

NASEO National
Association
of State Energy Officials

State Renewable Energy Incentives: U.S. Experience



December 12, 2011



of State Energy Officials



About NASEO

- Only national non-profit organization whose membership includes the 56 governor-designated energy officials from each state and territory
- Improve the effectiveness of state energy programs and policies
- Seven Regional Coordinators across the nation to aid in sharing lessons learned for successful policy and program replication
- Act as a repository of information on issues of particular concern to the states and their citizens (e.g., financing, buildings)
- Committee structure includes, Renewables, Electricity, Buildings, Industry, Energy Assurance, Financing, Government Affairs
- Serve as the voice of SEOs in Washington, DC

+ The Nation's 56 State and Territory Energy Offices



- Vital Resource
- Connect with utilities
- Support the private sector
- Advise State Legislators and Governor on policy development (e.g., RPS, public benefit funds)
- Advance retrofits and energy management in buildings
- Deliver public energy efficiency education
- Conduct statewide energy planning
- Demonstrate and pilot innovative energy projects



Presentation Outline

- Renewable Portfolio Standards
- Direct Incentives
- Economic Development
- Transmission Infrastructure
- Barriers to Implementation
- NASEO/ASERTTI Renewable Energy Committee





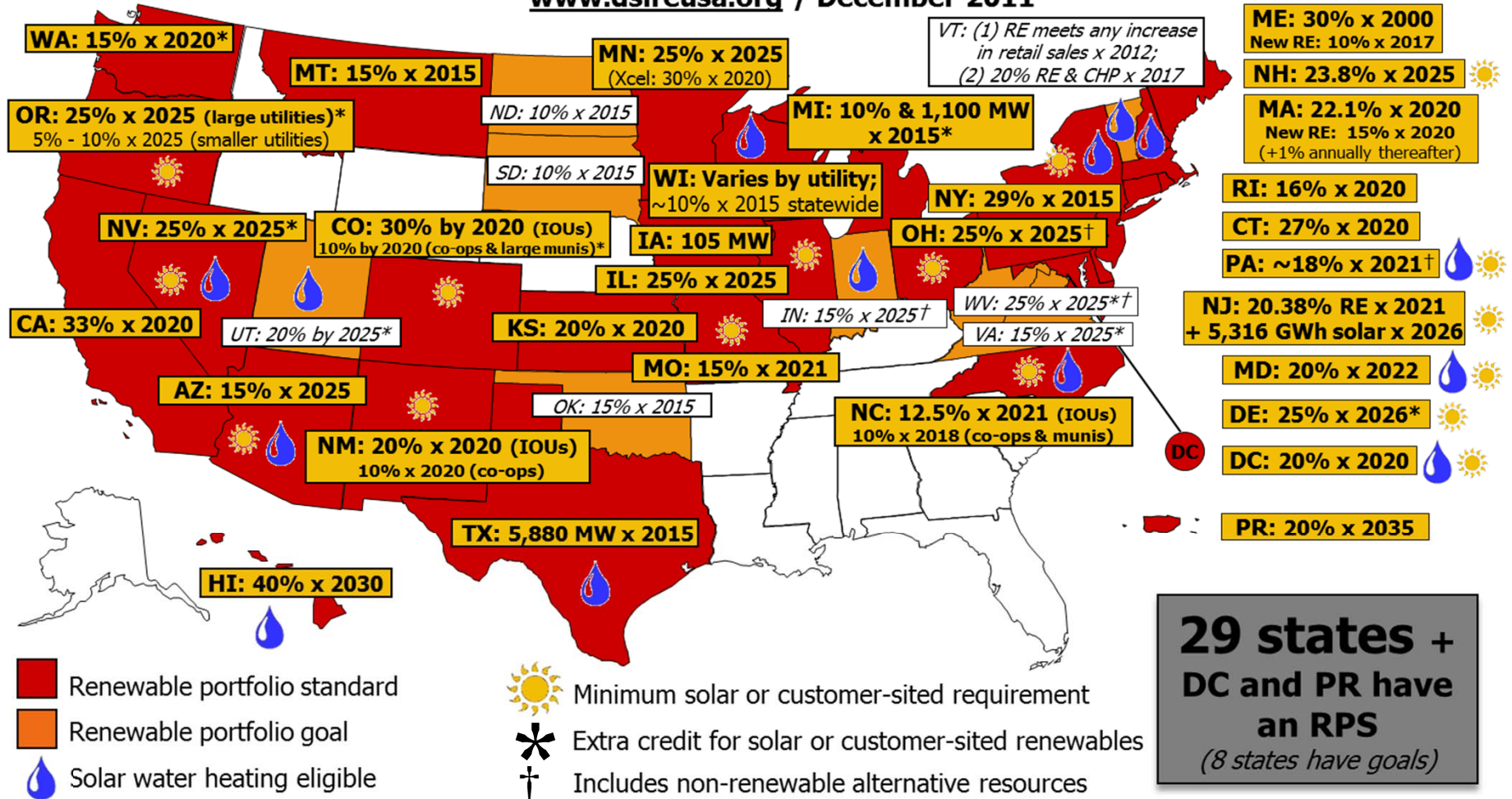
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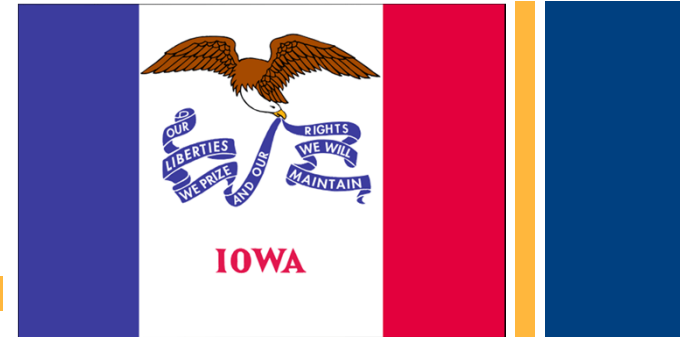
+ State Renewable Portfolio Standards

