

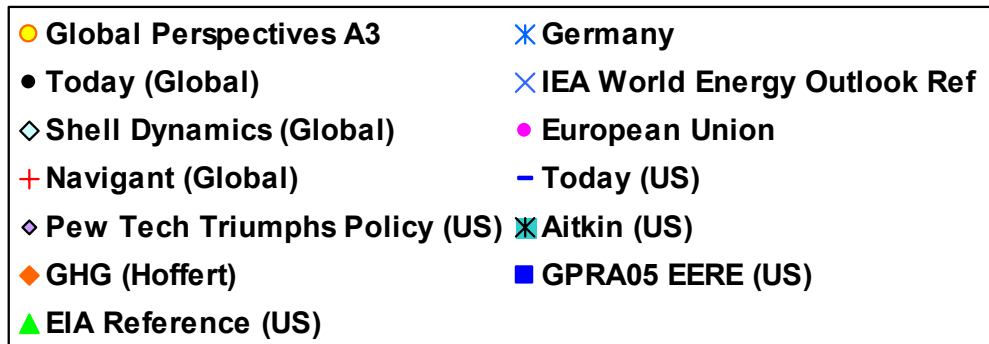
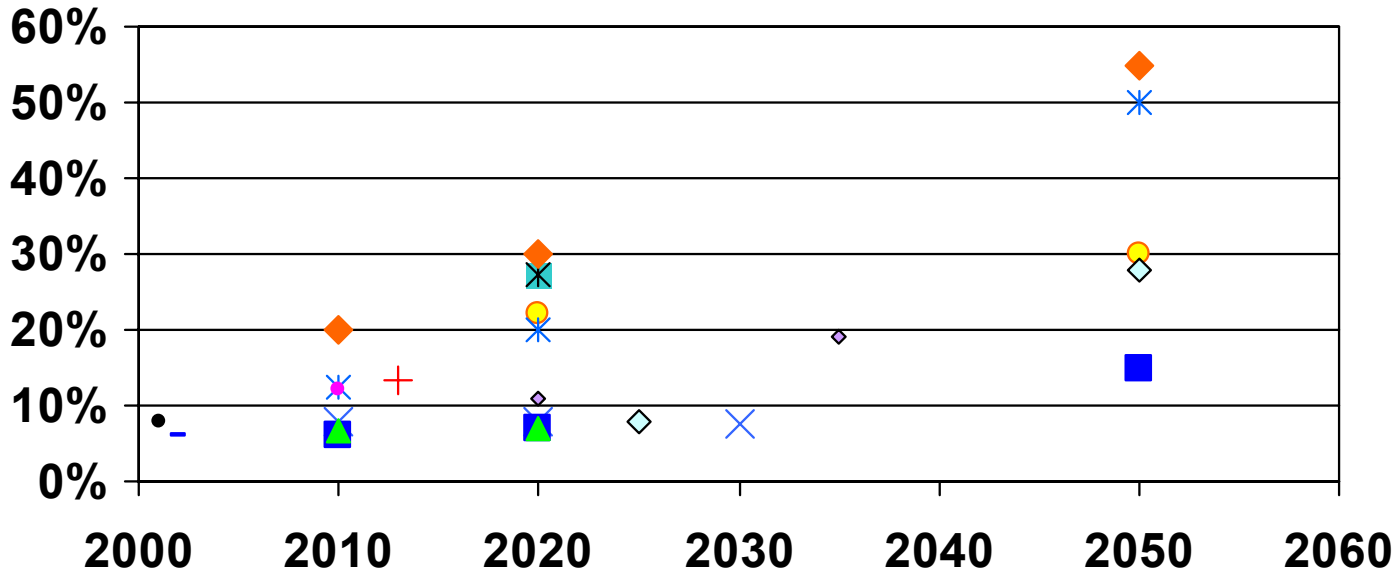


# ***2007 Consensus Outlook On Renewable Energy in America***

Michael T. Eckhart  
American Council On Renewable Energy  
[www.acore.org](http://www.acore.org)

