BIOMASS & CARBON POLICY TRENDS

October 28, 2015

Jessie Stolark

Policy Associate, Sustainable Biomass

EESI
Environmental and
Energy Study Institute

EESI
Environmental and
Energy Study Institute

- Founded in 1984 by a bipartisan Congressional caucus as an independent non-profit organization (but receives no Congressional funding)
- Source of non-partisan information on energy and environment policy development for Congress and other policymakers
- Climate change is one of the most serious problems facing civilization today — impacting infrastructure, water supply, agriculture, public health and natural ecosystems

Outline:

- Clean Power Plan timeline & discussion
- Biogenic Carbon Framework & the Clean Power Plan
- What role does biomass already play in U.S. generation?
- What are states be doing to utilize these resources? Could they do more?

EESI

Clean Power Plan – Brief History

- 1970 Clean Air Act
  - Regulates local and regional pollutants
  - Designed for new sources
  - CO2 is not an air pollutant under the act
- 2007 Massachusetts v. EPA
  - Compelled EPA to re-examine whether GHG require an endangerment finding
- 2009 EPA Endangerment finding
  - GHGs are an endangerment to public health

EESI

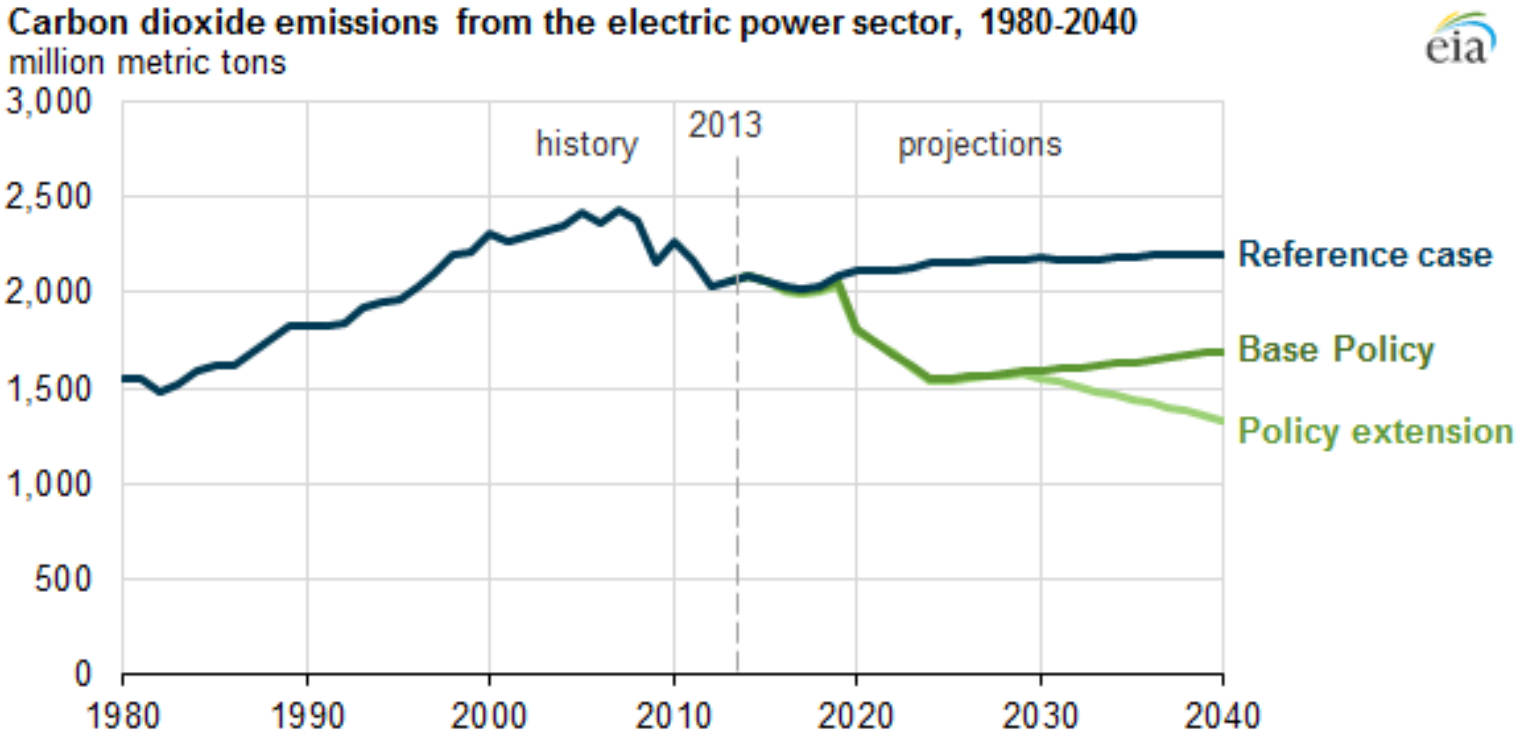
Clean Power Plan – Timeline

- June 2014: EPA publishes CPP proposal
- November 2014: EPA publishes updated *Framework*
- December 2014: EPA receives 4.3 million comments on draft rule
- August 2015: EPA publishes final rule
- Summer 2016: States submit plans
- 2020: Compliance begins
- 2030: CO2 reductions met

EESI

Clean Power Plan – Overview

- Overall: 32% cut in CO2 emissions from power plants relative to 2005 emissions



EESI

Clean Power Plan – 3 Building blocks

1. Coal plant efficiency: Improve the heat efficiency of fossil fuel power plants.
2. Natural gas: Substitute lower emissions power generation.
3. Renewable & nuclear energy: Install zero emissions power generation.

