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***Tax Credits, Carbon Credits  
and  
Other Financial Incentives***

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Overview of Presentation*

- Tax Credits
  - Federal Tax Credits
  - State Tax Credits
- Carbon Credits
  - Carbon “Footprint”
  - Voluntary Market in United States
- Other Incentives
  - Renewable Energy Credits
  - State grant programs
  - State tax programs

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Three Key Views*

- Project developer's perspective
  - Project qualification
  - Project feasibility
  - Project structure considerations
- Investor perspective
  - Investment criteria
  - Availability
  - Risk assessment
- Government customer perspective
  - Value added
  - Risk vs. reward assessment

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Tax Incentives*

- Federal Tax benefits
  - Production Tax Credit (Section 45 of IRS Code)
  - Investment Tax Credit (Section 48 of IRS Code)
  - Grant in lieu of Tax Credit (Sec 1603 of ARRA)
- Tax depreciation benefits
- State tax incentives

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *The Section 45 PTC*

### The Federal Production Tax Credit (PTC)

- As authorized by the Energy Policy Act of 1992 and amended over time, Section 45 of the Internal Revenue Code provides a **10-year, inflation-adjusted production tax credit for power generated by certain types of renewable energy projects**, including wind, closed- and open-loop biomass, geothermal, landfill gas, municipal solid waste, qualified hydropower, and marine and hydrokinetic facilities.
- **For wind, closed-loop biomass, and geothermal power, the inflation-adjusted credit stood at \$21/MWh in 2008; the other eligible technologies receive half of the PTC's value (i.e., \$10/MWh in 2008).** Currently, wind projects placed in service before the end of 2012 will be eligible to receive the 10- year PTC, while the other renewable technologies have an additional year to come online (i.e., until the end of 2013)
- **Various rules and regulations surround the use of the PTC.** For example, to qualify for the PTC, the power must be sold to an unrelated party. Furthermore, certain limitations exist on the use of the PTC in combination with other public sector incentives, including grants, tax-exempt bonds, subsidized energy financing



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# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *The Section 48 ITC*

### **The Federal Investment Tax Credit (ITC)**

- Section 48 of the Internal Revenue Code was revised by the ARRA Act to provide an ITC for the types of renewable energy projects eligible for the PTC. The ITC is equal to 30% of the project's qualifying costs. The ITC is also available to geothermal, microturbines, and combined heat and power projects (all of which are eligible for a credit equal to 10% of the project's qualifying costs).
- In general, the ITC is currently available to qualified projects that are placed in service prior to the end of 2016, though the geothermal credit has no expiration date, and the solar credit will (unless otherwise extended) revert to 10%, rather than expiring altogether, at the end of 2016.
- The ITC is realized in the year in which the project begins commercial operations, but vests linearly over a 5-year period. Thus, if the project owner sells the project before the end of its fifth year of operations, the unvested portion of the credit will be recaptured by the IRS.



# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *PTC vs. ITC Comparison*

	<b>Section 45 PTC</b>	<b>Section 48 ITC</b>
<b>Credit Rate</b>	\$21/MWh (inflating)	30% Renewable Property
<b>Form</b>	Energy Production	Qualifying Capital Cost
<b>Basis Reduction</b>	No	Yes (50%)
<b>Carry back/forward</b>	1 / 20	1 / 20
<b>Owner – operate</b>	Yes	No
<b>Credit Received</b>	10 years	1 year
<b>Sunset</b>	2013 wind 2014 biomass	2016
<b>Recapture</b>	No	Yes (ratably, five years)

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *The Section 1603 Grant-in-lieu-of-ITC*

- Section 1603 of the ARRA - Election to receive cash grant
  - Eligibility requirements similar to those for ITC
  - Project generally must be placed-in-service in 2009 or 2010, or construction must begin before 2011 and project must be placed in service by credit termination date
- Application due before October 1, 2011

