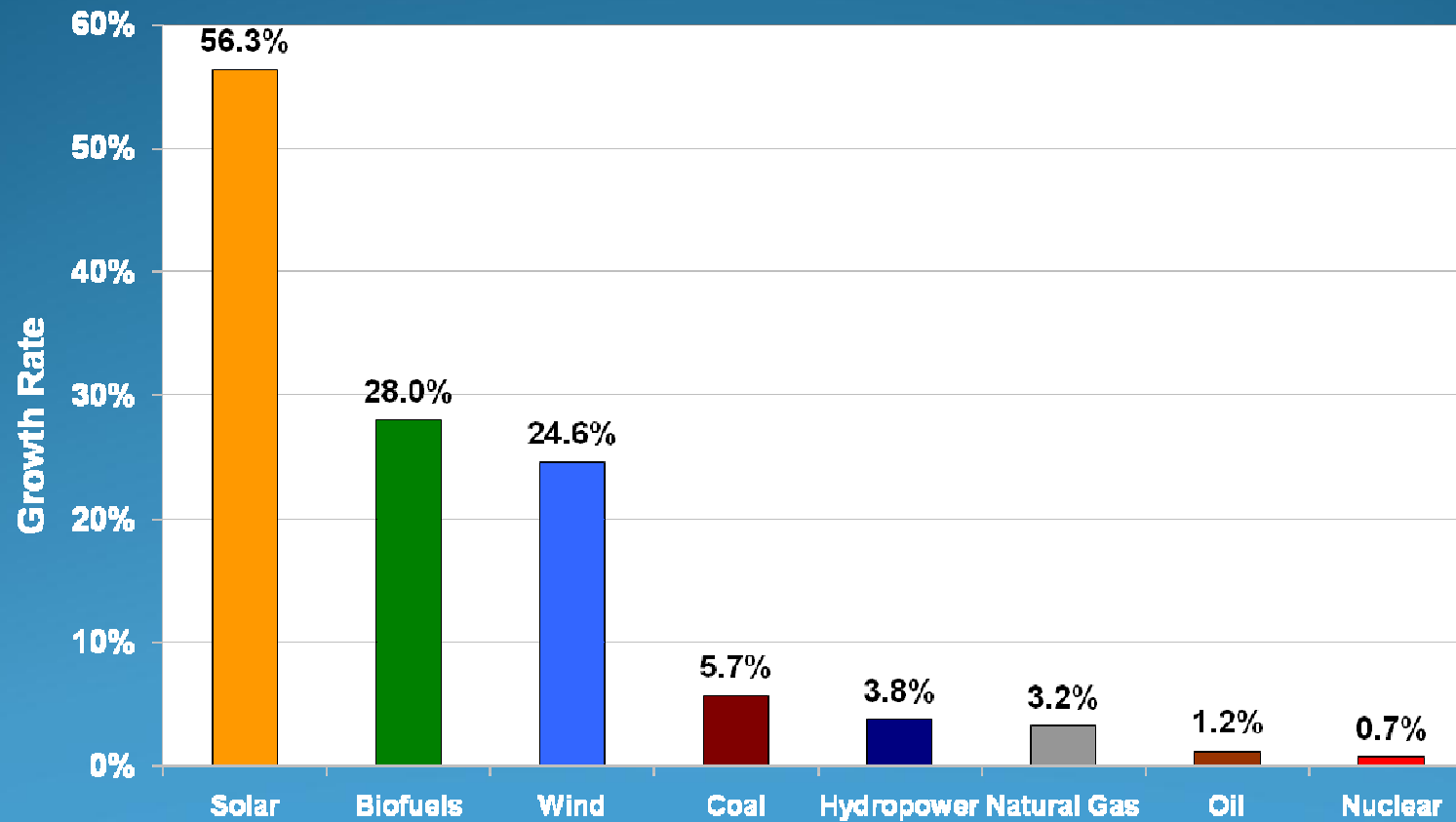


# New Investment in Renewable Energy 2004-2008



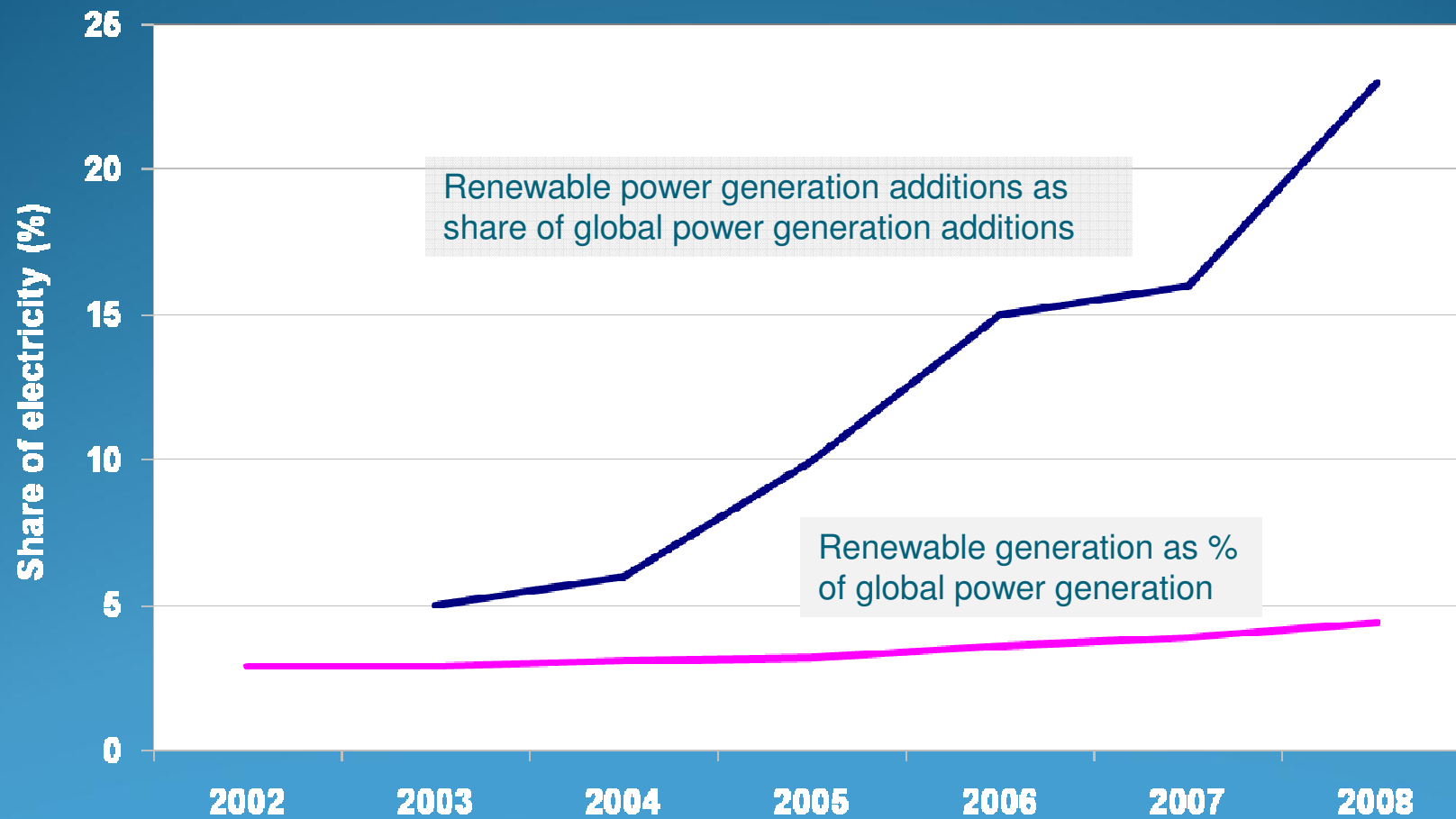
Source: NEF 2009

# Average Energy Growth Rates by Source: 2003-2008



Source: Worldwatch, BP.

