



NASEO: Renewable Energy Opportunities & Challenges

September 13, 2011

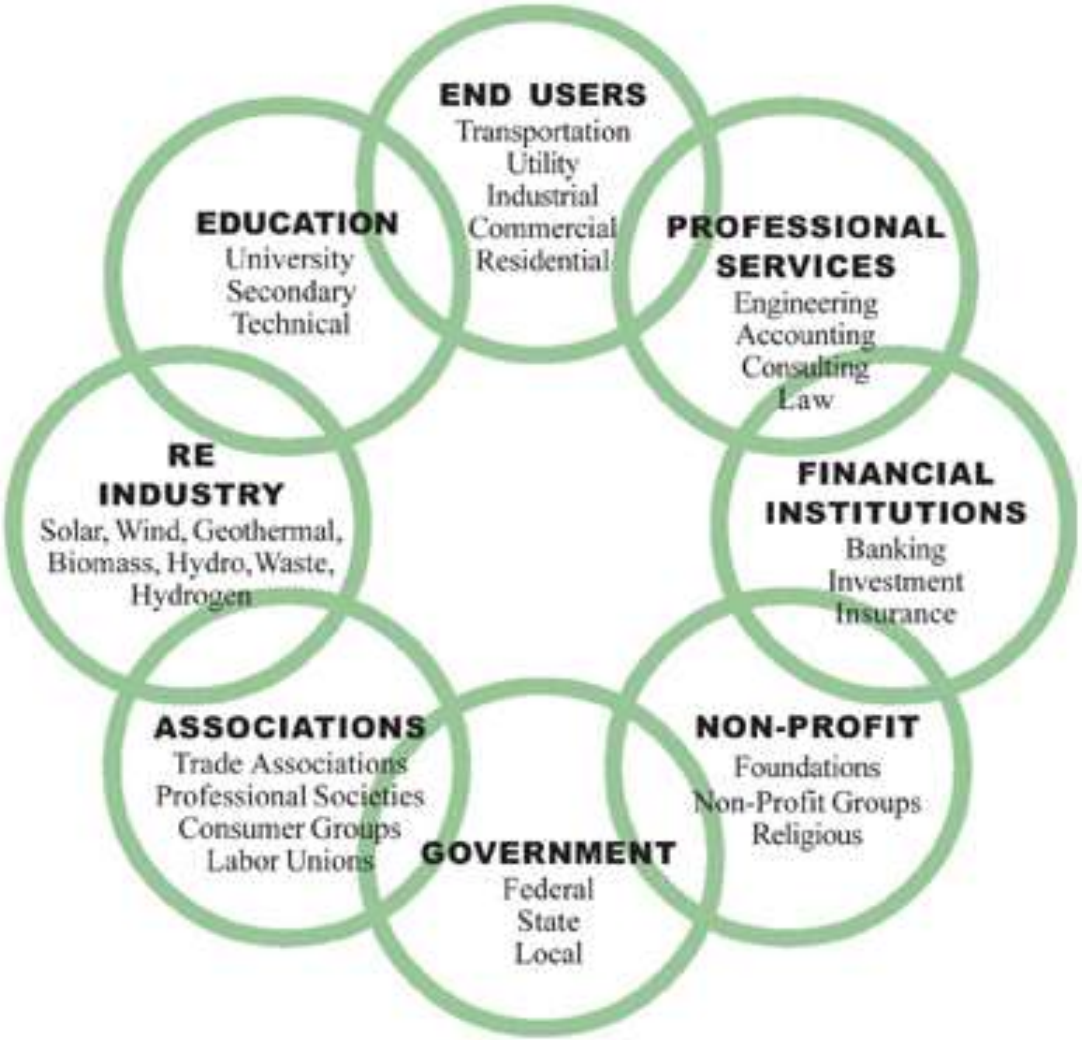
Todd Foley
Senior Vice President, Policy
American Council On Renewable Energy (ACORE)
www.acore.org

Agenda

- ACORE Background
- Renewable Energy Market/Technology Drivers
  - Market Growth
  - Cost Reduction
- Renewable Energy Policy Drivers: State & Federal
  - RPS/RES/CES
  - EPA MACT Rules
  - FERC
  - DOE Budget
- Renewable Energy Finance: “1603 Grant At Risk”
  - Investment
  - Finance incentives

ACORE's 600+ Organizational Members

Strategy to Assemble All the Players Necessary to Make Renewable Energy Successful in the U.S.