# Renewable Energy Targets and Forecasts

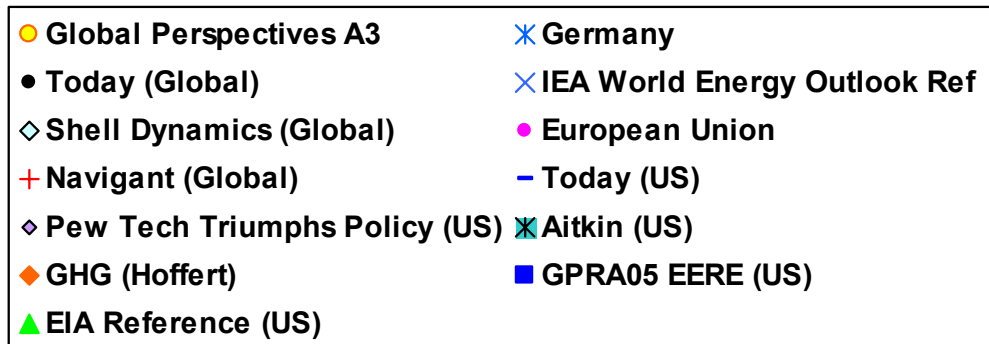
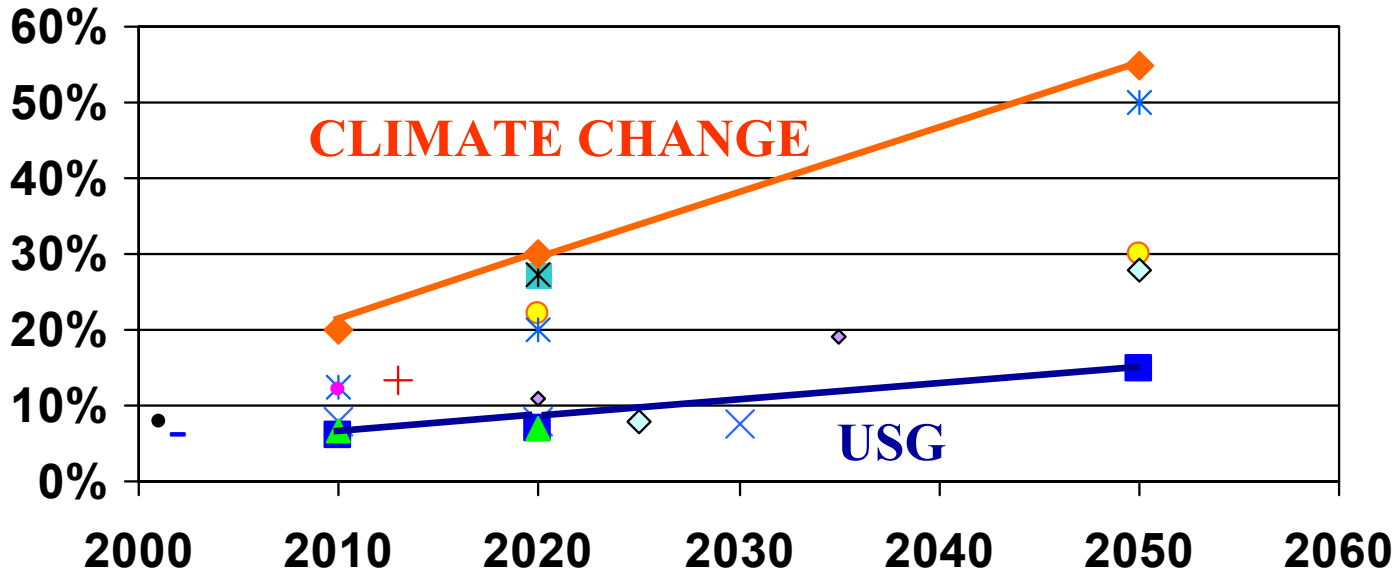
## % of Total Energy