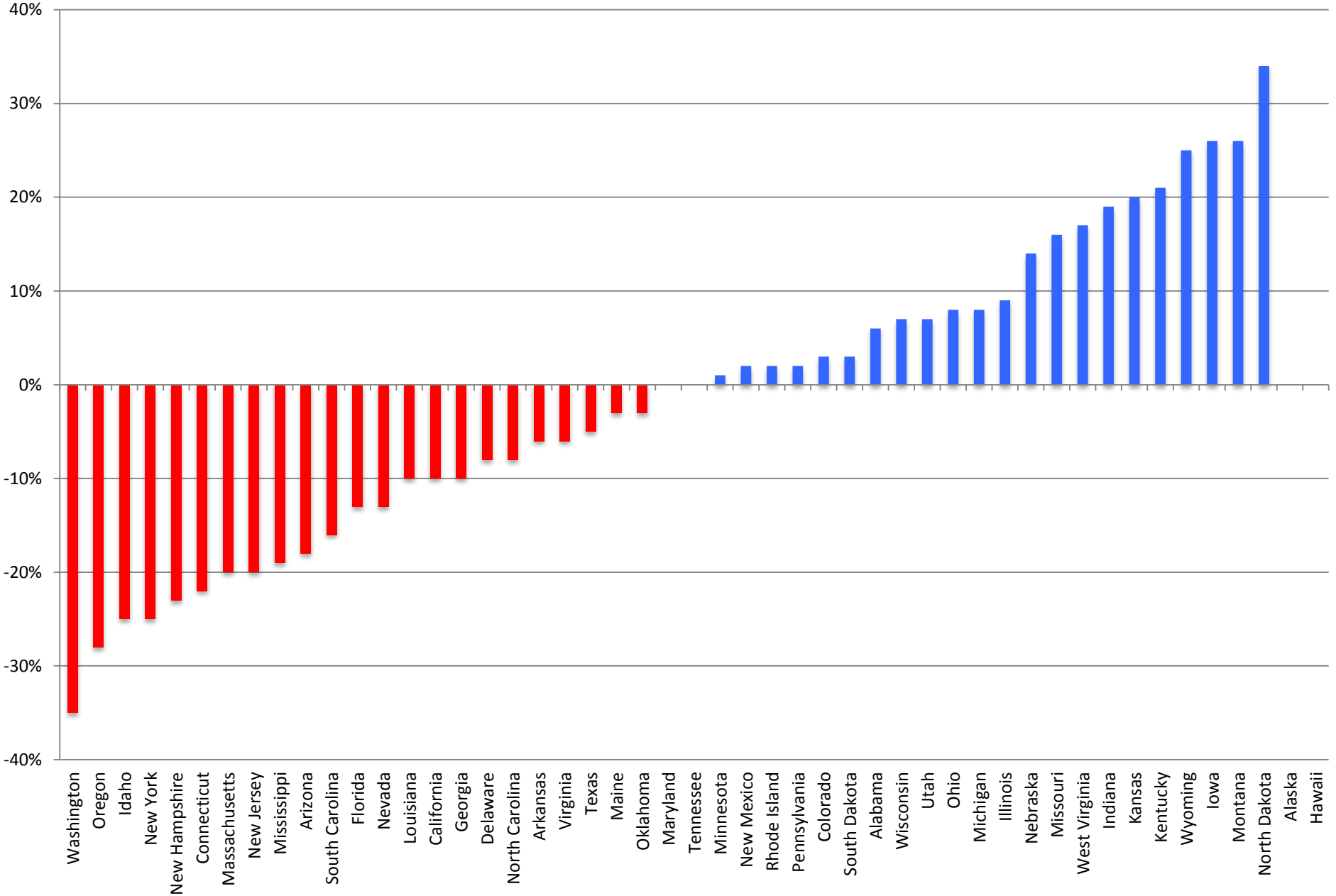
EESI

Clean Power Plan – Final vs. Proposed

- More ambitious
- More time to write compliance plans
- Compliance starts 2 years later (2020)
- More compliance options for states
- Removal of EE from building blocks
- Assumes greater use of renewables
- Incentives for RE/EE in low-income communities

EESI

Final vs. Proposed CPP: Percent Change



Clean Power Plan – State targets, flexibility

- States have individual reduction targets

- States will establish individualized plans
  - Rate based: CO2 lbs/MWh – favors economic development
  - Mass based: short tons CO2 – "trading ready"

- If states do not establish state plans, EPA will impose & implement Federal plan

EESI

Clean Power Plan – Estimated Benefits

- Total Cost: $8.4 billion
- Total Health & Climate Benefit: $34 - 54 b.
- Save consumers $7/month by 2030
- Reduction in CO2, particulates, ozone
  - Avoid up to 90,000 cases of asthma in children
  - Avoid between 1,500 and 3,600 premature deaths by 2030
  - Avoid 300,000 missed work & school days

EESI

Framework for Biogenic Carbon Emissions

- EPA recognized need to adjust stack emissions for biogenic feedstocks
  - Ability to sequester carbon in biomass & soil over short timeframe
- 2010: tasks independent Scientific Advisory Board (SAB) to develop method to calculate this adjustment factor
- Biogenic Accounting Factor (BAF) needed for different feedstocks and regions

EESI

