

Generating New Funding for Renewable Energy

Monday, April 26, 2010; 9:30 – 10:45 AM

Moderator:

Paul Deninger, Vice Chairman, Jefferies & Company

Speakers:

Rex Northen, Executive Director, Cleantech Open

Alan Salzman, CEO and Managing Partner, VantagePoint Venture Partners

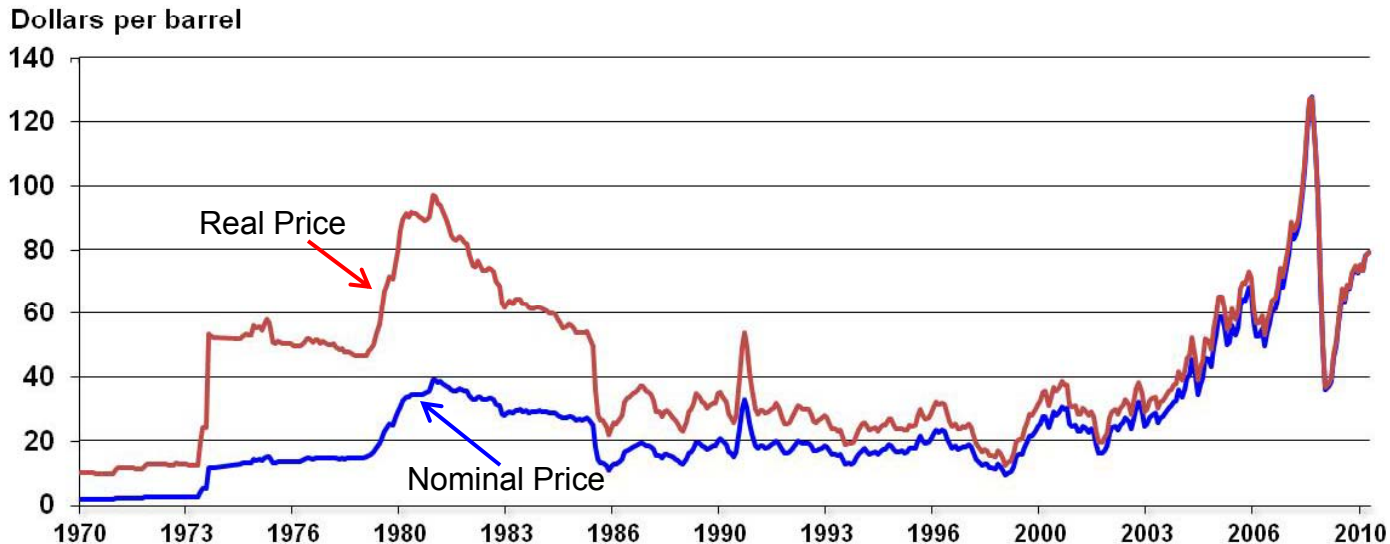
Tulsi Tanti, Chairman and Managing Director, Suzlon Energy Limited

Trond Unneland, Vice President and Managing Executive, Chevron Technology Ventures