Source:  
NREL

# Renewable Energy Targets and Forecasts

## % of Total Energy



Source:  
NREL

**Policy Conference**

# **“Phase II of Renewable Energy in America”**

**November 30, 2006**

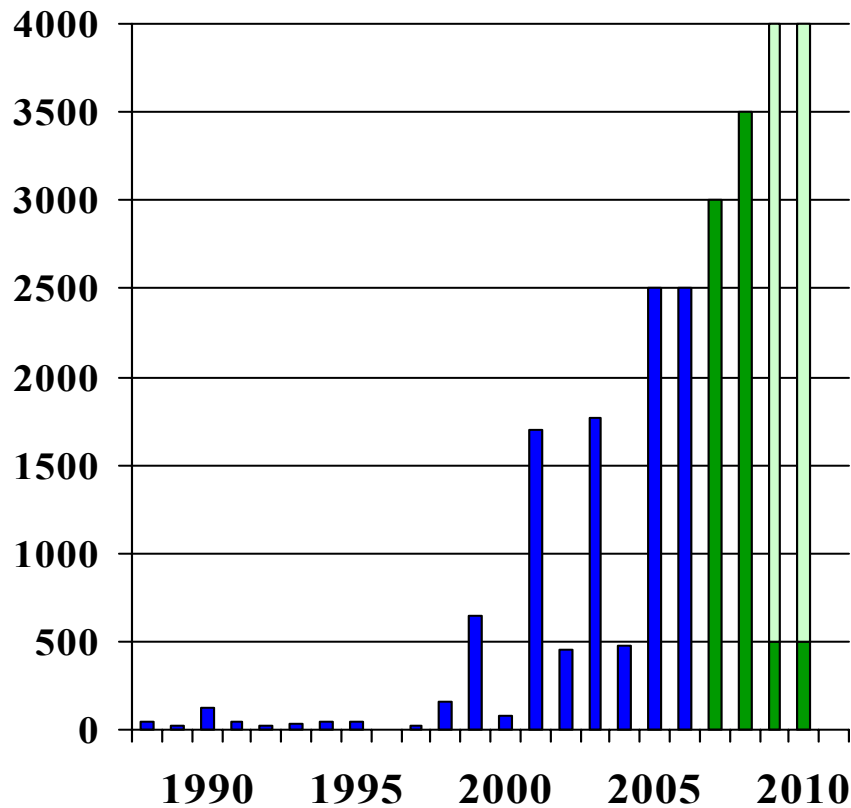
**Cannon Caucus Room, Washington, DC**



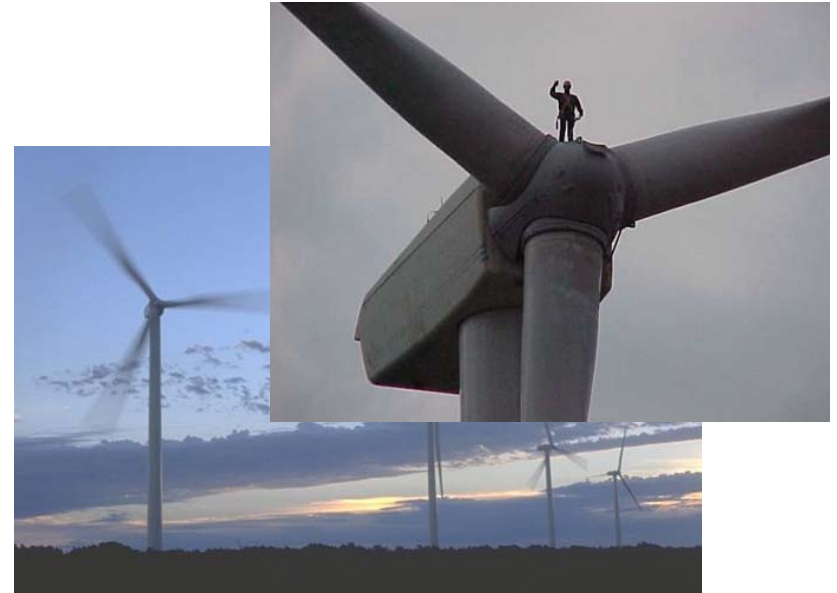
# Wholesale Power Generation

## US Wind Power

**US Wind Power Installations  
(MW/Year)**



Sources: AWEA (actual) and ACORE (forecast)



**11,900 MW Installed Base end 2006**

**Market Drivers:**

- . Production Tax Credit - ?
- . Renewable Portfolio Standards
- . Transmission
- . China

**350,000 MW within 20-30 years** 5

# Other Wholesale Power Generation

## Geothermal, Hydropower, and Biomass Power



### Geothermal Power:

3,000 MW in development  
100,000 MW mid-term future



### Hydropower:

23,000 MW incremental hydro  
90,000 MW total “water power”