Framework for Biogenic Carbon Emissions: November 2014

EPA recognizes the role that using "waste-derived feedstocks" and "forest-derived industrial by-products" can play in the low-carbon economy, as they "are likely to have minimal or no net atmospheric contributions of biogenic CO2 emissions, or even reduce such impacts, when compared with an alternate fate of disposal."

EESI

Biomass and Final Clean Power Plan: August 2015

- States "must describe the types of biomass that are being proposed for use"
- Must describe how "those proposed feedstocks or feedstock categories should be considered as 'qualified biomass'"
- EPA recognizes "CO2 and climate policy benefits of waste-derived biogenic feedstocks and certain forest- and agriculture-derived industrial byproduct feedstocks"
- "Not all forms of biomass are expected to be approvable as qualified biomass"

EESI

Finalizing the *Framework*

- Key questions remain to be answered by SAB:
  - Baseline approach
  - Spatial/temporal scale
  - Alternative fate
  - Leakage

- Expect finalized *Framework* in late 2015 or early next year

- Will it provide regulatory clarity to states on quantified biomass?

EESI

Unanswered Questions

- Will the *Framework* be clear and implementable?
  - –Will EPA have a model plan for biomass utilization?
  - –What is "quantified biomass"?
- Who will be regulated?
  - – States, utilities, biomass industry?
- How will they show compliance?
  - – States will need monitoring & reporting methods