# *Tax Credits, Carbon Credits and Other Financial Incentives*

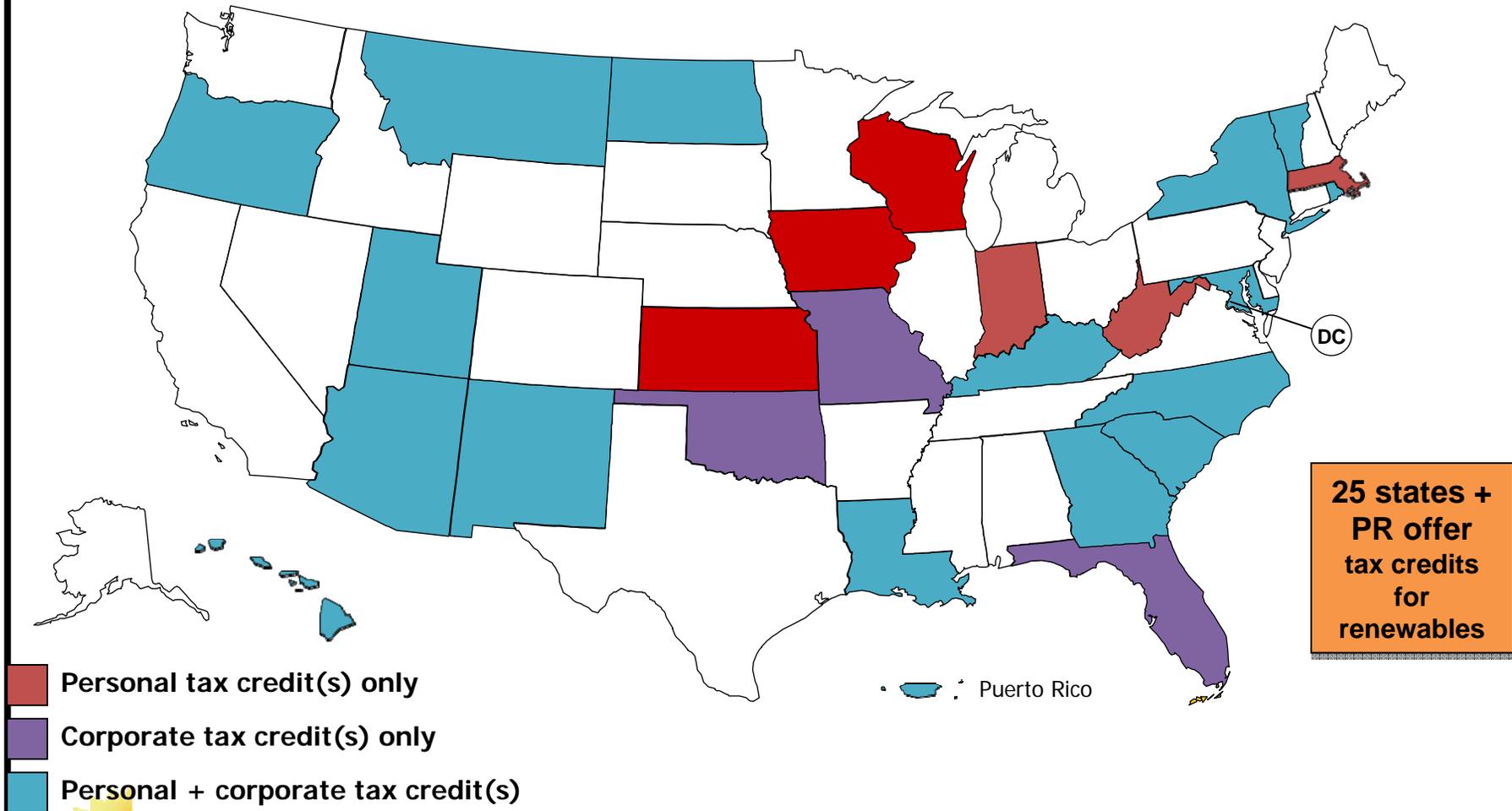
## *Tax Depreciation Benefits*

- Depreciation
  - Amortize asset over its useful life
  - Definitions important
  
- Accelerated depreciation
  - MACRS
  - Asset classes & lives

# State Tax Credits for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / June 2010

Notes: This map does not include corporate or personal tax deductions or exemptions; or tax incentives for geothermal heat pumps.