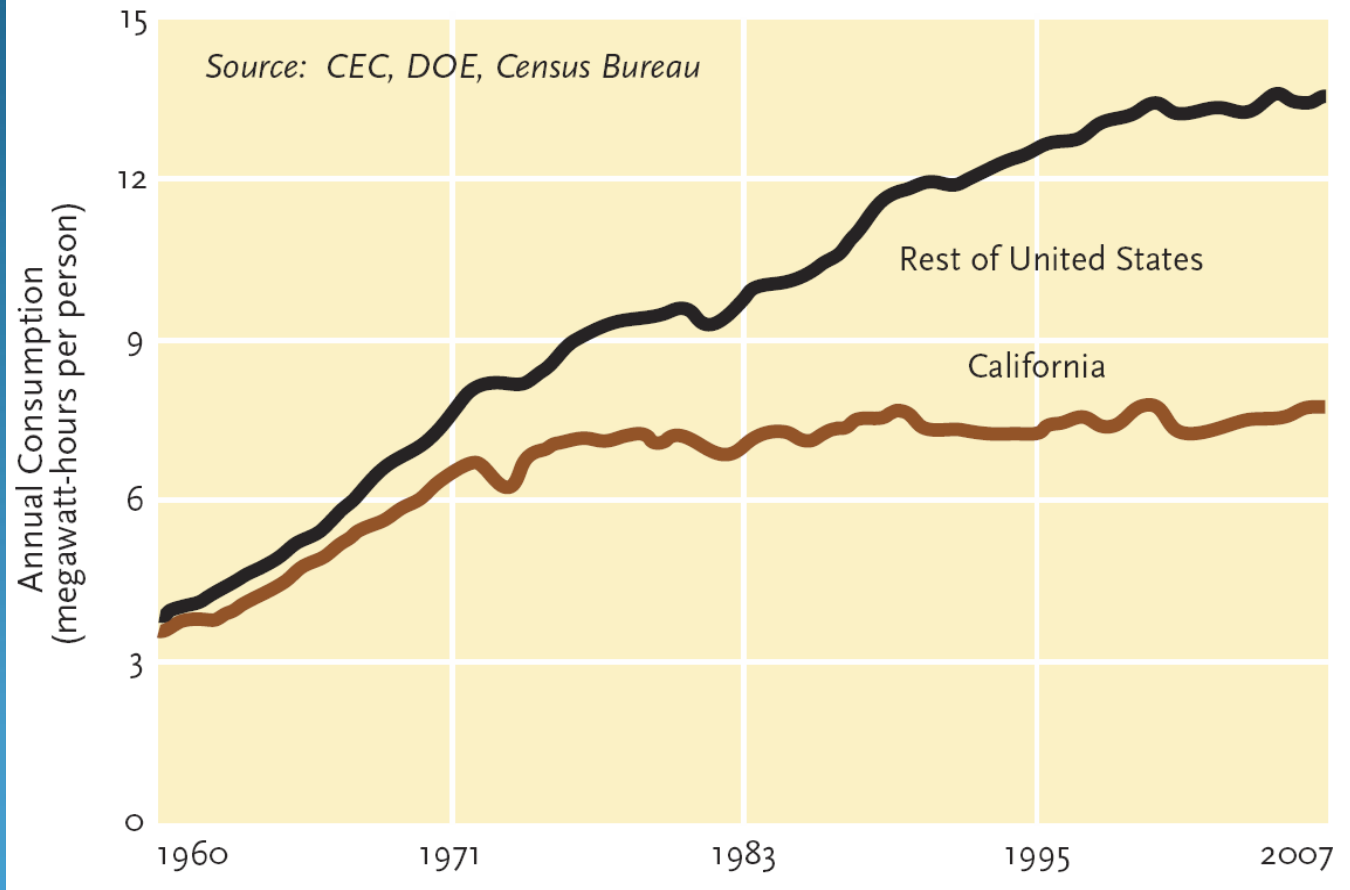
# Global Electricity from Renewables 2002-2008