www.dsireusa.org / December 2011



29 states + DC and PR have an RPS
(8 states have goals)

+ Iowa Alternative Energy Law



■ Alternative Energy Law

- Passed in 1983 (amended in 2003)

■ 105 MW of Renewable Energy Statewide

- Combined total for the two IOUs in the state
- MidAmerican Energy: 55.2 MW (52.57% of demand)
- Alliant Energy Interstate Power and Light (IPL): 49.8 MW (47.43% of demand)



Oregon RPS



- **Oregon Renewable Energy Act of 2007**
 - Large Utilities (serving more than 3% of state's load)
 - 25% by 2025
 - Mid-size utilities (serving 1.5 – 3%)
 - 10% by 2025
 - Small Utilities (serving < 1.5%)
 - 5% by 2025
- **Renewable Energy Credits purchased to demonstrate compliance**
- **2009 Legislation**
 - IOUs to develop 20 MW-AC of solar PV by Jan 1, 2010
 - Multiplier for systems operational prior to January 1, 2016



North Carolina



- **Renewable Energy and Energy Efficiency Portfolio Standard (REPS)**
 - Passed in 2007
 - 12.5% of 2020 retail electric sales in NC by 2021 (applies to IOUs)
 - 0.20% from solar
 - 0.20% from swine waste
 - 900,000 MWh from poultry waste
 - Up to 25% of the REPS requirement may be met through energy efficiency
- **Compliance demonstrated through RECs acquisitions**
 - Utilities may meet up to 25% of REPS requirement from out of state facilities

- **Cost cap per customer account:**

Sector	2008	2012	2015
Residential	\$10	\$12	\$34
Commercial	\$50	\$150	\$150
Industrial	\$500	\$1000	\$1000



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+ State Renewable Energy Financial Incentives

Financial Incentive	Number of States
Personal or Corporate Tax Credit	24
Sales Tax Deduction/Exemption	29*
Rebates	21**
Public Benefits Funds	20**
State Property Tax Incentives	33*
Loan Programs	37
Grant Program	16*

* includes Puerto Rico

** includes Puerto Rico and the District of Columbia

+ New Jersey: Renewable Energy Incentives

Industry Recruitment/Support

- Edison Innovation Clean Energy Manufacturing Fund - Grants and Loans
- Edison Innovation Green Growth Fund Loans
- Wind Manufacturing Tax Credit