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# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Carbon Credits*

- **Carbon Footprint**

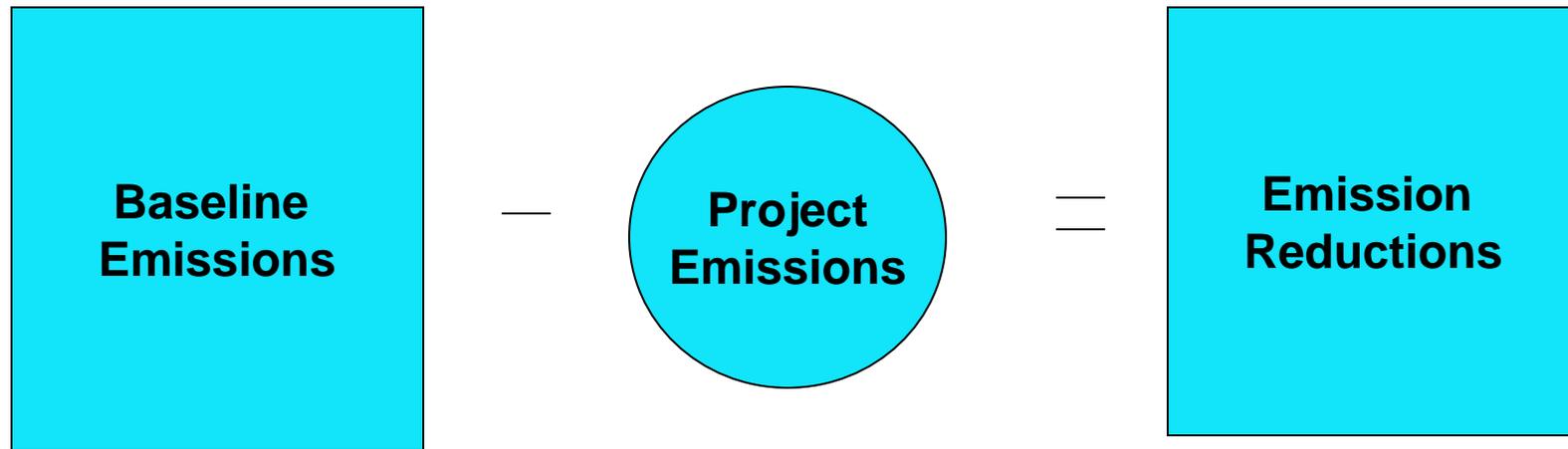
- Total amount of green house gases (GHG) produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>)
- Total amount of CO<sub>2</sub> and other GHGs emitted over the full life cycle of a product or service

- **Carbon Credit**

- The resulting value from reducing an entity's carbon footprint by one metric ton of carbon

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Carbon Credits*



Typically modeled baseline versus measured actual post project emissions

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Emissions Trading*

- Emissions trading occurs when a source of air pollution reduces its emissions and transfers ownership of the emissions reductions to another party
- There are active trading programs in several pollutants *(including carbon)*
- An administrative approach used to control pollution by providing economic incentives for achieving reductions in the emissions of pollutants *(sometimes called cap and trade)*
- Emissions trading is strict, formal, and legal

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Carbon Certification Standards*

- **Offset Certification Standards**
  - Clean Development Mechanism (CDM)
  - Climate Action Reserve (CAR)
  - Voluntary Carbon Standard (VCS)
  - American Carbon Registry (ACR)
  - Chicago Climate Exchange (CCX)
  - Gold Standard
  - None of the above?
- **Each has its own standards and policies, as well as different values in the marketplace**