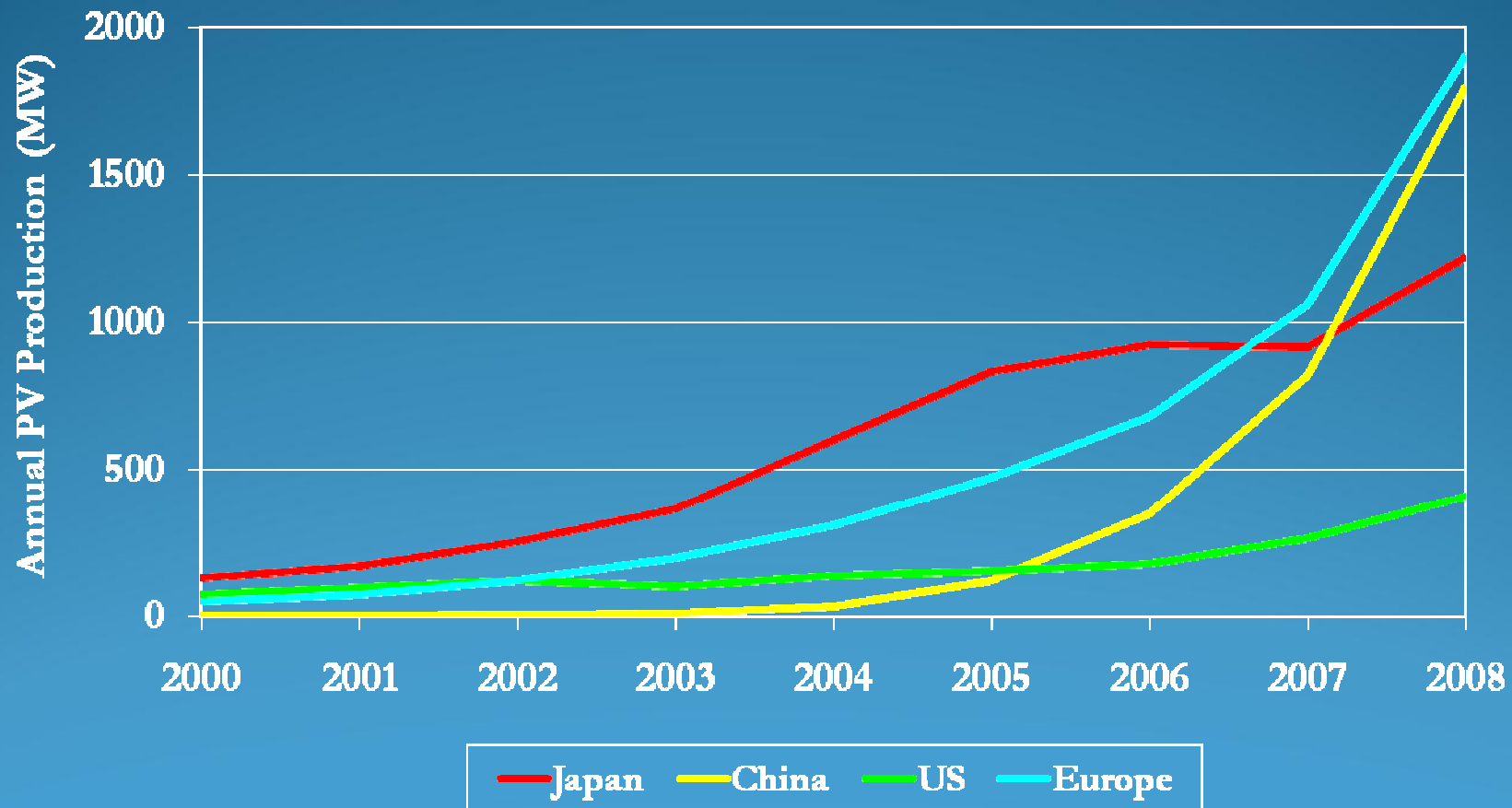
Source: NEF 2009

# Electricity Use Per Capita 1960-2007

Figure 7. Electricity Use Per Capita in California and Rest of United States, 1960–2007