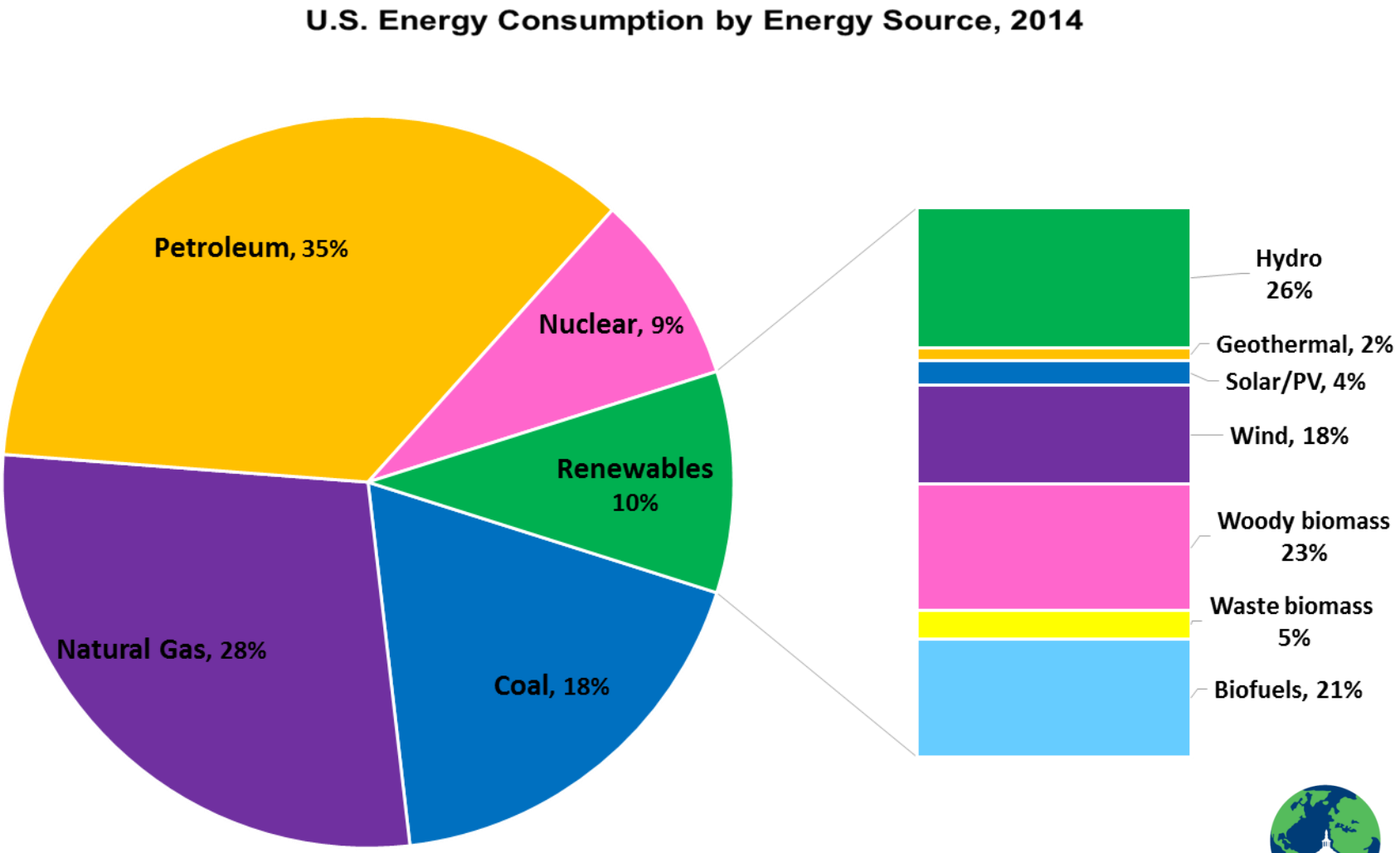
EESI

Federal, State Support of Biomass: Beyond CPP

- Is the *Framework* out of step with the Administration's carbon strategy?
  - U.S. Global Change's National Climate Assessment
  - Renewable Fuel Standard
  - Farm Bill programs
  - Department of Interior, U.S. Forest Service
- What are states doing already?