# *Tax Credits, Carbon Credits and Other Financial Incentives*

## *Carbon Credit Value*

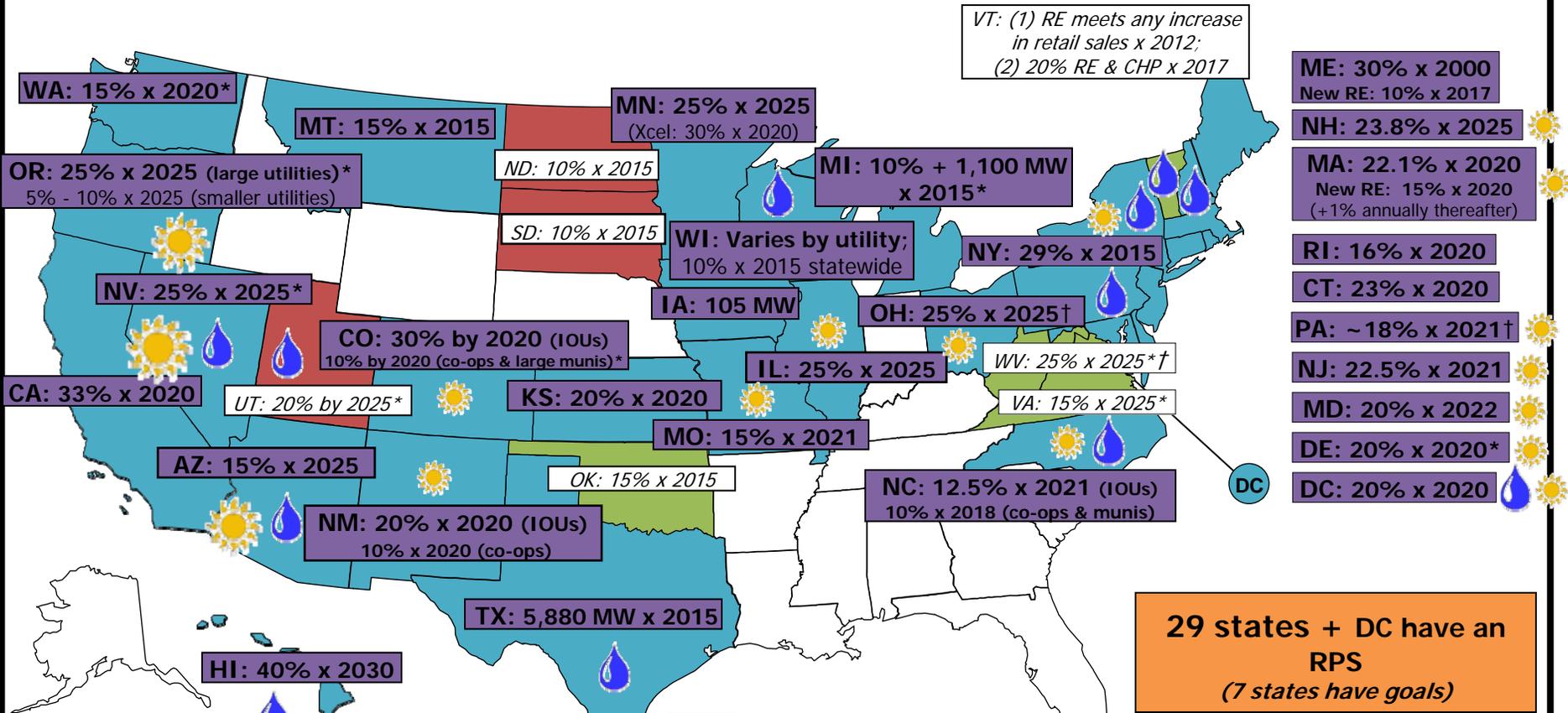
- What is important – Value! (price, terms)
- What determines value?
  - Recognition
  - Accuracy
  - Conservativeness
  - Transparency
  - Separation of Roles
  - Practicality

# *Tax Credits, Carbon Credits and Other Financial Incentives REC, Grants & Rebates*

- Renewable Energy Credits
  - State driven
- State Loans & Grants
  - ARRA funding (*Ohio*)
  - Other funding (*Wisconsin*)
- State Tax Incentives
  - Property tax exemption
  - Sales tax exemption

# Renewable Portfolio Standards

[www.dsireusa.org](http://www.dsireusa.org) / July 2010



State renewable portfolio standard  
 State renewable portfolio goal  
 Solar water heating eligible

Minimum solar or customer-sited requirement  
 \* Extra credit for solar or customer-sited renewables  
 † Includes non-renewable alternative resources