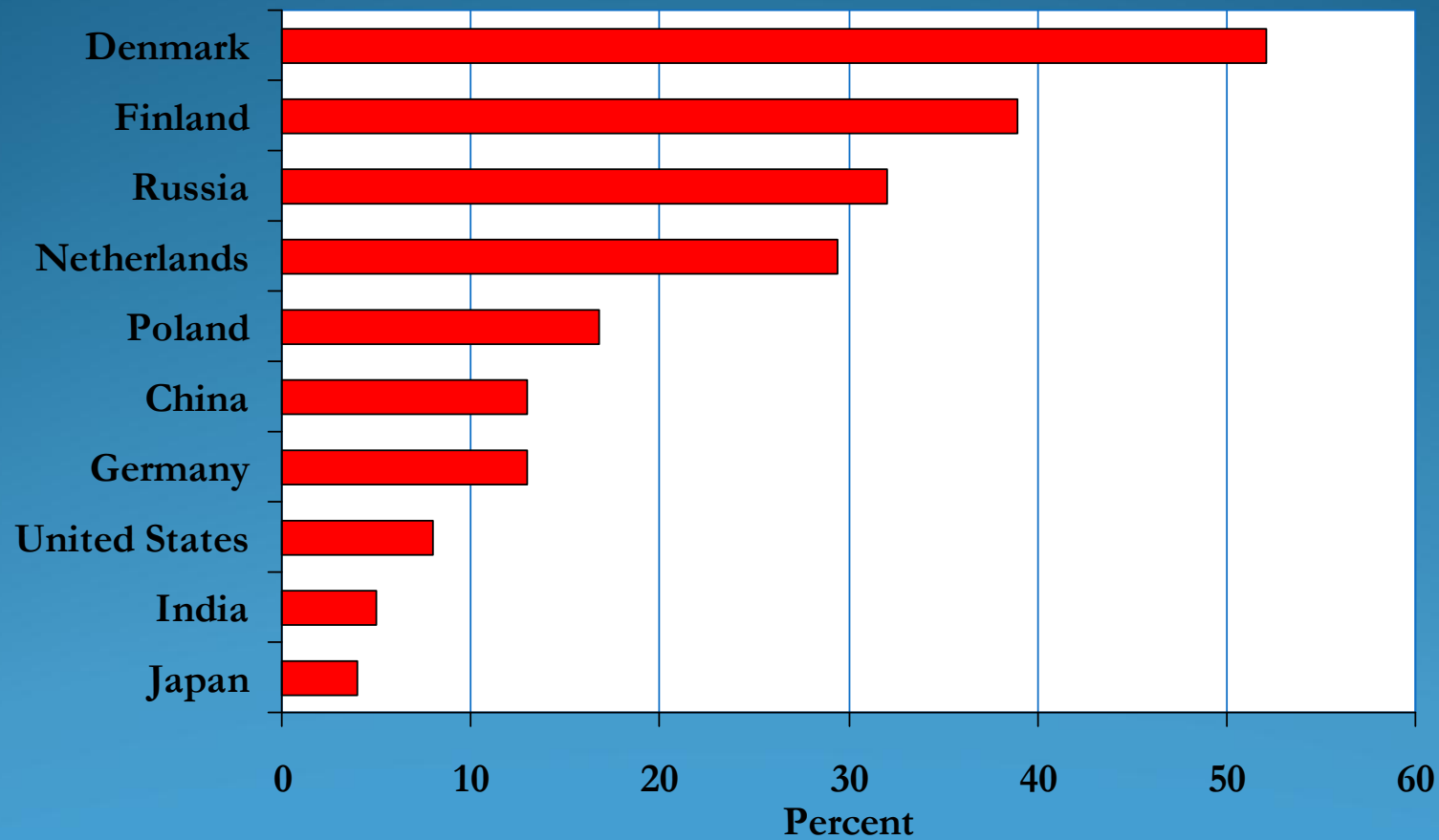


# Solar PV Production by Country/Region 2000-2008



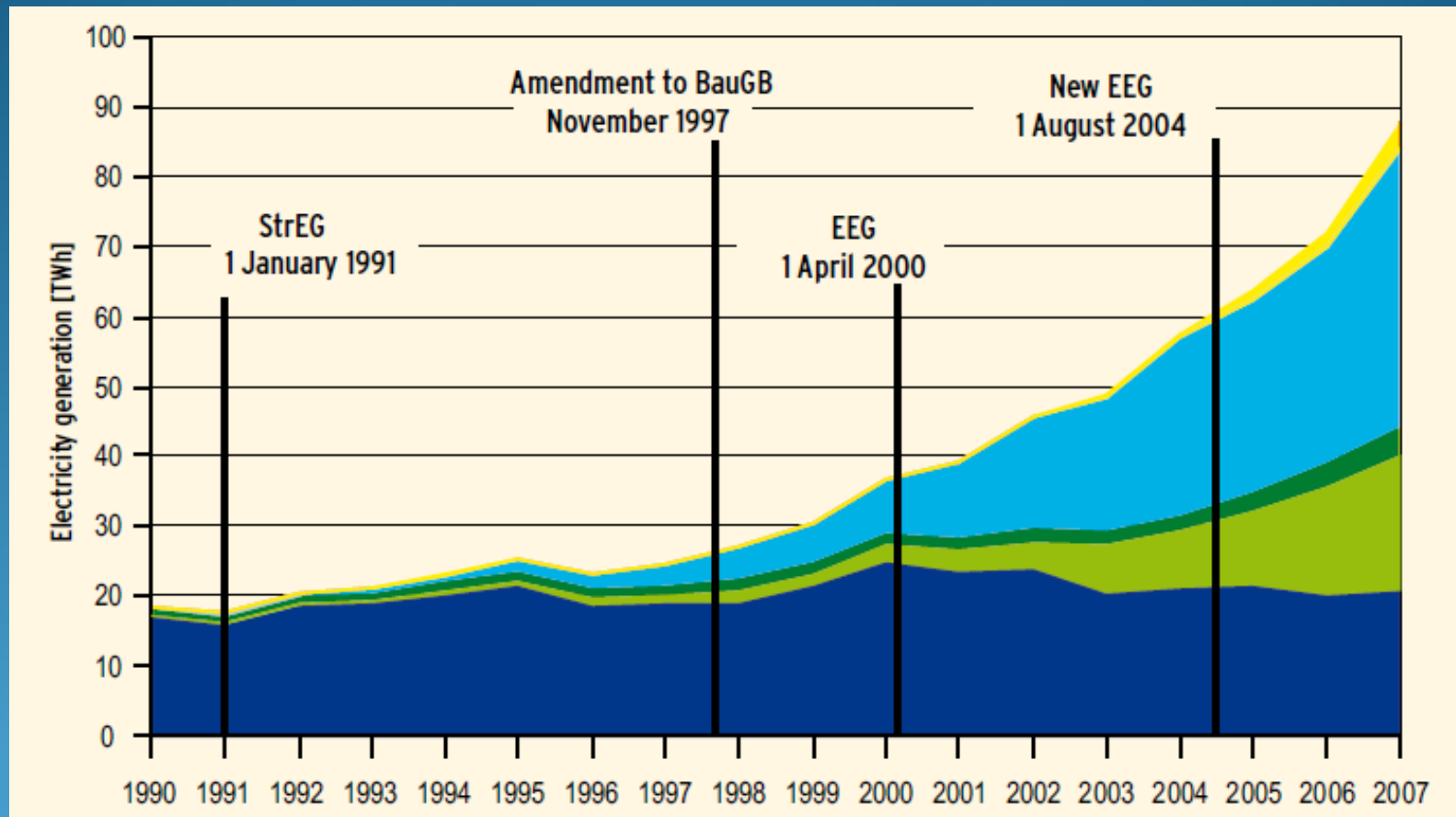
Source: Maycock, Prometheus Institute, CREIA, Bradford.