ACORE's Mission & Strategy

501(c)(3) tax-exempt research & education nonprofit organization:

"…bring renewable energy into the mainstream of our economy and lifestyle"

"…be *for* renewable energy & *against* nothing"

ACORE encompasses all renewable & inexhaustible energy options:

- **Solar energy**
- **Wind power**
- **Hydropower & ocean**
- **Biomass energy & fuels**
- **Geothermal energy**
- **Waste-to-energy**

…in all forms of energy:

- **Electricity**
- **Fuels**
- **End-use thermal energy**
- **Hydrogen**

…while focusing on three strategic themes & three major activities:

- **Markets**
- **Finance**
- **Policy**
- **Research & publishing**
- **Convening & education**
- **Communications**

A Strategic Plan to Make Renewable Energy Successful in the U.S.

Three Goals to Be Achieved

National Security

Climate & Environment

Growth & Jobs

Three Means by Which to Achieve Them

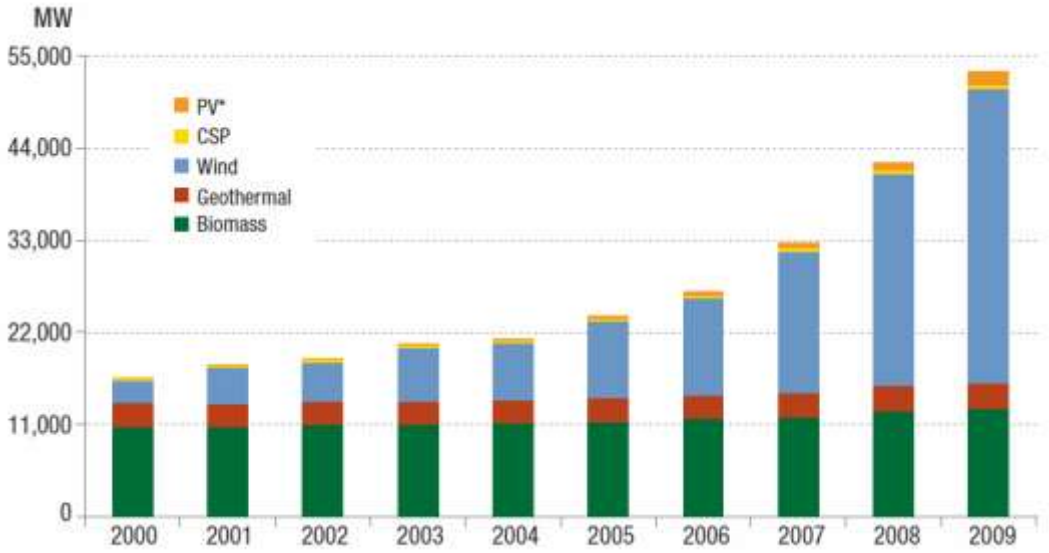
Policy

Finance

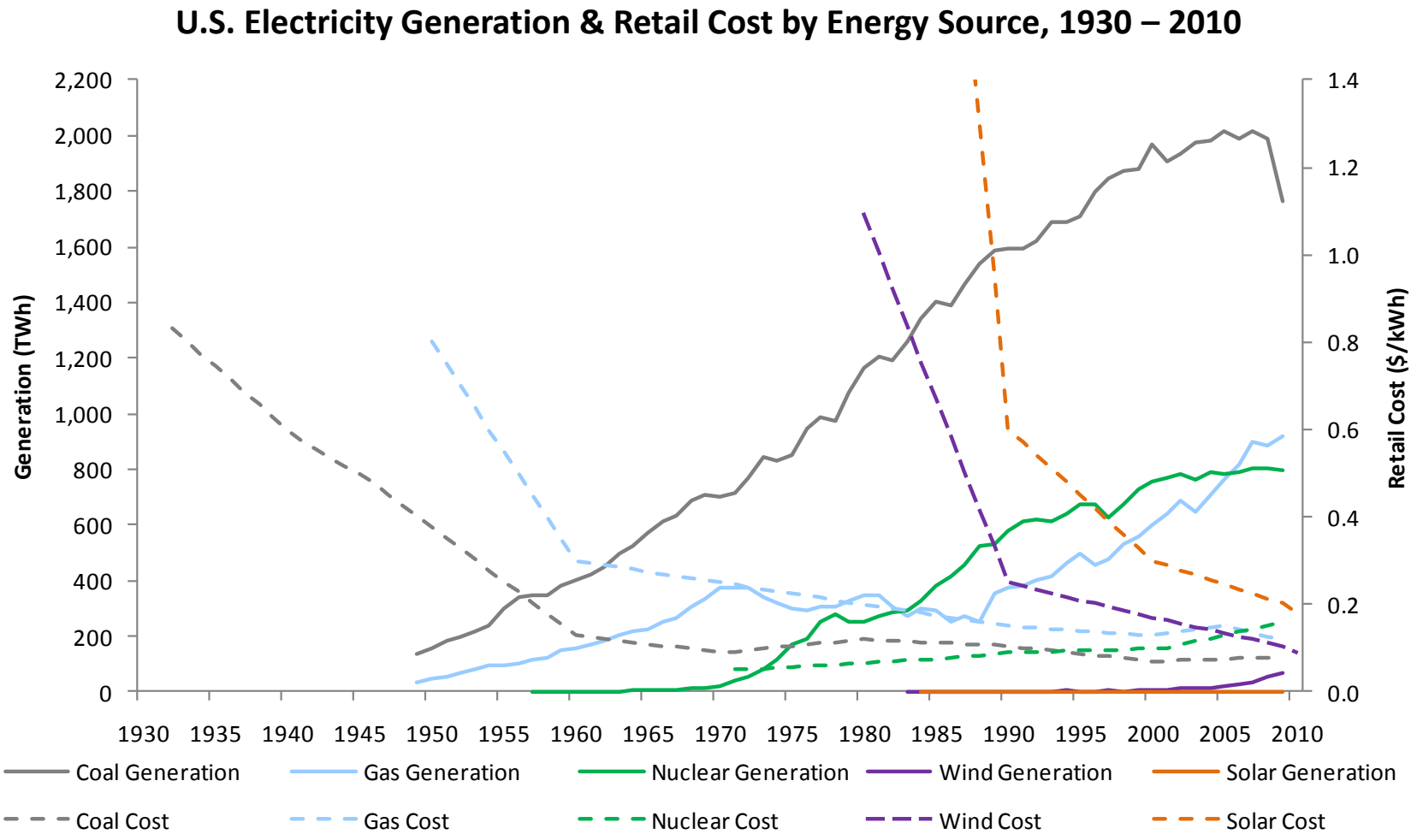
Education

2009 Market Growth

- **U.S. RE Market:**
  - **25% Growth**
- **Wind:**
  - **20% growth in 2009 (10 GWs)**
  - **39% of all new generation**
- **Solar:**
  - **96% growth in 2010 (~850 MWs)**



Market Driver: Impressive Cost Reduction



Renewable Energy Increasingly Competitive!

US Market Overall

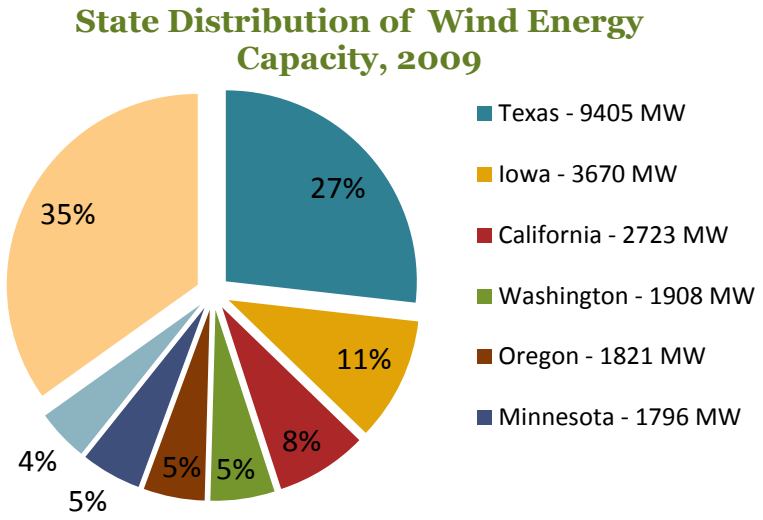
- Investment - $30.7 billion in 2010
- Jobs - 850,000 to 950,000 total (all renewable energy)