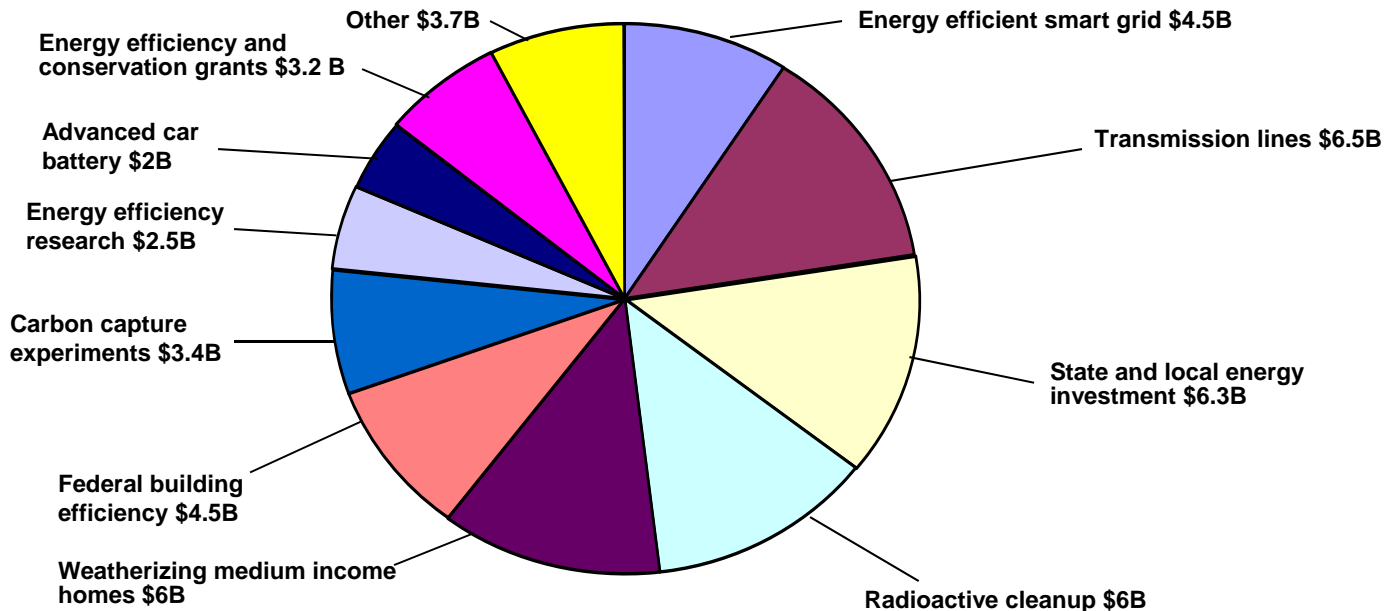
John Woolard, CEO and President, BrightSource Energy

Historical oil prices, 40 years

Nominal and inflation adjusted prices



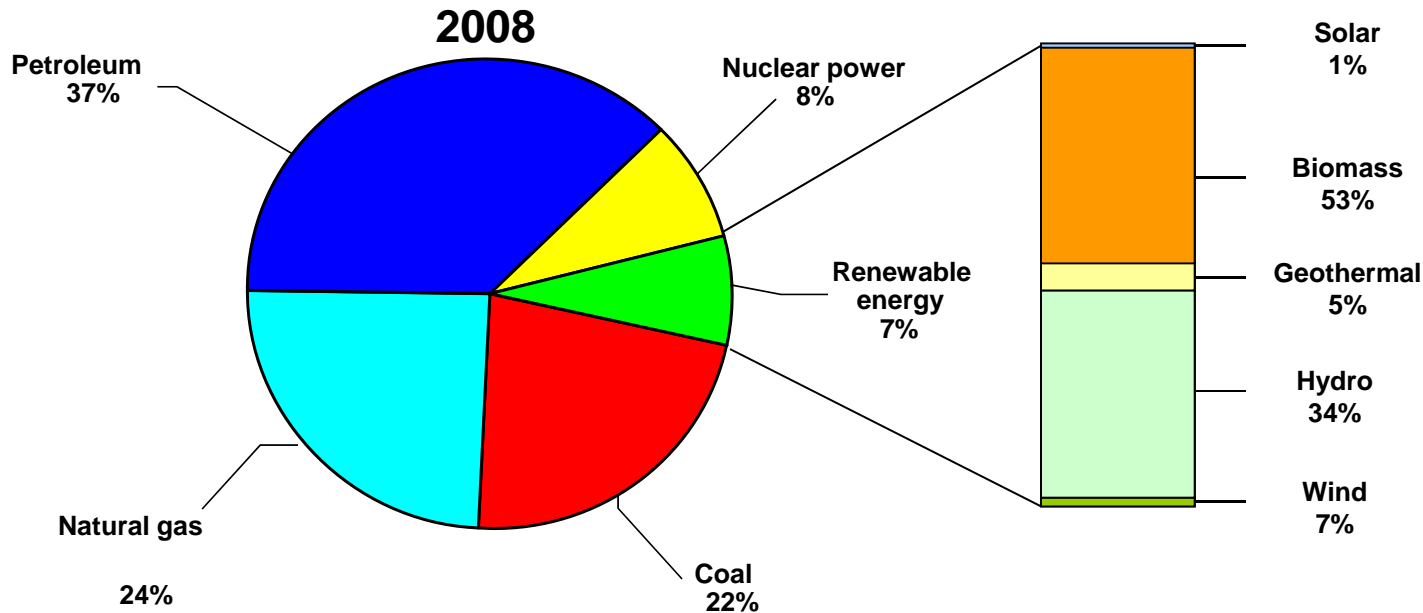
The American Recovery and Reinvestment Act of 2009 Energy Expenditures: Federal Government favors alternatives



Alternative energy accounts for 7% of energy used in the U.S.