# Cogeneration Share of National Power Generation



Source: IEA

# Renewable Electricity in Germany 1990 - 2007



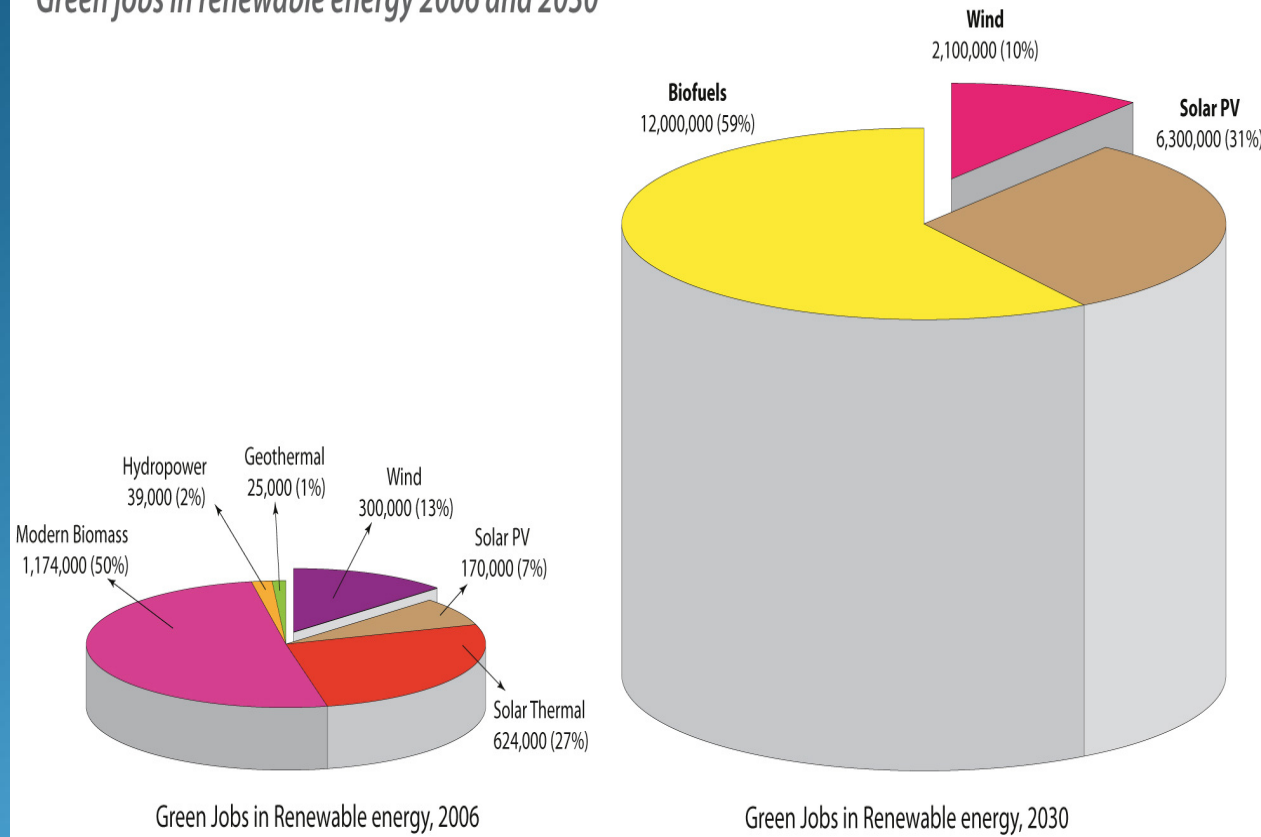
Source: BMU 2008

# Where are the Green Jobs?

- Each \$1 million invested in energy efficiency creates 21.5 new jobs versus 11.5 for gas power generation.
- Retrofitting the European Union's residential buildings to cut carbon dioxide emissions by 75% would lead to some 2.6 million new jobs by 2030.