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## *REC Example*

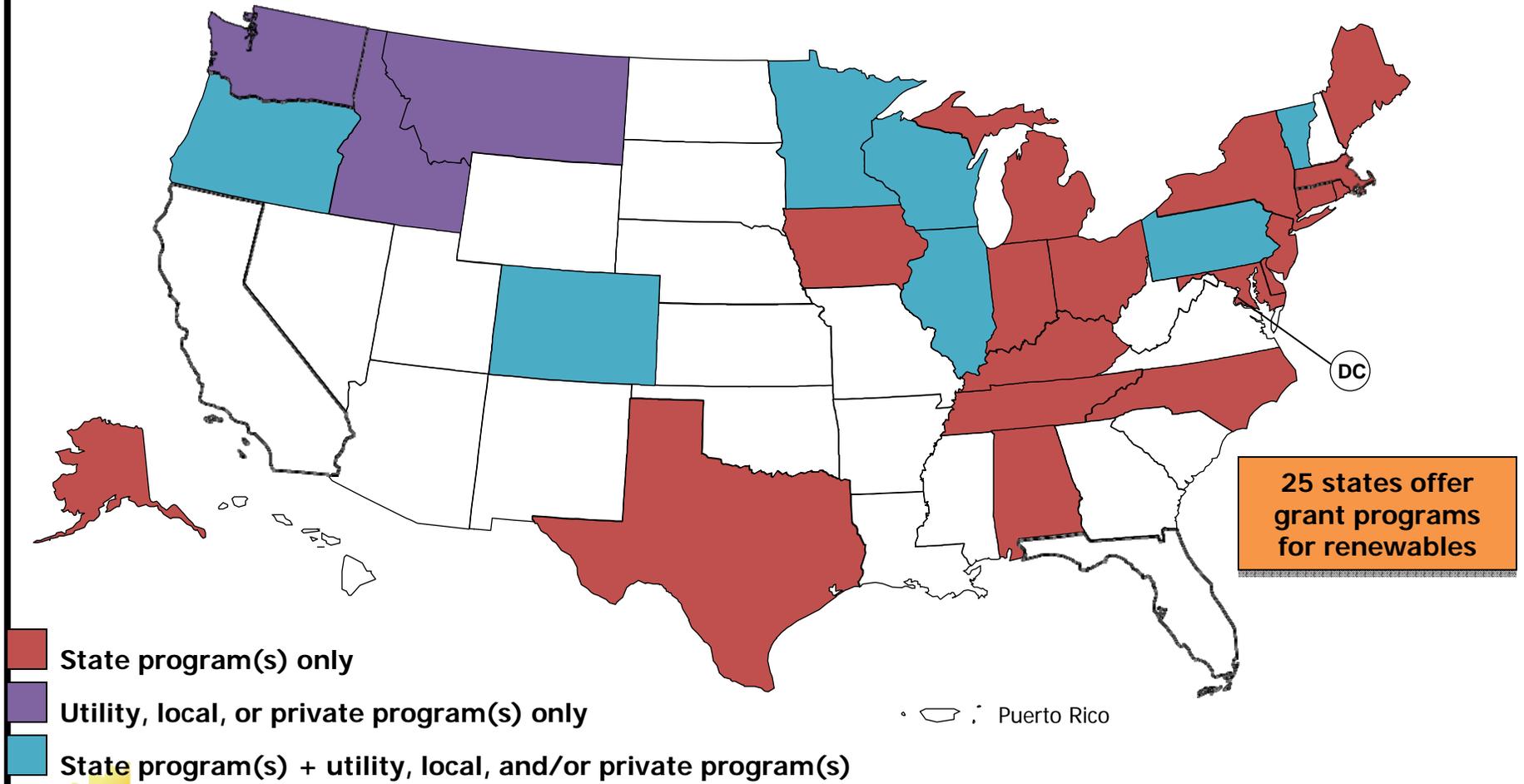
- Ohio SB 221 Alternative Energy Resource Standard
  - Advanced Resource Standard
  - Renewable Resource Standard
  - Compliance Requirements
  - Alternative Compliance Payment
- Phased approach
- Technology component
- Regulatory flexibility
- Firm compliance protocol

Year	Renewable (%)	Solar (%)
2009	0.250	.004
2010	0.50	.010
2011	1.00	.030
2012	1.50	.060
2013	2.00	.090
2014	2.50	.12
2015	3.50	.15
2016	4.50	.18
2017	5.50	.22
2018	6.50	.26
2019	7.50	.30
2020	8.50	.34
2021	9.50	.38
2022	10.50	.42
2023	11.50	.46
2024+	12.50	.50