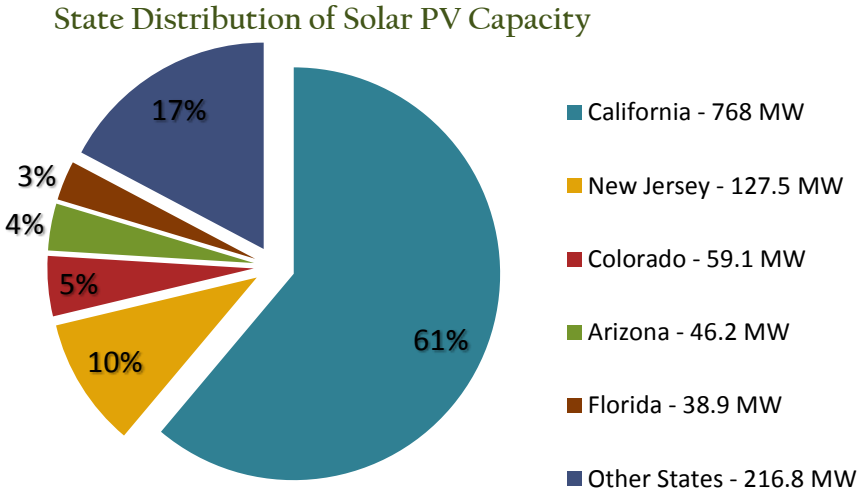
Wind

- Costs down 20%
- 75,000 direct jobs

Solar

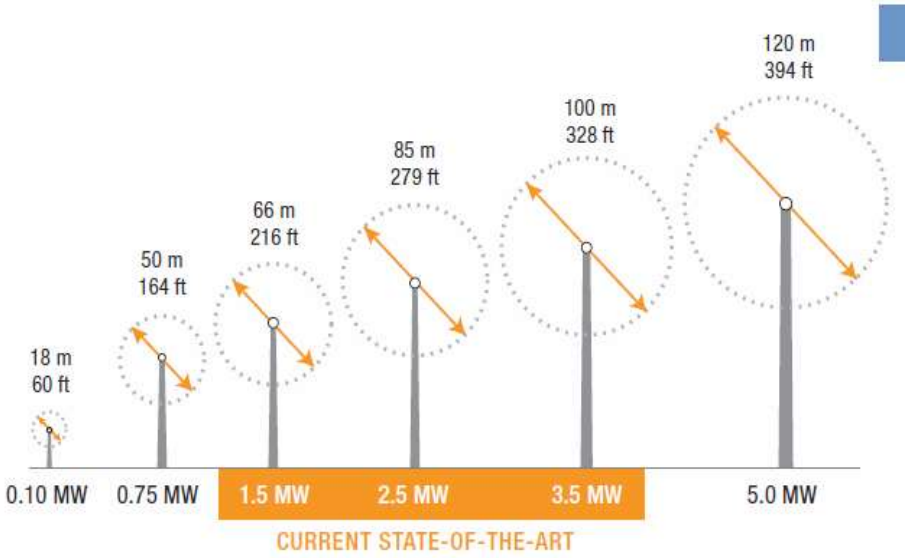
- Costs down ~60% since 2008 - $3.20 to $3.80/watt installed!
- 93,500 direct jobs
- $6 billion industry in 2010 – fastest growth in US energy sector of 67%, up from $3.6 billion in 2009