- Solar electricity creates 7 -11 times more jobs per megawatt hour than coal or gas.
- In China, renewable energy technologies employ an estimated 1 million people in the wind, solar, and biomass industries.
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# Green Jobs in Renewable Energy, Present and Future

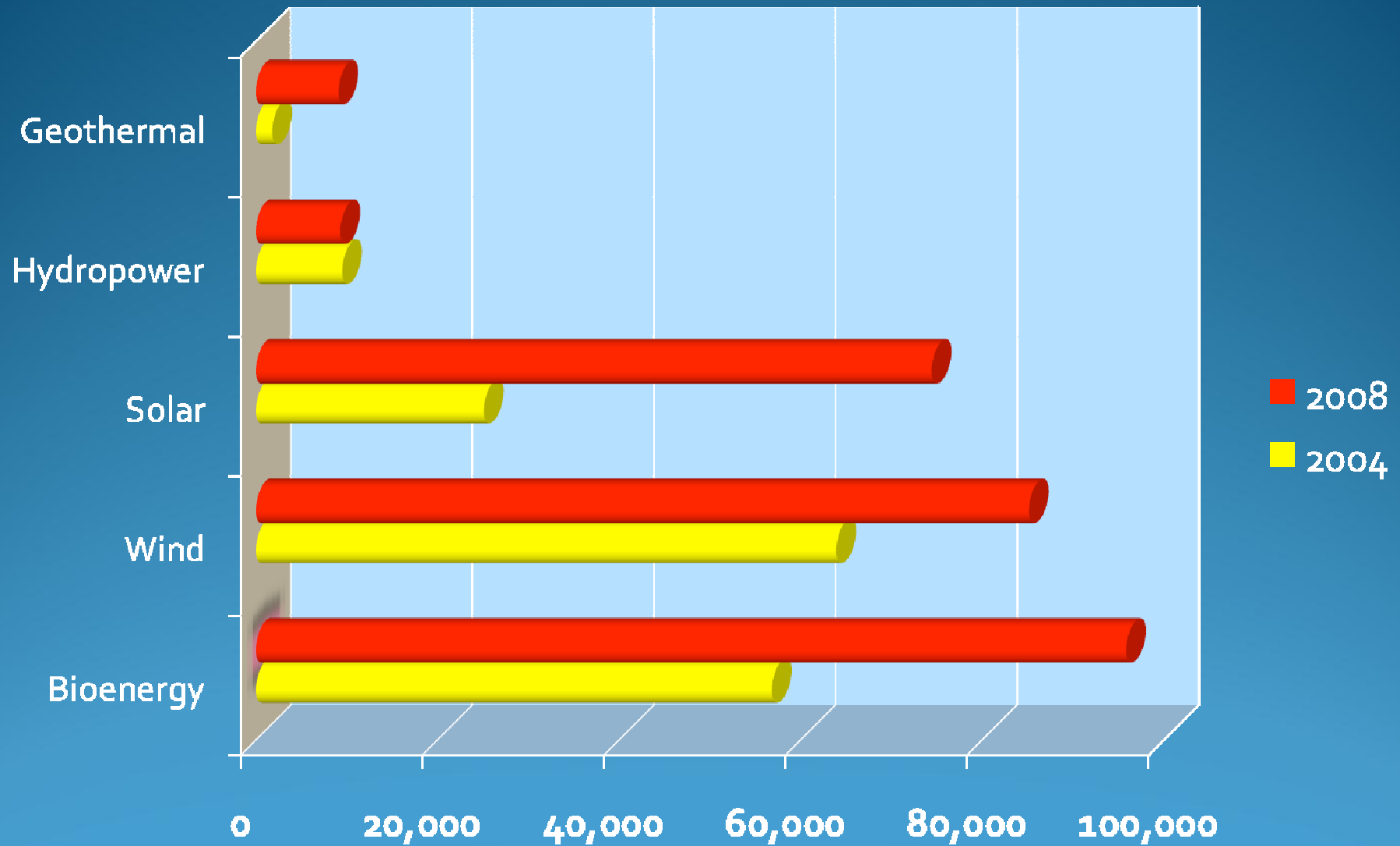
*Green jobs in renewable energy 2006 and 2030*