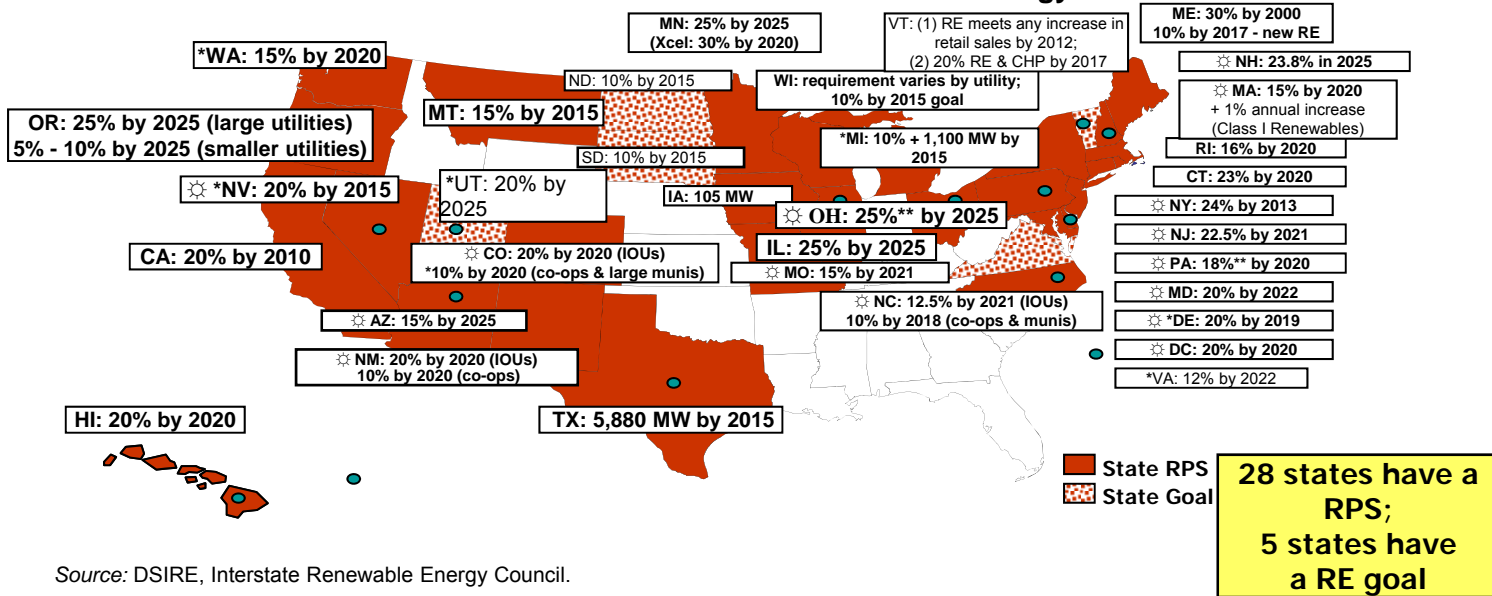
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Source: EIA.