EESI

Current Role of Biomass in Energy Use

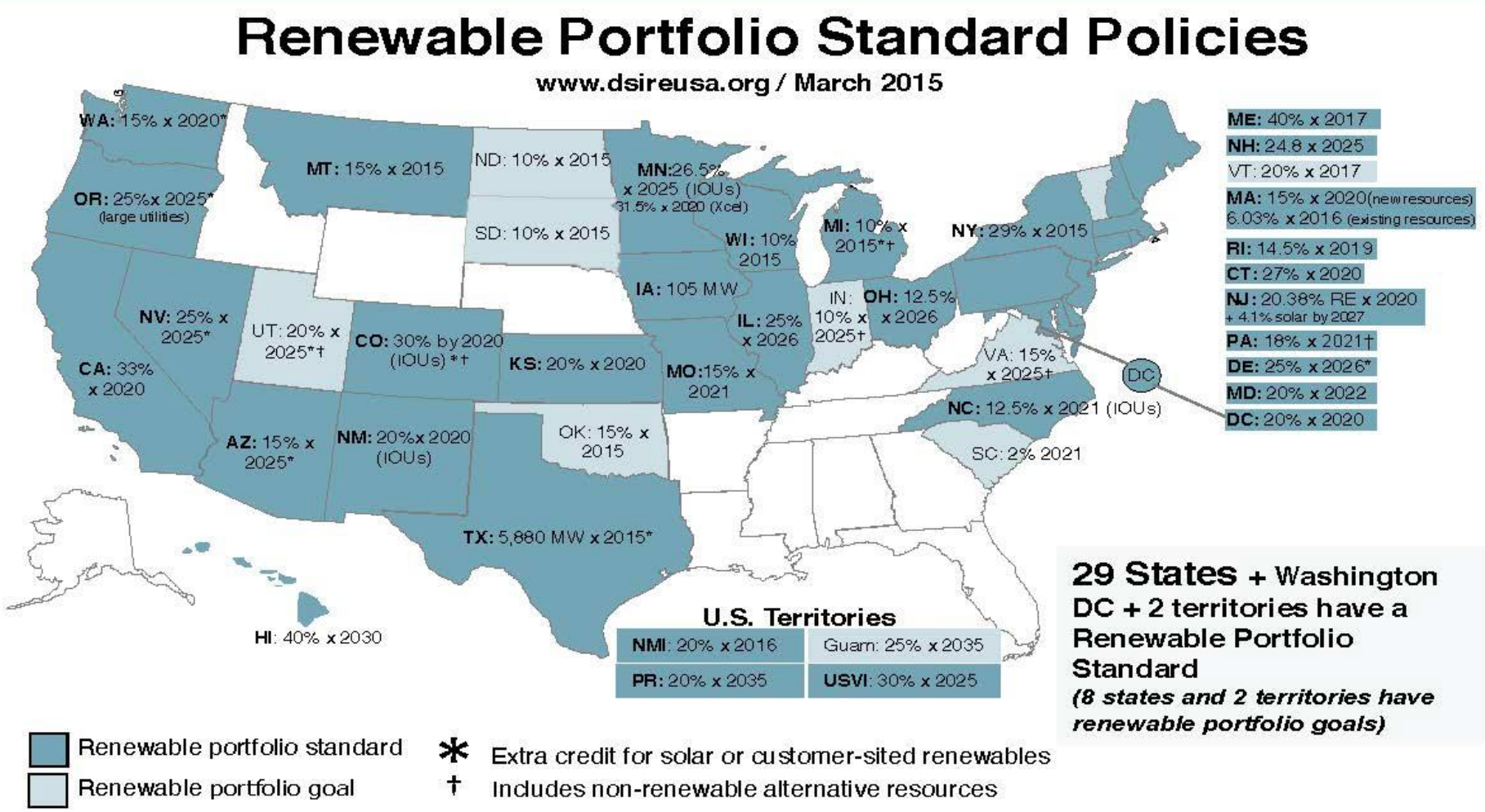


Source: U.S. Energy Information Administration, *Monthly Energy Review* (Sept. 2015)

EESI

Renewable Portfolio Standards

DSIRE® | NC CLEAN ENERGY TECHNOLOGY CENTER | U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



What States are Doing to Help Biomass

- Specifically recognizing biomass in RPS
- Creating carve-outs for DG
- Production Incentives
- Rebates
- Tax Credits