- 2.3 million people are currently employed in the renewable energy sector globally.
- Projected investments of \$630 billion by 2030 would translate into at least 20 million additional jobs.

SOURCE: UNEP/ILO Green Jobs Report

# Job Growth in Renewable Energy: Germany



## Recycling / Scrap-based Production

	Employment Estimates	
All Recycling	China	10,000,000
	United States	1,100,000
	Brazil	500,000
Aluminum Can Collecting	Brazil	170,000
Electronics Recycling	China	700,000
Steel Scrap Production	United States	30,000
	World	[225,000]
Aluminum Scrap Production	Japan	12,700
	Western Europe	>10,000
		6,100
	United States	

# Green Provisions of US Stimulus Package

- The \$787 billion American Recovery and Reinvestment Act of 2009 includes more than \$71 billion for clean energy programs—more than tripling current spending :
  - \$4.5 billion for upgrading energy efficiency in government buildings
  - \$500 million for job training in energy efficiency and renewables
  - \$2.5 billion for research on energy efficiency and renewable energy
  - \$9.3 billion for investments in rail transportation
  - \$5 billion for home weatherization to reduce low income families' energy costs
- The stimulus package also includes \$20 billion in clean energy tax incentives (e.g. extension of the Production Tax Credit for wind and other renewable energy programs).

# How Green a Stimulus?

	Total	Green Stimulus		RE	CCS	Bldg.	Vehicle s	Rail	Grid
	€ Billion	€ Billion	%	€ Billion					
Source: HSBC Global Research									
EU	30	18	59	0.5	9.7	2.2	1.5		3.8
Germany	81	11	13			8.0	0.5	2.2	
France	26	6	21	0.7		0.6		1.0	3.2
UK	24	2	7			0.2	1.1	0.3	
Italy	80	1	1					1.0	
Spain	11	< 1	6						
Other EU	239	5	2	1.5		0.3	3.0		
<b>Total EU</b>	<b>490</b>	<b>42</b>	<b>9</b>	<b>2.7</b>	<b>9.7</b>	<b>11.4</b>	<b>6.1</b>	<b>4.5</b>	<b>7.0</b>
<i>World</i>	<i>2,161</i>	<i>337</i>	<i>16</i>	<i>29.4</i>	<i>15.5</i>	<i>51.6</i>	<i>12.3</i>	<i>94.1</i>	<i>70.9</i>

Thanks very much!



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