Utility Incentive

- PSE&G - Solar Loan Program
- Utility Solar Financing Programs (ACE, JCP&L, RECO)

Performance-Based Incentive

- Grid-Connected Renewables Program
- New Jersey Board of Public Utilities - Solar Renewable Energy Certificates (SRECs)

Property Tax Incentive

- Assessment of Farmland Hosting Renewable Energy Systems
- Property Tax Exemption for Renewable Energy Systems

Sales Tax Incentive

- Solar Energy Sales Tax Exemption

State Loan Program

- Clean Energy Solutions Energy Efficiency Revolving Loan Fund

State Rebate Program

- New Jersey Renewable Energy Incentive Program
- Renewable Energy Manufacturing Incentives (for End-Use PV Installations)

+ Hawaii: Renewable Energy Incentives



Corporate Tax Credit

- Solar and Wind Energy Credit (Corporate)

Green Building Incentive

- Priority Permit Processing for Green Buildings

Local Loan Program

- Honolulu - Solar Roofs Initiative Loan Program
- Maui County - Solar Roofs Initiative Loan Program

PACE Financing

- Local Option - Special Improvement Districts

Performance-Based Incentive

- Hawaii Feed-in Tariff

Personal Tax Credit

- Solar and Wind Energy Credit (Personal)

State Loan Program

- Farm and Aquaculture Alternative Energy Loan

State Rebate Program

- Hawaii Energy - Energy Efficiency Rebate Program
- Hawaii Energy - Energy Solutions Business Appliance Rebates and Customized Incentives Program
- Hawaii Energy - Solar Water Heater Rebate

Utility Loan Program

- KIUC - Solar Water Heating Loan Program

Utility Rebate Program

- KIUC - Solar Water Heating Rebate Program

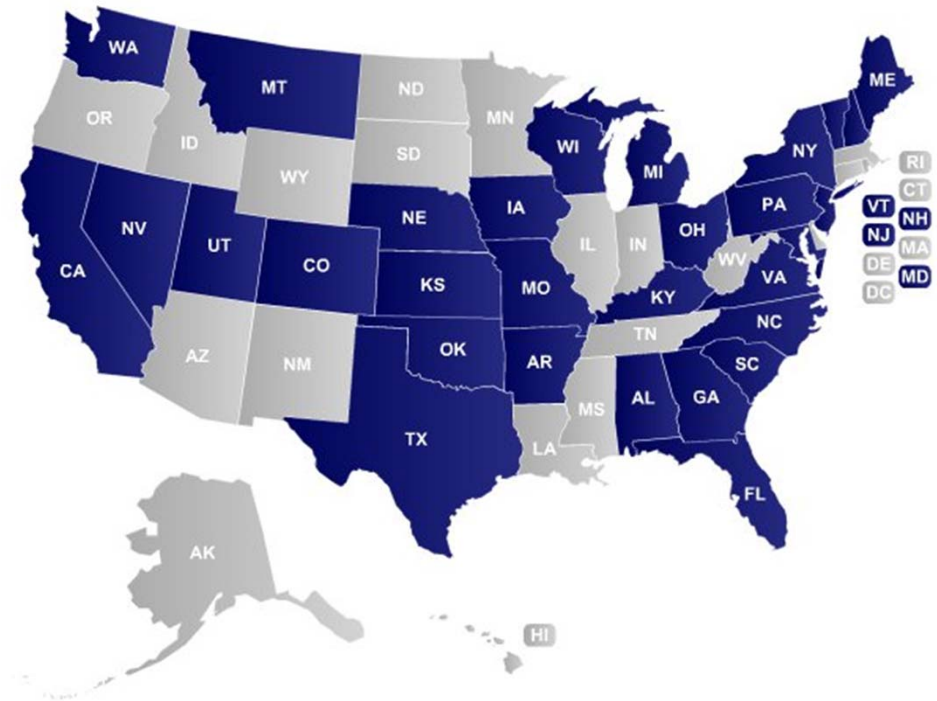
Property Tax Incentive

- City and County of Honolulu - Real Property Tax Exemption for Alternative Energy Improvements