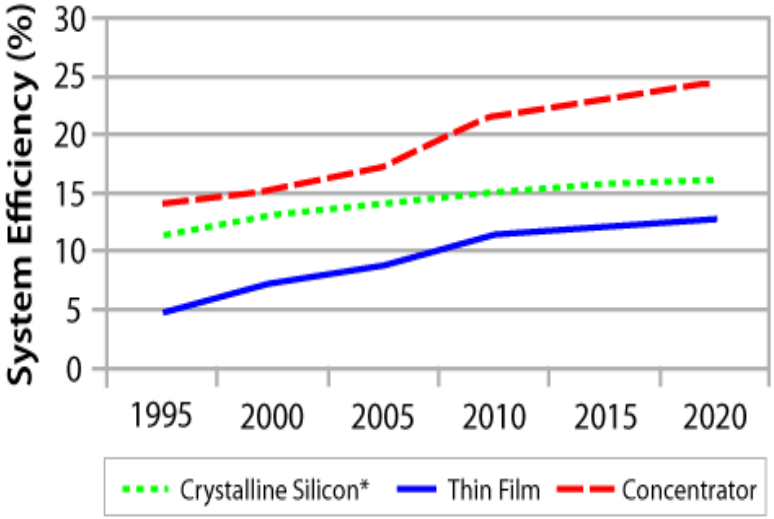


Technology Improvements

Wind Turbine Size Range

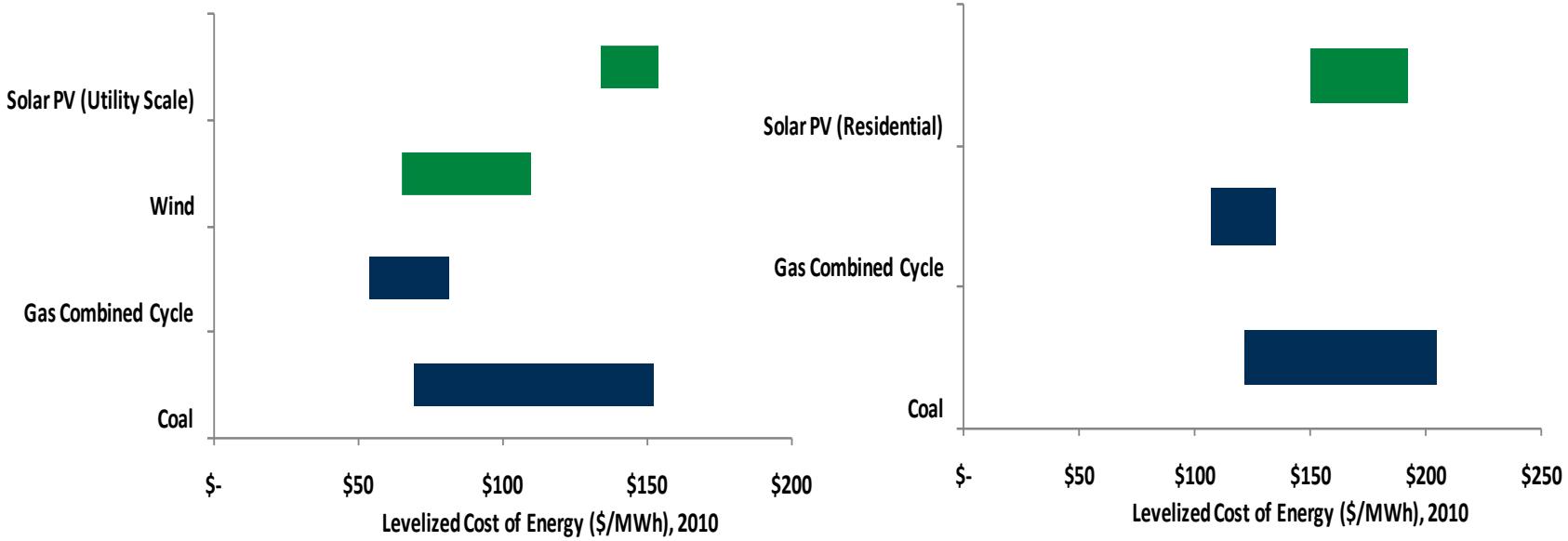


Solar Efficiency Trends



Market Driver: Increasingly Cost Competitive

U.S. Levelized Cost of Wholesale & Retail Energy, 2010



Sources: "Levelized Cost of Energy Analysis – Version 4.0", Lazard, June 2010; Hudson Clean Energy Partners estimates
Notes: Solar PV assumes conventional silicon modules; gas assumes $4/MMBtu; retail energy for gas and coal incorporate a $53/MWh cost of transmission and distribution