The states have been leading the U.S. to alternative energy

State Renewable Portfolio Standards and State Renewable Energy Goals

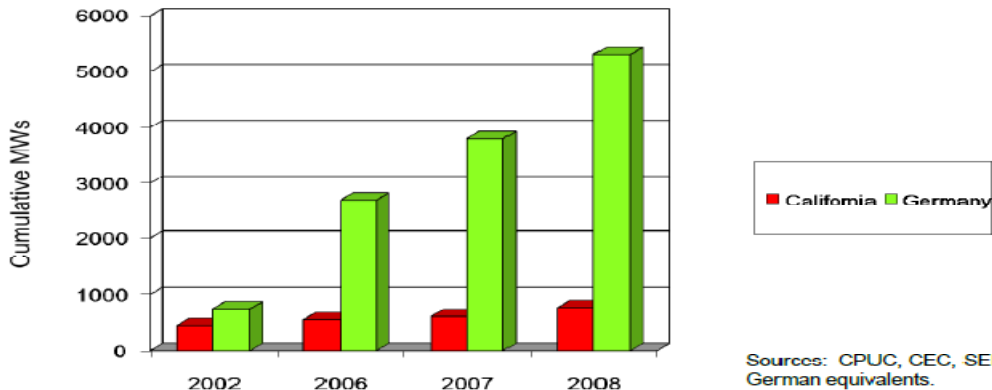


Impact of subsidies: German's solar market vs. California's



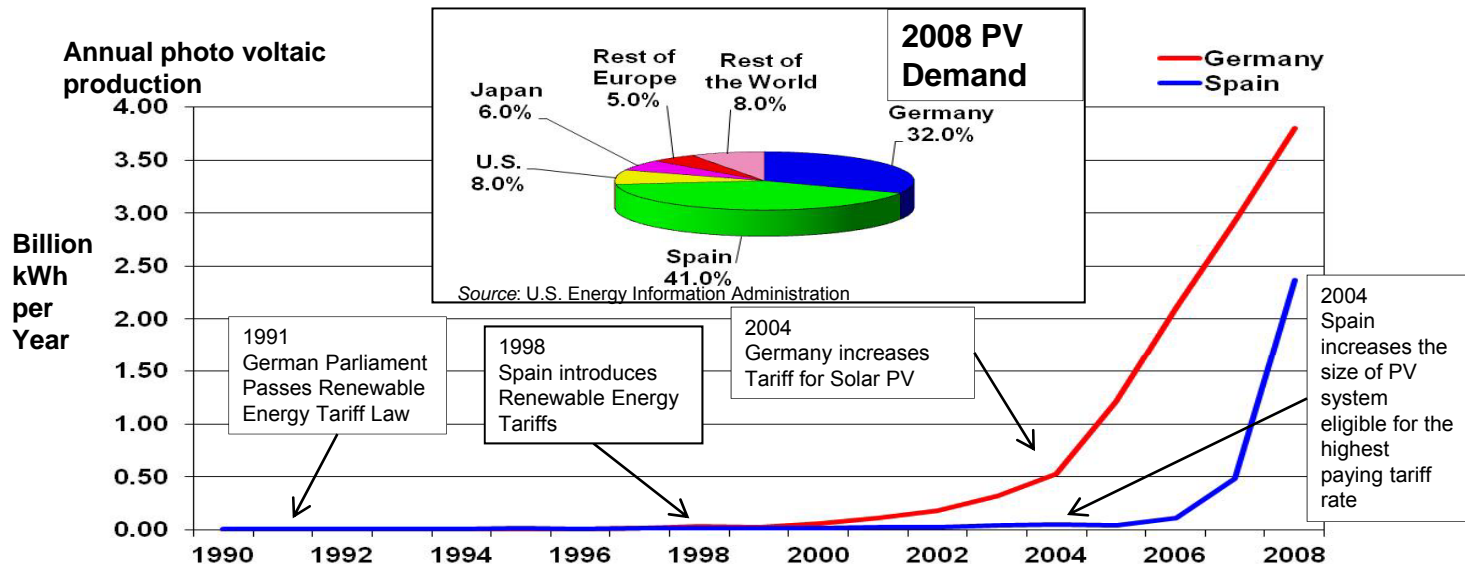
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Solar markets in Germany vs. California (RPS + CSI + others)