+ NASEO State Energy Loan Fund (SELF) Database

- 34 states
- 66 funds
- Over \$925,000,000 in state energy revolving loan funds

- Contains Information on:
 - Funding sources
 - Fund size and focus
 - Web links
 - Contact information



<http://www.naseo.org/resources/selfs>



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+ Technology Collaboratives



- **CO Renewable Energy Economic Development (CREED)**
 - Catalyst for economic development through clean energy and energy efficiency innovation and entrepreneurship
 - Stakeholders support the creation and growth of cleantech companies throughout the state
 - Joint NREL – State of Colorado activity

- **NY-BEST Consortium (New York)**
 - Industry-focused coalition on advanced battery and energy storage
 - Operates with support and guidance from NYSERDA and builds on existing cluster of companies and research capabilities – three DOE Frontier Research Centers, twenty universities, and BNL
 - Funding exploratory research, joint projects among companies, universities, and labs.

+ State Public-Private Renewable Energy Projects

- **Georgia** - Community grants demonstrating a solar technology developed by the Georgia Institute of Technology
 - **Illinois** - Supporting a geothermal heating/cooling project at four Rantoul schools resulting in 145 local jobs
 - **Maryland** - Through MEA's innovative Project Sunburst grant program, awarded local governments over \$9 million to engage in power purchase agreements for over 9 MW of solar
 - **Massachusetts** - \$8 million in solar rebates leveraged \$32 million in private capital for 100 large solar projects
 - **Missouri** - Developing five farm and landfill biogas projects creating 30 permanent and 100 temporary jobs
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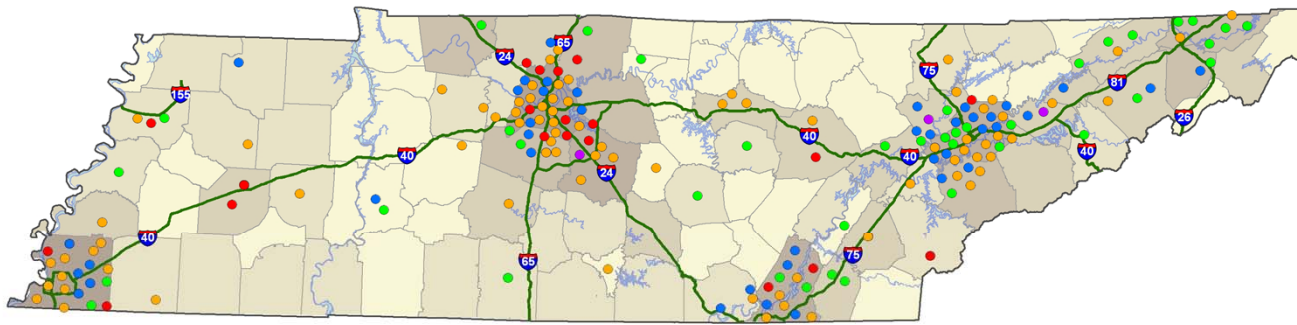


State Energy Office
Support & Linkage to
Broader State
Energy Related
Economic Growth
Initiatives

- **California** - California Infrastructure and Economic Development Bank (I-Bank)
- **Florida** - Enterprise Florida
- **Maryland** - Invest Maryland
- **Michigan** - Pure Michigan Business Connect
- **New York** - Regional Economic Development Council
- **Ohio** - Ohio Third Frontier
- **Tennessee** - Jobs4TN/INCITE
- **Texas** - Texas Enterprise Fund
- **Virginia** - Commission on Economic Development and Job Creation

+ Tennessee: Solar and Economic Development

Tennessee Solar Value Chain - 2011

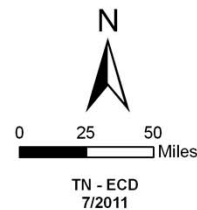


Primary Category

- Solar Distributor
- Solar Installation
- Solar Manufacturing
- Solar Research and Dev
- Solar Service

