Renewable Portfolio Standards Overview

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Overview

- Introduction to Existing Renewable Portfolio Standards
- RPS Design Basics
- Focus on California, Oregon, pre-CETA Washington RPS Requirements
  - Overview
  - Resource Eligibility
  - Renewable Energy Certificates
  - RPS Provisions and Costs
  - Compliance
  - Evolution of the RPS
- Q&A

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Introduction to RPS Policy

- An RPS is a procurement mandate for retail electricity suppliers to generate or purchase quantities of eligible renewable resources based on a percentage of load
- Implemented by 29 states and the District of Columbia
- Most state targets are between 10% and 45%, 14 states—California, Colorado, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Mexico, New Jersey, New York, Oregon, Vermont, Virginia, Washington, as well as Washington, D.C.—have requirements of 50% or greater
- Generally, states have created these standards to diversify energy resources, promote domestic energy production, encourage economic development, and reduce emissions
- According to a Berkley lab study, roughly half of the growth in U.S. renewable energy generation since the beginning of the 2000's can be attributed to state renewable energy requirements

https://emp.lbl.gov/publications/us-renewables-portfolio-standards-1

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Renewable & Clean Energy Standards

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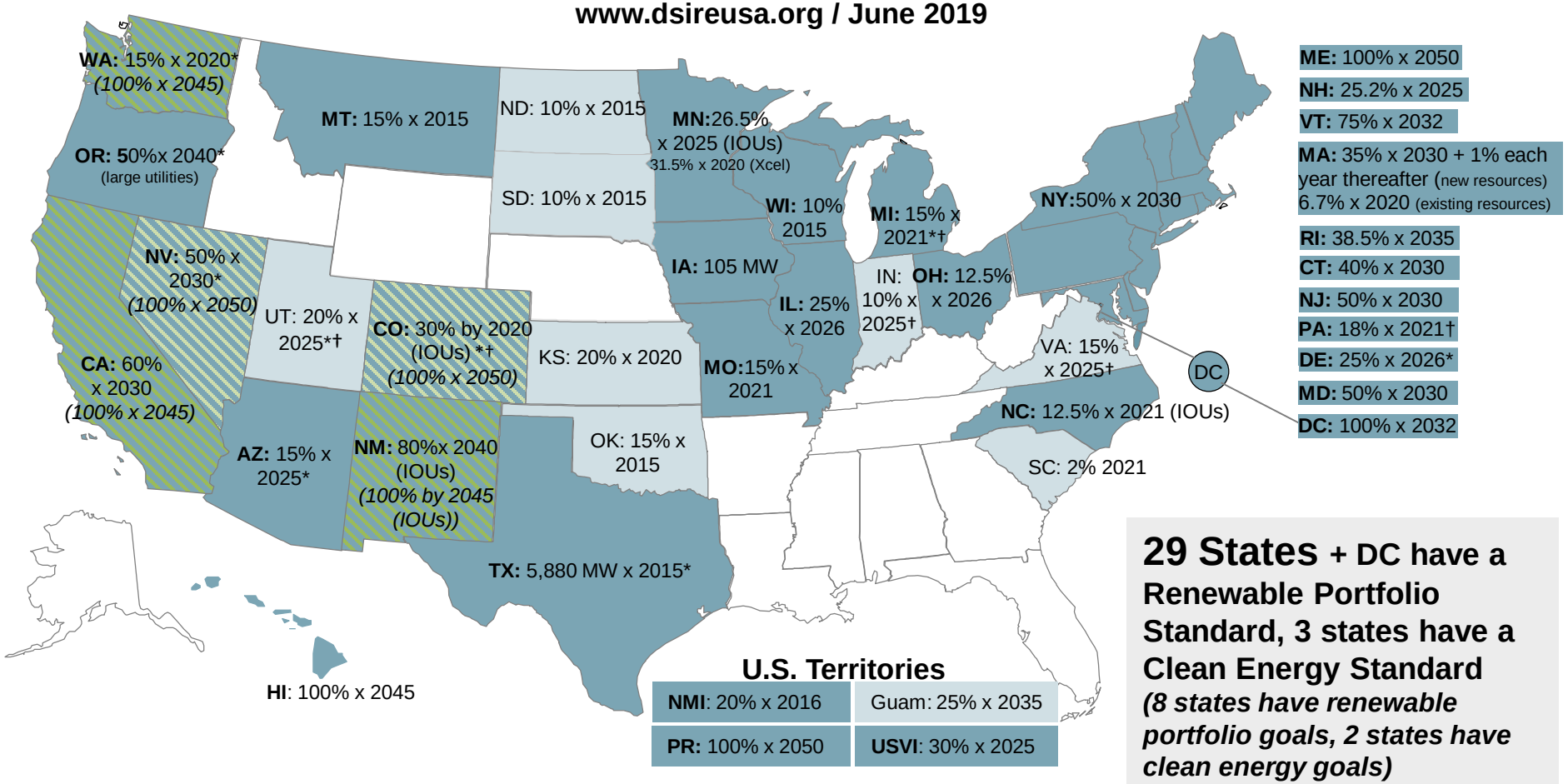