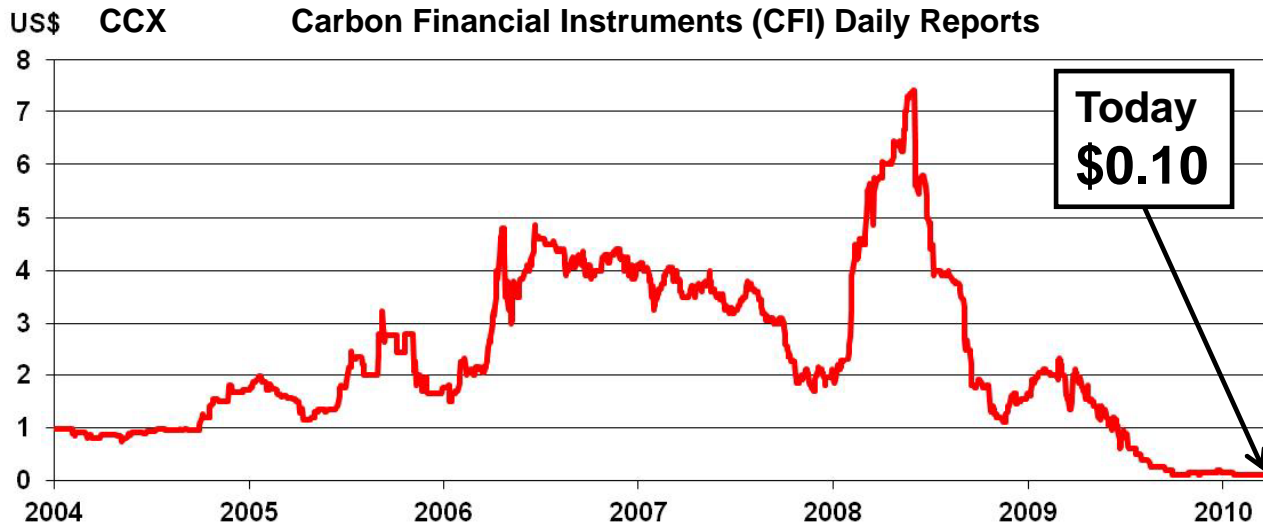


Sources: CPUC, CEC, SEIA and German equivalents.

Utilizing feed-in tariffs: A case study in Germany and Spain (solar PV production)

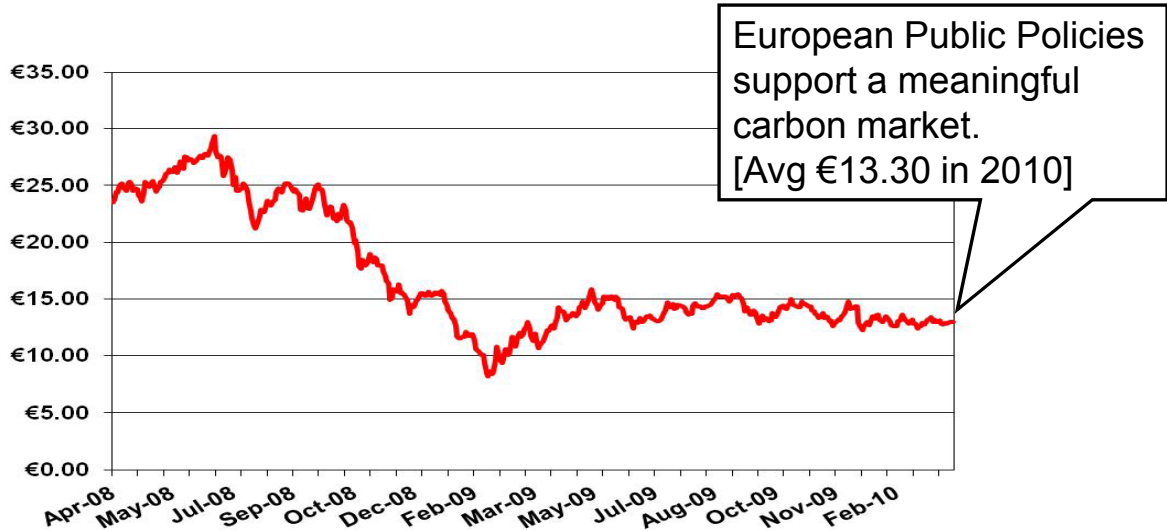


Uncertainty has led to a collapse of carbon prices in the US...



