



# **A Ranking of State Combined Heat and Power Policies**

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# The American Council for an Energy Efficient Economy (ACEEE)

- Non-profit 501(c)(3) dedicated to advancing energy efficiency
- Focus on end-use efficiency in:
  - Industry
  - Buildings
  - Utilities
  - Transportation
  - National Policy
- Funding from foundation and government grants, specific contract work, conferences and publications

# ACEEE's Annual Energy Efficiency Scorecard

- Ranks states on a variety of energy efficiency practices, policies and programs
  - CHP a targeted category due to potential to achieve great efficiency savings
- Calls out specific leaders and best practices
- 2009 version will be released this fall

# Encouraging CHP: Policies Needed

- CHP has been primarily consumer-driven
  - High energy costs
  - Concerns about reliability
  - Concerns about environmental harm
- Utilities have concerns about adding CHP to their systems, for technical and financial reasons
- Environmentalists have concerns about CHP's emissions

# The Policy Arena

Main take-away:

CHP faces a number of barriers that could be reduced with good policies, including:

- Interconnection standards
- CHP-friendly standby tariffs
- CHP-directed financial incentives
- Output-based air regulations
- Eligibility in RPS/EERS/other energy portfolios

# Interconnection Standards

What are they?

Uniform procedures and technical requirements for connecting CHP systems to the electric utility's grid

Why are they even an issue?

Allowing a CHP system to interconnect to the local electricity grid allows a CHP system to rely on the grid for backup electricity during peak times, or when CHP systems must be taken offline for maintenance

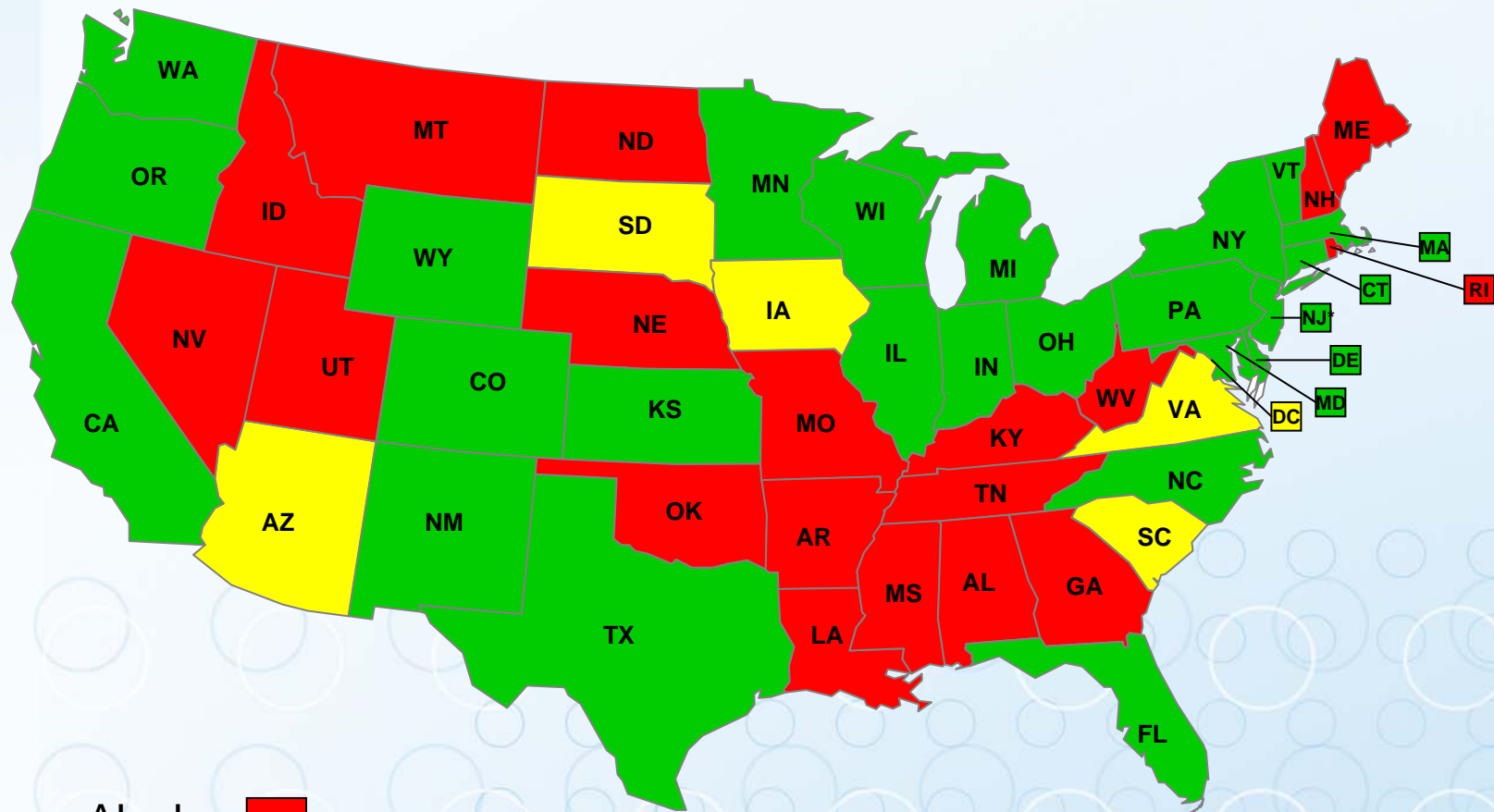
Many utilities, absent standardized interconnection regulations, are apt to make it difficult for CHP systems to interconnect due to disincentives for the utility