Policy Context

www.dsireusa.org / November 2010

www.dsireusa.org / November 2010

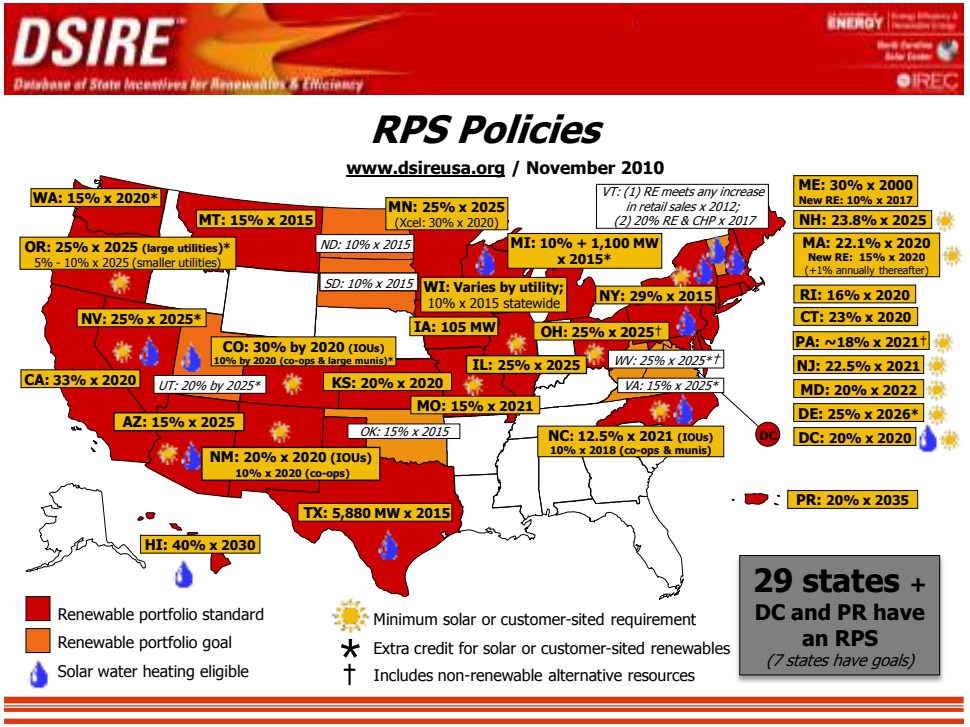
- Energy sector– one of most heavily regulated & subsidized markets

- Issue is not free market vs. regulated market
  BUT…
- What is minimum amount & proper mix of carrots & sticks, policies & market rules, that will unlock free market forces:
  - Market demand
  - Private sector financing

  ….within the regulated market?

State Policy Driver: RPS

- Federalism – state policy complements federal policies
- Important market demand driver
- States RPSs responsible for 80% of non-hydro renewable generation
- Will drive 90 GW of renewable energy by 2025 (according to UCS)