Source: Chicago Climate Exchange

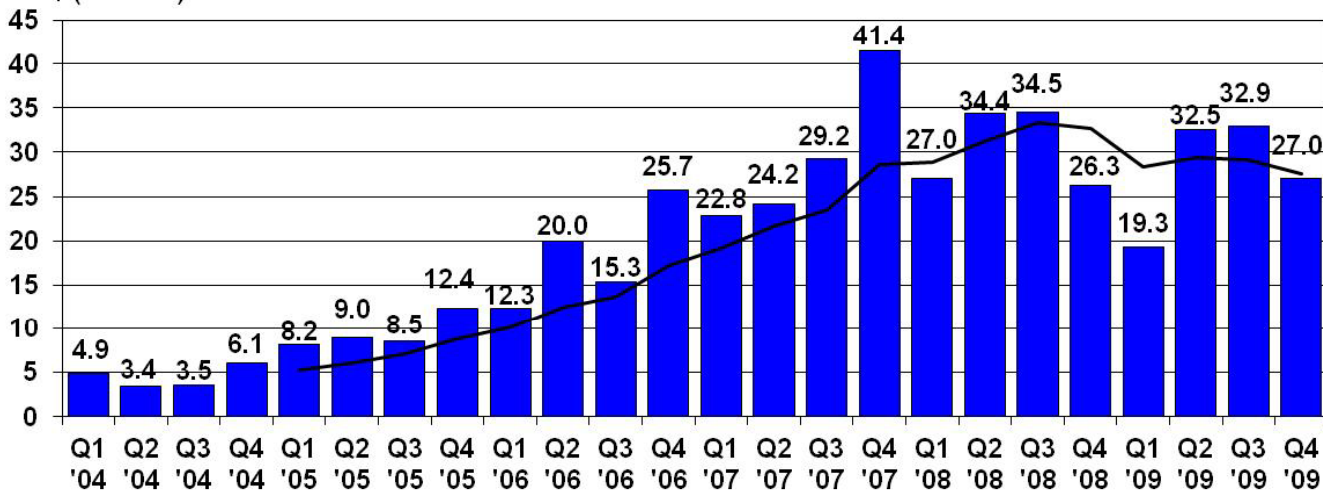
...though prices have held steadier in a more policy-certain Europe