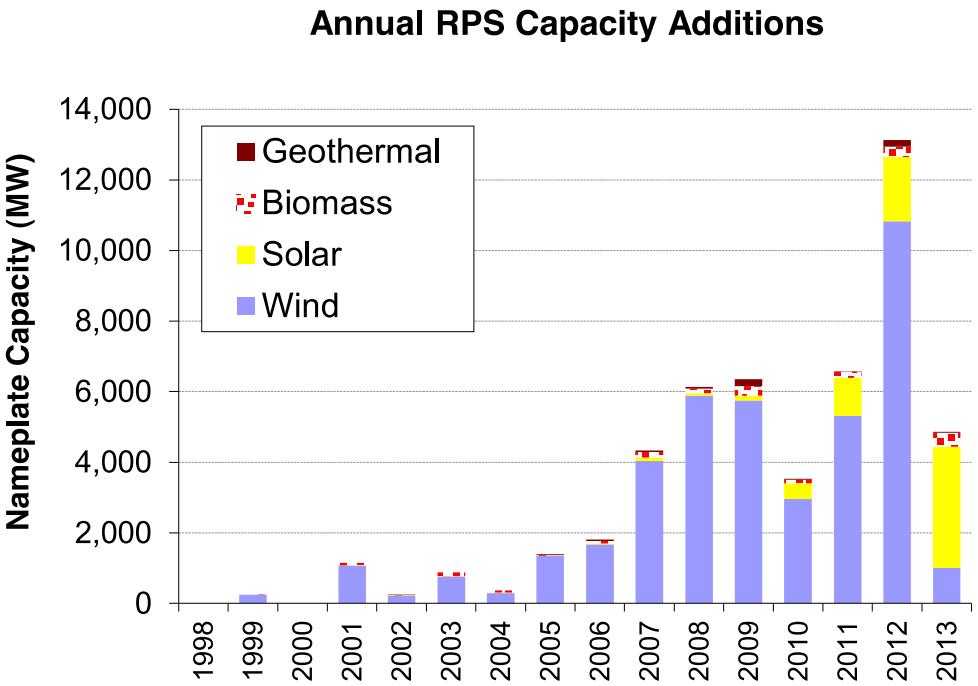
Flickr user D'Arcy Norman

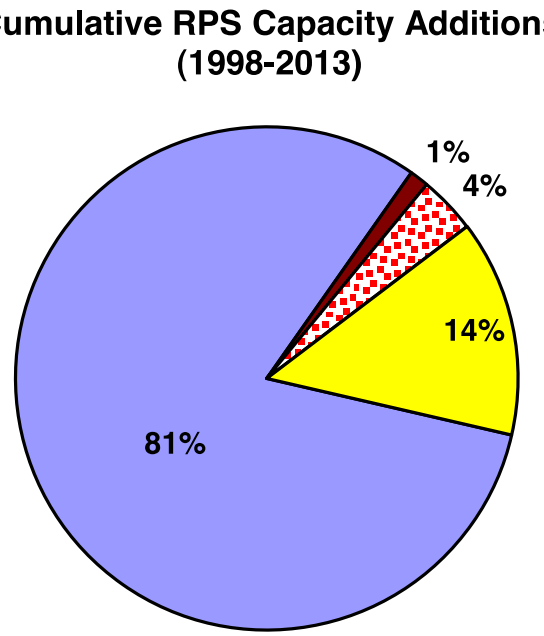
Courtesy of Wikipedia

Flickr user David Baron

EESI

Current Role of Biomass in RPS





Courtesy of Galen Barbose, Lawrence Berkeley National Laboratory

EESI

Installed Capacity - Examples
Biomass & Waste

State	MW installed as of 2012
Alaska	9.2 MW
Arizona	41.2 MW
California	1,416.8 MW
Colorado	18.2 MW
Idaho	148.1 MW
Montana	0 MW
Nevada	3.2 MW
New Mexico	6.6 MW
Oregon	402.6 MW
Utah	12.8 MW
Washington	403.3 MW
Wyoming	0 MW

Courtesy of ACORE, data from EIA. Includes combustion, anaerobic digestion, gasification, co-firing, landfill gas or pyrolysis.

Moving Forward on Biomass: 3 Scenarios

1. States with strong RPS
   - RPS still mostly wind, solar
   - In general, RPS not strong on distributed resources

2. States with sustainable biomass definitions
   - Oregon, California, Wisconsin, Michigan

3. States with neither
   - Could biomass help these states with compliance?
   - How to begin?

EESI

Role of Biomass Stakeholders

1. Listen
2. Communicate
1. Educate
2. Advocate

How to shrink Oregon's urban-rural divide? Listening helps: Editorial Agenda 2015

Forestland in Cave Junction, Oregon, pictured in 2013. *(File photo)*

EESI

Takeaways:

- Already see consistent support of biomass from federal agencies (USDA, DOE, USFS), Congress
- But, EPA still working to define “quantifiable biomass”
- States are integrating biomass into state RPS but role of biomass could be strengthened in RPS
- Role of certifications, sustainable biomass definition
- Will states miss the boat on biomass for CPP compliance?

Visit our website!

- **Visit www.eesi.org for today's slides, plus:**
  - Subscribe to our weekly newsletters:
    - *Sustainable Bioenergy, Farms and Forests*
    - *Climate Change News*
  - View videos and presentations for all of our Congressional briefings
  - Sign up to receive notice of our Congressional Briefings, Fact Sheets and more!

THANK YOU

Jessie Stolark
Policy Associate,
Sustainable Biomass

jstolark@eesi.org
202-662-1885

EESI
Environmental and
Energy Study Institute