Can be evaluated based on the following items:




- Standard form
- Simplified procedure for smaller systems
- Eligible technologies
- Timeline for application approval
- Overall system and aggregate size limits
- Insurance requirements
- Technical requirements

The good news: Many state public utility commissions have adopted statewide interconnection standards

# Established State Interconnection Standards: Explicit CHP Standards in place - May 2008



Alaska:   
Hawaii: 

-  Interconnection standard exists, and includes CHP
-  Proposed interconnection standard includes CHP
-  No interconnection standard for CHP

## Examples of “Good” Interconnection Rules

The Oregon PUC adopted interconnection standards in July 2007

Nearly year-long stakeholder process

MADRI based rule

- Added “field certification” concept
- Non-inverter-based Level 2 fast tracking up to 2 MW
- Increases Level 1 to 25 kW

Allows non-residential IOU customers with systems up to 2 MW to interconnect

## Examples of “Good” Interconnection Rules

Connecticut’s Department of Public Utility Control adopted new interconnection standards in 2004, utilities developed specific implementation plans in 2007:

- Classic FERC-based rule:
  - Three tiers, up to 20MW in size
  - Scalable fees
  - Scalable administrative burden
  - Little guidance for systems beyond 20MW
  - Anecdotal evidence suggests good compliance

# Standby Rates

What are they?

- Mundane but very important!
- Rate at which CHP system owners are charged for the electricity they purchase from the grid
  - Can completely change economics of a CHP project
  - Historically: designed with utility's benefit primarily in mind
  - Advocacy on state level is changing this, slightly

# Standby Rates

## Considerations:

- What is the ratio of demand to energy charges?
  - Preferred: larger emphasis on energy
  - What we see: larger emphasis on demand
- What is used to develop demand charge?
  - Contract versus straight rate
- What kind of ratchets are employed?
- Few good examples
  - United Illuminating Company in Connecticut:
    - Moderate demand charge, high energy charge, no ratchet

# Tax-Based Financial Incentives

Two basic types:

- Up-front investment tax credit
  - E.g. 15% of investment up to a certain level
  - Fixed amount per project
  - Concerns: projects built to maximize credit
- Production tax credit
  - E.g. \$.01 per kWh
  - Lots of renewable energy, limited CHP application

Third category: property tax exemptions,  
“economic development” incentives

# Output-Based Air Regulations

What are they?

- Air regulations that calculate emissions based upon a CHP system's output, NOT fuel input

Why do we care?

- Calculating emissions based on fuel input ignores and fails to credit a CHP system's increased efficiency
- Direct relationship to cap-and-trade schemes, EERS

What makes a good one?

- One that relates emissions to “productive output” of the system



# CHP in Portfolio Standards

## Renewable Portfolio Standards (RPS):

- Require electricity providers to use renewable resources to generate a defined portion of a state's electricity portfolio
- Generally linked to financial incentives for participating
- CHP generally must be renewable-fueled for inclusion

## Energy Efficiency Resource Standards (EERS):

- Market-based, requires electricity providers to treat energy efficiency investments as a “source” of electricity generation, much like a power plant
- CHP more apt to be allowed within EERS than RPS
- States simplistically credit output if allowed; ACEEE promotes more comprehensive assessment for national EERS (next presentation)

# Portfolio Standards

- 12 states have enacted RPS or EERS policies that specifically include CHP or waste heat.
- New Jersey currently considering such policies

# Portfolio Standards

Good examples of inclusion of CHP in RPS/EERS:

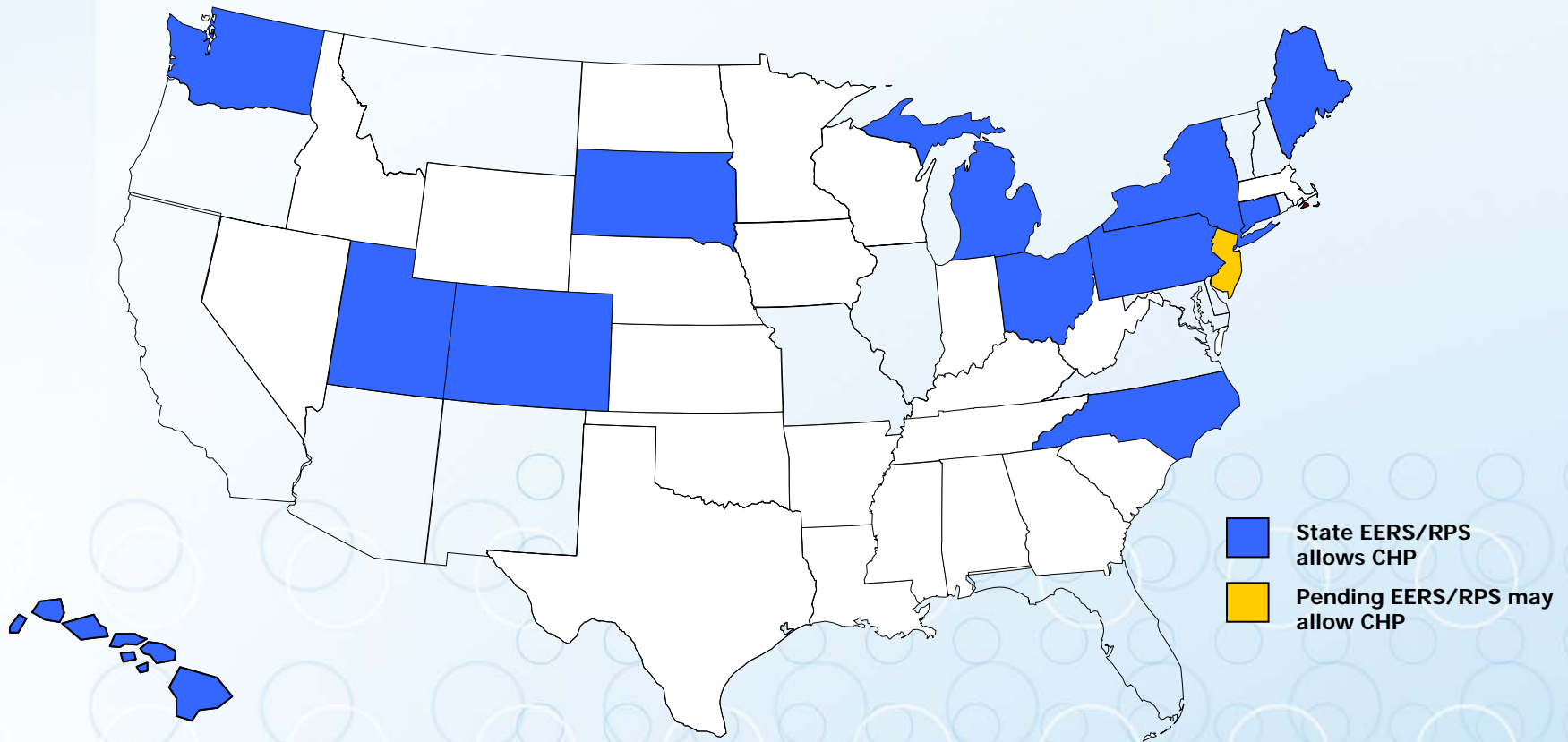
## Hawaii

- Defines “renewable electric energy” as including CHP, energy efficiency technologies, etc.
- Does not include CHP-specific target for these technologies