Source: European Climate Exchange

Investment in clean energy may have plateaued...at least for now

US\$ (Billions) Quarterly Financial Investment in Clean Energy 2004 to 2009



Source: New Energy Finance

Risk factors for clean tech growth



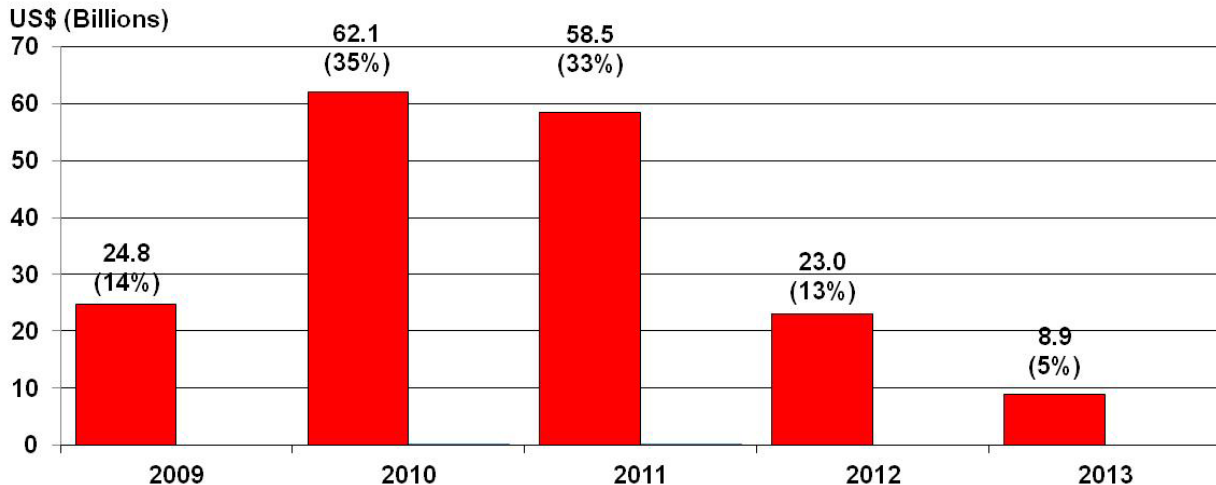
Source: Renewable Energy World

US government spending on clean energy has risen but is likely to fall



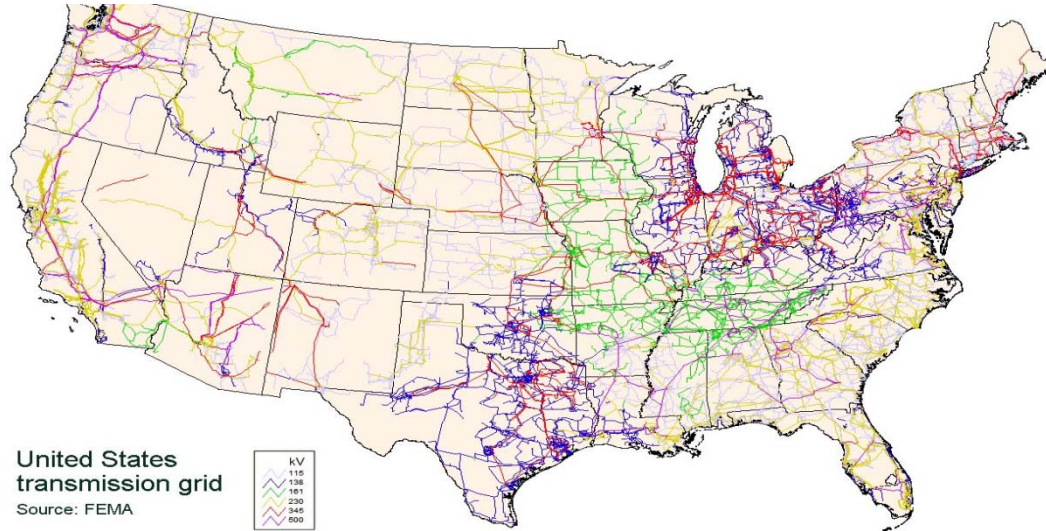
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Government spending on green energy US\$ billions (% of total)



Source: New Energy Finance

Today's grid: 164k miles of wire, 3000 utilities



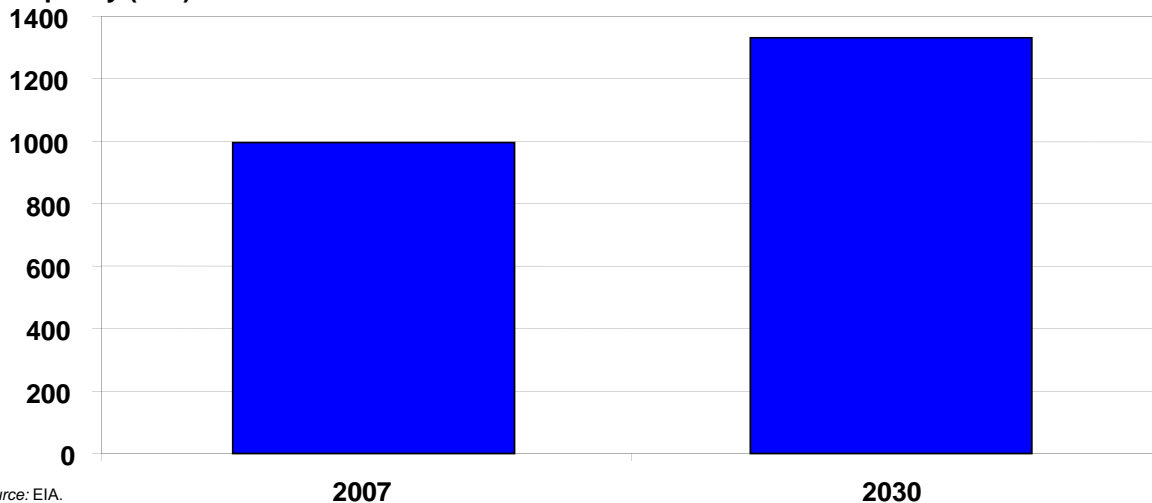
What's wrong with the grid?

- Majority of electricity capacity infrastructure 30 years old or more, with transmission bottlenecks
- Since 1990, demand for electricity up 25%, construction of transmission facilities down 30%
- Renewable energy inputs are limited due to the grid's age and distance from consumers
- Much of the new capacity will need to come from renewable resources
- Lack of security leaves the grid vulnerable

How can United States build the needed capacity by 2030?

EIA estimate for additional capacity = 338 GW by 2030, costing 300 US\$ billions

Capacity (GW)



Source: EIA.

Renewable incentives programs in the United States



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- New Solar Homes Partnership - California Energy Commission
 - Provides incentives for solar production from PV installations applicable to custom homes and small developments
- California Solar Initiative – California Public Utilities Commission
 - Performance based incentives focused on reaching 3000 MW Solar capacity by 2016 applicable to non-residential buildings and existing homes
- Wisconsin
 - Has four solar buy back programs offered by utilities to electricity consumers to purchase renewable energy
- Green Tag Purchase - Northwest Solar Cooperative
 - An agreement by the NWSC to purchase solar and wind power at \$0.02/kWh through December 31, 2009
- Alternative Energy Investment Tax Credit - Montana
 - Alternative energy investments greater than \$5000 receive a tax credit of 35% on corporate income tax

IEA's 2008 mid-term report

Non-OPEC Output: Headed for a dip in 2010-2012