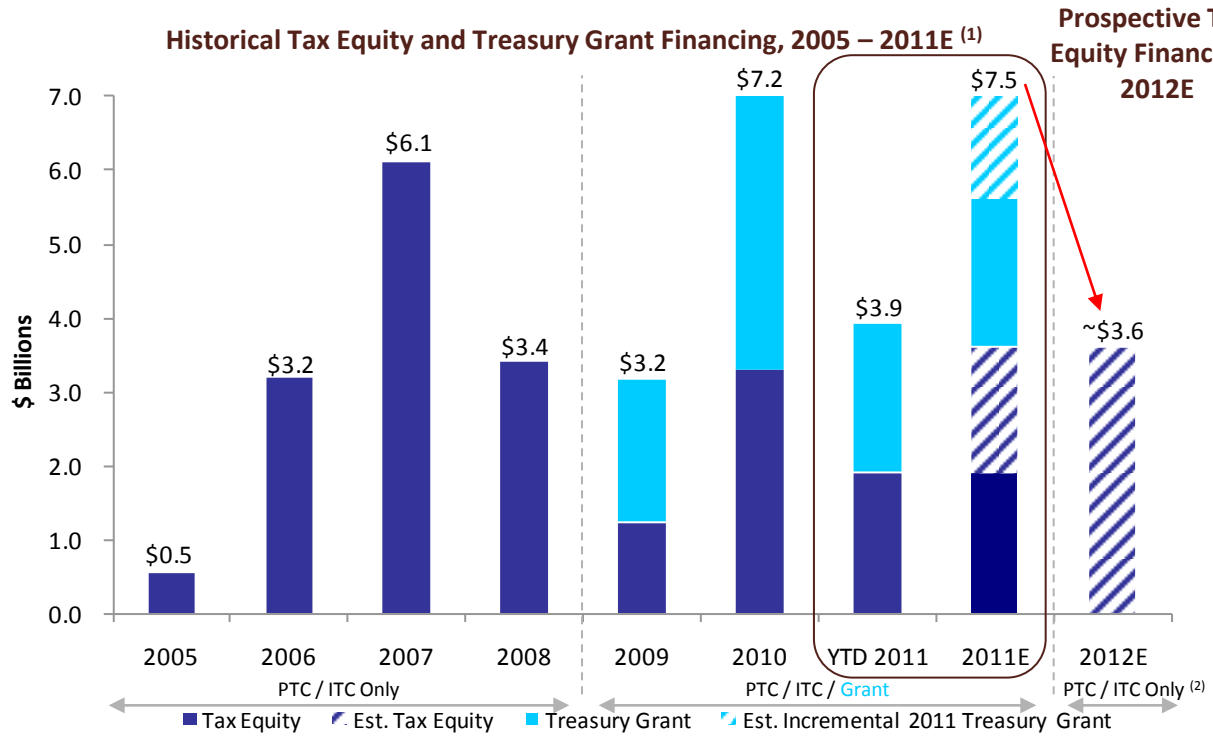


Federal Finance Policy – "At Risk"

- **Current Policy**
  - **PTC** (Expires 12/31/12)
  - **ITC** (Expires 12/31/16)
  - **1603 Grant in Lieu of ITC** (Expires 12/31/11) - **$7.8 billion leveraged ~$25 billion in total investment**
    - Extension possible
  - **1703, 1705 Loan Guarantees** - **$2.5 billion leveraged $20 billion in total investment**
    - 1705 - CR rescind all unobligated balances that remain from stimulus package as of 2/11/11
    - 1703 – Authority reduced by $25 billion to $3.5 billion
  - **48C Manufacturing Tax Credit** ($2.3 allocated and spent)
- **Proposed Policy**
  - **CEDA/Green Bank**
  - **Master Limited Partnerships (MLP)** – applicability to renewables

Success of the 1603 Treasury Grant

- In 2009, the Section 1603 Cash Grant program was introduced and stabilized the renewable energy market by providing $1.9 billion of cash grants in lieu of tax credits, more than doubling the depth of the $1.2 billion broken tax equity market and keeping the level of renewable energy project finance nearly constant with levels achieved in 2008. **This was a successful Federal program**
- In 2010, the Section 1603 Cash Grant program accelerated the penetration of the renewable energy market by providing $3.9 billion of cash grants in lieu of tax credits – the Cash Grant continued to fill a void for renewable energy project finance in a market place with an overall shortage of tax equity; **promoting job growth, installation of renewable MWs, and broader economic development**
- The tax equity market has recovered since the depths of the financial crisis in 2009, but the cash grant continues to play a crucial role in meeting the demand for renewable energy project finance by **promoting job growth, installation of renewable MWs, and broader economic development**



Last year's US PREF tax equity study estimated there would be ~$3.0 billion of tax equity available in the market place through the end of 2010 – by the end of 2010 ~$3.3 billion of tax equity was deployed.

Last year's study estimated there would be ~$3.0 billion in a normal market of tax equity available in 2011 – year-to-date $1.9 billion in tax equity has been deployed, this study estimates by year end 2011 there may be ~$3.6 billion of total tax equity

Sources: U.S. Department of The Treasury, US PREF Estimates, Leading Tax Equity Market Participants

(1) Includes all 1603 Treasury Grants for renewable projects

(2) Projects with 5% equity spend or in continuous construction prior to 12/31/2011 and that achieve COD by 12/31/2012 are eligible for the Section 1603 cash grant

Federal Policy Drivers

- **National RES/CES?**:
  - 80% CES by 2035 (President Obama)
- **EPA MACT Rules – coal plant retirements**
  - Offset by new renewables, efficiency & gas
  - As much as 40% of existing fleet by 2020
- **FERC renewables Integration**
  - Order 1000 – Transmission planning & cost allocation
  - Diversify generation, increase market competition, support consumer interests - feed-in tariff/Renewable Energy Standard Offer Rates & Contracts (RESO)
- **DOE EERE R&D Budget**:
  - FY 2012 Request = $3.2 billion (+$984 million)
  - FY 2012 Senate Approps (9/7) = $1.8 billion (equal to FY 2011)
  - FY 2012 House Approps = $1.3 billion

ACORE
American Council On Renewable Energy

Thank you!

www.acore.org