# Grant Programs for Renewables

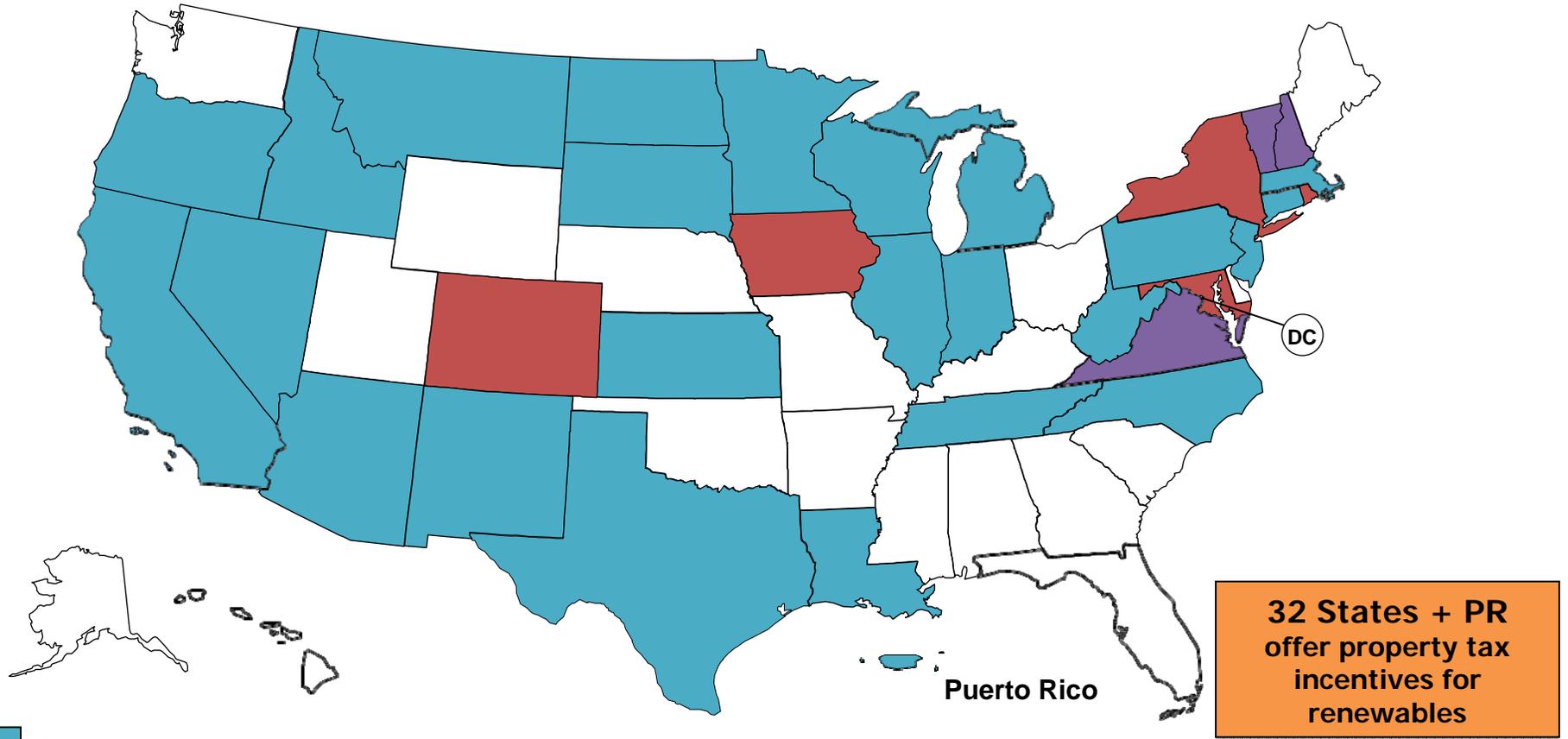
[www.dsireusa.org](http://www.dsireusa.org) / June 2010

*Notes: This map only addresses grant programs for end-users. It does not address grants programs that support R&D, nor does it include grants for geothermal heat pumps or other efficiency technologies. The Virgin Islands also offers a grant program for certain renewable energy projects.*