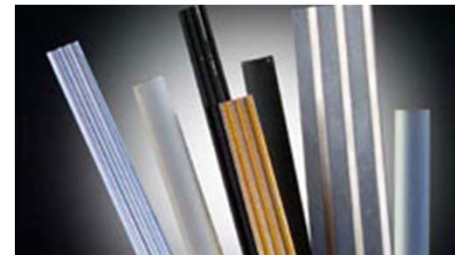
County Population

- 1 - 25,000
- 25,001 - 50,000
- 50,001 - 100,000
- 100,001 - 250,000
- 250,001 - 500,000
- 500,001 - 1,000,000



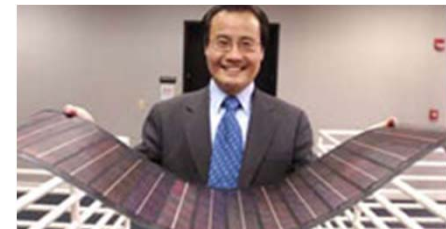
+ Ohio Third Frontier: Advanced Energy Program

- **Goal:** accelerate development and growth of the advanced energy industry in OH
- **Financing:** direct financial support to companies and organizations commercializing addressing technical and commercialization barriers to advanced energy systems, products, or processes
- **Renewables:** preference given to wind, biomass, and energy storage



+ Ohio Third Frontier: Solar Technology Hub

- \$33 million invested in the PV industrial cluster in NW Ohio
- 5,000+ solar energy jobs created in Toledo area in last 5 years
- First Solar – largest PV manufacturing company in the world
- Partnerships with the University of Toledo:
 - \$18.6 million grant to established the Photovoltaic Innovation Center
 - Recruit new faculty:
 - \$8 million Ohio Research Scholars Program grant
 - McMaster family donation of \$2 million
 - New Companies:
 - Xunlight - \$40 million in venture capital funding





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+ Transmission Infrastructure: ERCOT Example

Competitive Renewable Energy Zone (CREZ):

- Geographic area where wind generation facilities will be constructed





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+ Barriers to Implementation



■ Distributed Generation:

- Cost
- Net metering limits
- Rate design
- Interconnection procedures
- State tax policy

■ Utility-Scale Renewables:

- Need new transmission infrastructure
- Long interconnection queues
- Complicated utility RFP processes

■ Consumers:

- Consumer education
- Consumer access to loans or credit

■ Workforce Development:

- Training and certifying renewable energy installers and technicians

■ Political gridlock

■ Regulatory Uncertainty

■ General Economy



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Joint NASEO- ASERTTI Renewable Energy Committee

- Support the development of project and program implementation strategies to accelerate commercialization
- Identify issues and strategies to enhance the capabilities and success of existing efforts among states, DOE and the national labs
- Identify and share demonstrable program and project case studies
- Provide technical support to reduce gaps and barriers among basic and applied research

+ Committee Priorities



- Provide policy input for consideration by NASEO's Board (e.g., FERC Order No. 1000, standby charges)
 - Advance small community wind opportunities
 - Examine feed-in tariffs
 - Disseminate information on emerging renewable technologies
 - Develop best practices on streamlined, lower cost approaches to renewable siting and permitting
 - Multi-state grid integration and storage projects
 - The role of renewable energy in statewide energy plans
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NASEO Staff

- David Terry, Executive Director
- Jeff Genzer, General Counsel
- Kate Marks, Managing Director
- Bill Nesmith, Senior Advisor, Industrial Program
- Chuck Clinton, Senior Advisor, Regional Program
- Maurice Kaya, Senior Advisor, Renewables Program
- Jeff Pillon, Director – Energy Assurance
- Shemika Spencer, Grants and Programs Manager
- Diana Lin, Program Manager, Buildings
- Julia Friedman, Program Manager, Electricity
- Garth Otto, Project Manager



NASEO Regional Coordinators



- Chuck Clinton, Regional Coordinator – Mid Atlantic
 - Chuck Guinn, Regional Coordinator – Northeast
 - Brian Henderson, Regional Coordinator – Southeast
 - Jeff Pillon, Regional Coordinator – Midwest
 - Jim Ploger, Regional Coordinator – Central
 - Jim Arwood, Regional Coordinator – Southwest
 - Bill Nesmith, Regional Coordinator – Northwest
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Questions?
Thank you!

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