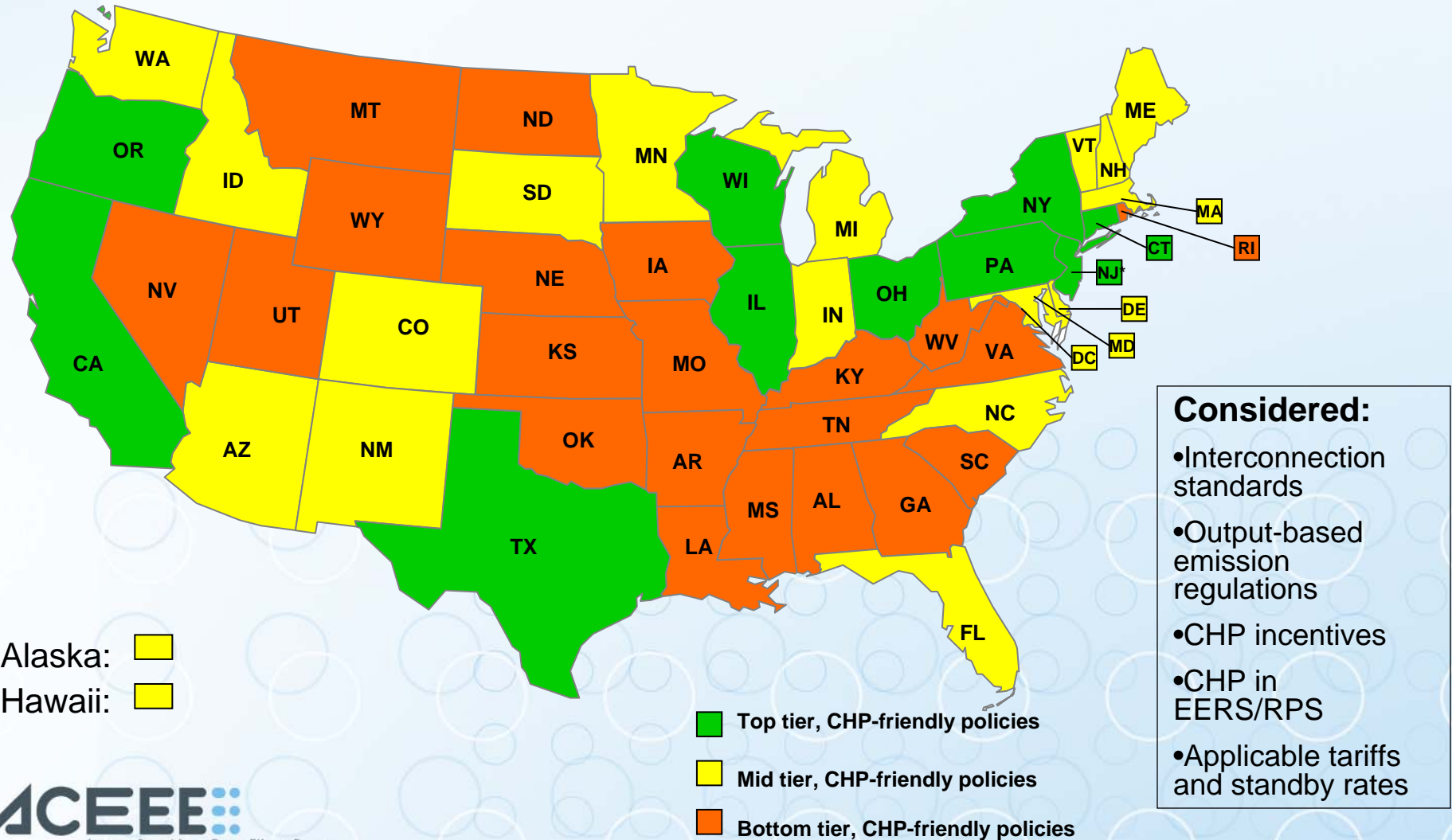
## Connecticut

- Breaks eligible technologies into three tiers, with separate targets for each. Class III includes CHP, energy efficiency technologies and waste heat recovery.
- Class III targeted at the 4% level from 2010 on

# Portfolio Standards: CHP in EERS/RPS



# How States are Doing on CHP?



# Recent Federal Policy Developments

- Investment tax credit
  - 10% up to first 15MW, systems up to 50MW
- Movement of EERS with CHP credit
  - ACEEE convened stakeholders to design
- Increased DOE funding
  - Via stimulus, for CHP/waste energy projects
- Some versions of proposed energy and climate bills look to directly address interconnection and standby rate issue
- Renewed emphasis on CHP activities at DOE
  - New funding, resources and scope for Clean Energy Application Centers?
  - 20% is implicit goal by EERE

# Conclusions

We are making progress!

- State-by-state efforts are paying off, many dockets opened and rules adjusted/expanded in response to EPA Act '05 language and new EERS targets
- CHP market healthy where the rules are right
- CHP can/should play an important role in state climate policies

# Questions?

**Thanks! Please contact us for more detailed state information:**

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ACEEE state policy database:

<http://aceee.org/energy/state/index.htm>