# Property Tax Incentives for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / June 2010

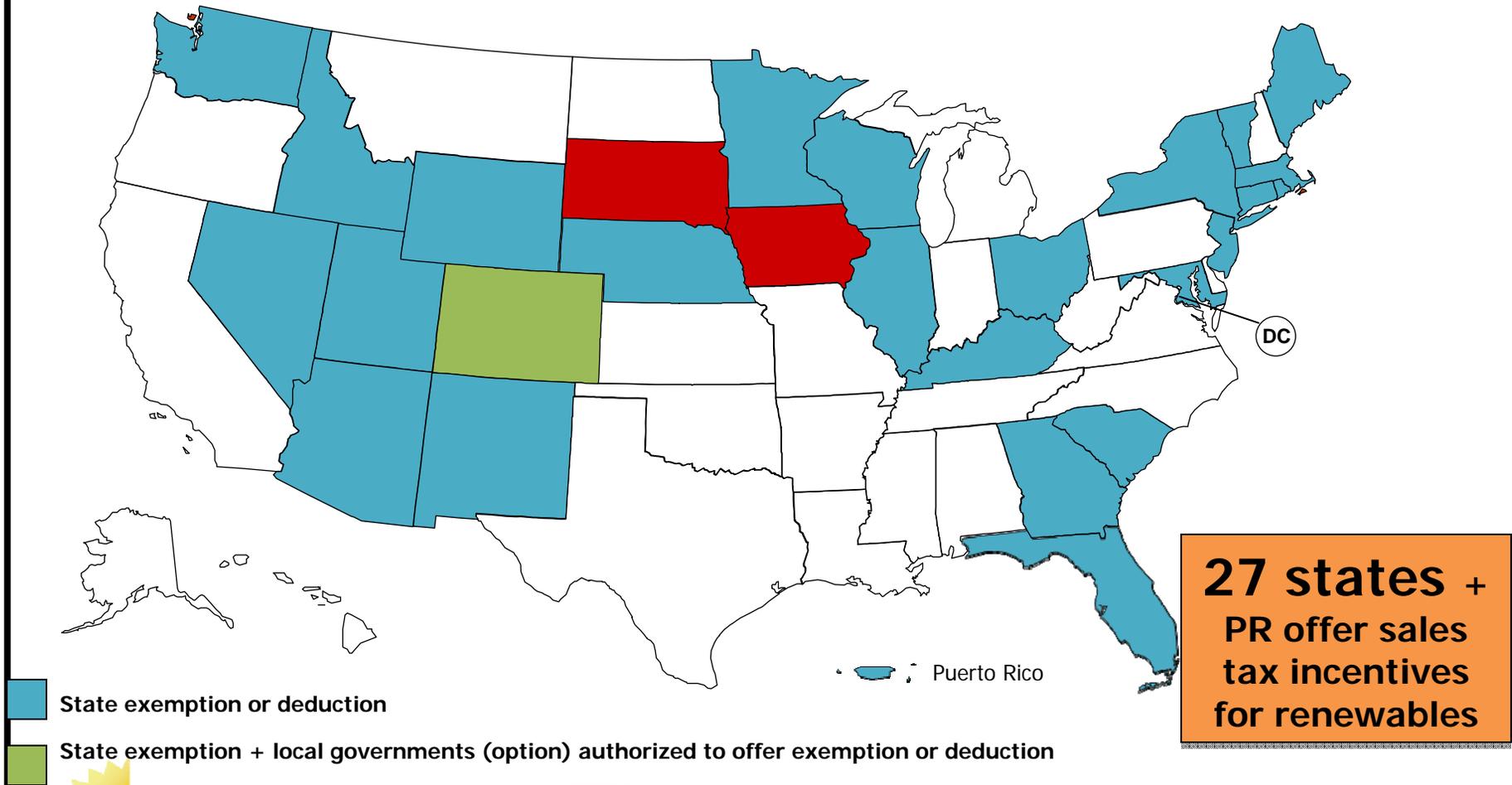


- State exemption or special assessment only
- Local governments authorized to offer exemption (no state exemption or assessment)
- State exemption or special assessment + local government option

# Sales Tax Incentives for Renewables

[www.dsireusa.org](http://www.dsireusa.org) / June 2010

Notes: This map does not include sales tax incentives that apply only to geothermal heat pumps or other energy efficiency technologies.



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# *Tax Credits, Carbon Credits and Other Financial Incentives Summary*

Real value is available

Legislative & regulatory uncertainty  
must be considered

Planning is crucial



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**Thank You!**

- Q&A
- Closing Comments

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