### Biomass Power:

Industrial CHP:	57 GW
Wholesale power:	37 GW
Solid Waste:	10 GW



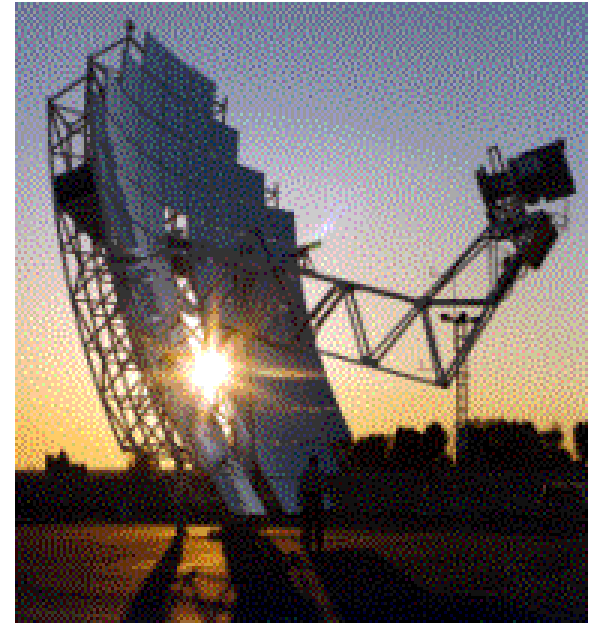
# Other Wholesale Power Generation

## Concentrating Solar Power



**Solar Trough:**  
64 MW Under Construction  
1,000+ MW Proposed

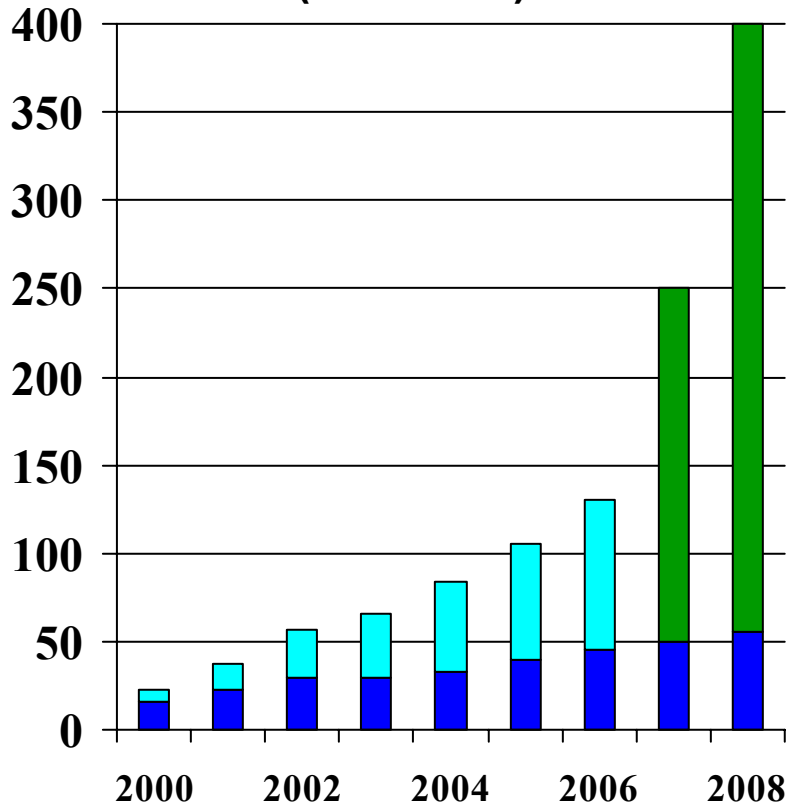
**Solar Dish-Sterling:**  
850 MW Contracts  
500 MW Letter of Intent



# Distributed Generation

## US Solar PV Market

**US Solar PV Installations  
(MW/Year)**



Sources: PV News and ACORE



### Market Drivers:

- 30% ITC to 2008 – extension?
- California program 2007- 2018
- Corporate greening “Walmart”
- VC in advanced PV

### Outlook:

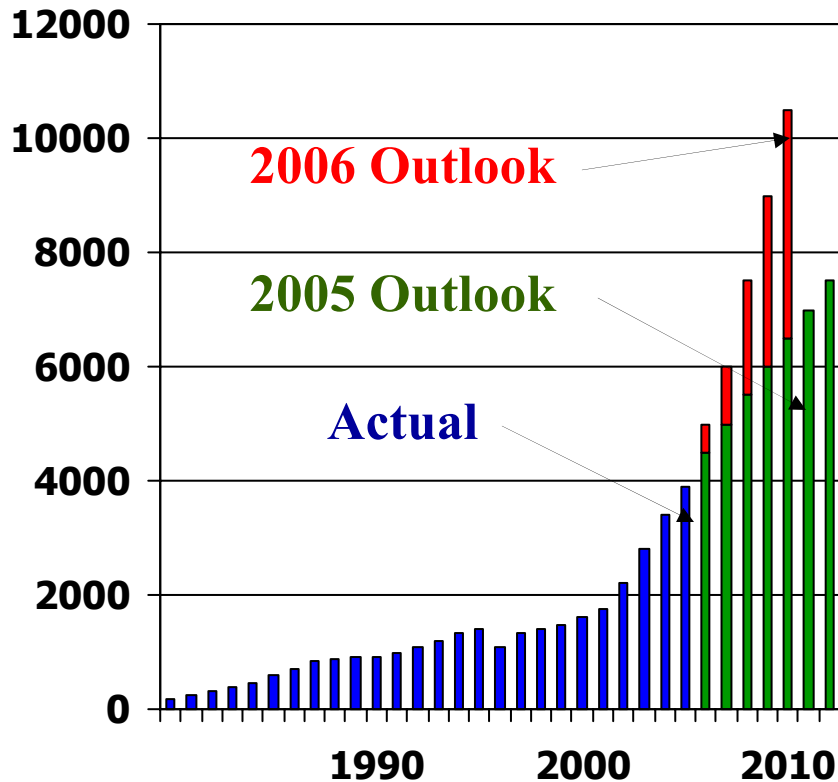
- 67% compound growth
- 164 GW total solar by 2025



# Biofuels

**Ethanol = 109 Plants + 40 new projects in 19 States**  
**Biodiesel = 85 plants + 65 in construction in 24 states**

**Ethanol**  
**Million Gallons / Year**

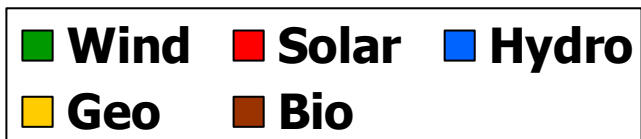
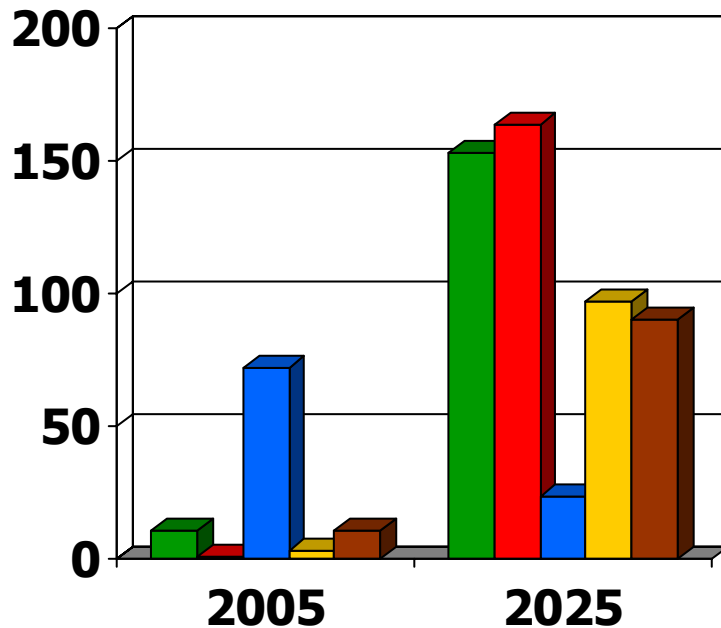


**Biofuel upside: 30% of US Fuels?**

- President says 35 BGY by 2017
- Production economics – big shift
- Demand for ethanol? E85?
- Flex fuel vehicles?

# Outlook on Renewable Energy in America

**Installed Base and  
Incremental Additions  
(Gigawatts)**



## Prospective New Additions By 2025:

- Wind: + 153 GW
- Solar: + 164 GW
- Hydro: + 23 GW
- Geo: + 97 GW
- Bio: + 90 GW

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Total + 527 GW

# 2007 Consensus Outlook

- **Government:**
    - Department of Energy
    - Energy Information Administration
  - **Research Institutions:**
    - National Renewable Energy Laboratory
    - Electric Power Research Institute
  - **Trade Associations:**
    - American Wind Energy Association
    - Biomass Coordinating Council
    - Geothermal Energy Association
    - National Biodiesel Board
    - National Hydropower Association
    - Ocean Energy Council
    - Renewable Fuels Association
    - Solar Energy Industries Association
  - **Nonprofit Groups and Universities:**
    - Apollo Alliance
    - Energy Future Coalition 25x'25
    - University of California at Berkeley
    - Union of Concerned Scientists
    - Worldwatch Institute
  - **Lower Cases:**
    - DOE / EIA
    - EPRI Low Case
  - **Mid-Range Estimates:**
    - EPRI Upper Cases
    - Trade Associations
  - **Upside Proposals:**
    - Worldwatch's American Energy
    - Apollo Alliance's 3 million jobs
    - UCS 20% RPS for 2020
    - EFC's 25% by 2025
    - ASES' 30% achievable by 2030
- **Key to range of outlooks is assumptions on policy:**
    - Mandates
    - Tax incentives
    - Carbon restrictions
    - Other



# Thank You

be a member

[www.acore.org](http://www.acore.org)

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