ME: 100% x 2050
NH: 25.2% x 2025
VT: 75% x 2032
MA: 35% x 2030 + 1% each year thereafter (new resources) 6.7% x 2020 (existing resources)
RI: 38.5% x 2035
CT: 40% x 2030
NJ: 50% x 2030
PA: 18% x 2021†
DE: 25% x 2026*
MD: 50% x 2030
DC: 100% x 2032

U.S. Territories

NMI: 20% x 2016	Guam: 25% x 2035
PR: 100% x 2050	**USVI**: 30% x 2025

29 States + DC have a Renewable Portfolio Standard, 3 states have a Clean Energy Standard ***(8 states have renewable portfolio goals, 2 states have clean energy goals)***

Renewable portfolio standard
Renewable portfolio goal
Clean energy standard
Clean energy goal

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

RPS Design Basics

- **Application**: typically applies to load-serving entities inside the state
- **Targets**: ramps up over time
- **Compliance Period**: annual or multi-year periods
- **Resource Eligibility**: defines technology type, geographic requirements, resource age, etc.
- **Compliance Instrument**: Renewable Energy Certificates
  - Represents non-power attributes
  - One REC created for each qualifying MWh
  - Bundled = REC acquired with or at the same time as the energy
  - Unbundled = REC acquired separately from the energy
  - Tracking system to ensure no double-counting of RECs

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RPS Design Basics

- **Other Provisions**: carve-outs, multipliers, contract length requirements, planning, etc.

- **Cost Mitigation**: offers customer protection through compliance off-ramps
  - Cost cap
  - Alternative compliance payment

- **Compliance Enforcement**:
  - Regulatory roles vary by state
  - Progress shown through prudent planning (Integrated Resource Planning, Procurement Plans, Short- and Long-Term Planning)
  - Compliance demonstrated through reporting requirements and/or REC retirement
  - Penalties can be imposed for non-compliance

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Standards Overview

	California	Oregon	Washington
Applicable Sectors	All IOUs, Community Choice Aggregators	Large IOUs, Municipalities, Cooperative Utilities, Retail Suppliers	Utilities serving more than 25.000 customers in the state
Current Targets	**60% by 2030** *Senate Bill 100 (September 2018)*	**50% by 2040** *Senate Bill 1547 (March 2016)*	**15% by 2020** *Initiative 937 (November 2006)*
Prior Targets	50% by 2030 *Senate Bill 350*	25% by 2025 *Senate Bill 838*	None before I-937
Other Components of Legislation	100% carbon-free resources by 2045	Coal out of rates by 2030 Community Solar	Cost-effective conservation requirement

Resource Eligibility

	California	Oregon	Washington
Qualifying Technologies	• Wind • Solar PV & Thermal • Geothermal • Biomass • Hydro (under 30 MW) • Landfill Gas • Tidal, Wave, Ocean Thermal	• Wind • Solar PV & Thermal • Geothermal • Biomass Hydro (Low Impact, Efficiency) • Landfill, other biogas • Tidal, Wave, Ocean Thermal	• Wind • Solar PV & Thermal • Geothermal • Biomass • Hydro (efficiency only) • Landfill, other biogas • Tidal, Wave, Ocean Thermal
Qualifying Resource Criteria	• Operational after January 2005 • Certified eligible by the CEC • Located within WECC (with other locational limitations)	• Operational after January 1, 1995 • Located within WECC • Certified eligible by ODOE	• Operational after March 31, 1999 • Located with 'Pacific Northwest' or within a state served by the utility

Renewable Energy Credits

	California	Oregon	Washington
Compliance Mechanisms	3 product content categories • PCC 1 (directly delivered) • PCC2 (firmed and shaped) • PCC3 (other) Limits use of PCC 2 and 3 over time	Bundled RECs Unbundled RECs limited to 20% of annual RPS target	Use of RECs and eligible generation
Tracking System	WREGIS	WREGIS	WREGIS
Banking & Compliance Periods	3-year compliance periods 36 months REC shelf-life	Annual compliance period Indefinite or five years banking depending on vintage	Annual compliance period RECs eligible if created in compliance year, preceding year, subsequent year

RPS Provisions and Costs

	California	Oregon	Washington
Other RPS Provisions	65% of target must be from long-term procurement QFs within California pass all RECs to utility for state RPS	RECs from Oregon Solar Incentive Program and portion from Energy Trust of Oregon projects passed to customers for RPS	REC multipliers for DG under 5 MW projects and projects COD after 12/31/05 which used approved apprenticeship program
Cost Mitigation	CPUC tasked with implementing procurement expenditure limitation at a level that prevents disproportionate rate impacts	If the incremental cost of RPS exceeds 4% of annual revenue requirement, the utility not required to comply	If the incremental cost of RPS exceeds 4% of annual revenue requirement, the utility not required to comply

Compliance

	California	Oregon	Washington
Regulatory Roles	CEC certifies RPS resources and verifies WREGIS retirement; regulates compliance for POUs CPUC regulates compliance, determines prudency, rulemakings	DOE certifies RPS resources, state-wide rulemakings, and technical expertise OPUC enforces compliance, determines prudency, rulemakings	UTC enforces compliance for IOUs, determines prudency, rulemakings Commerce enforces for all other entities
Planning	Annual Procurement Plan including forecast of RECs, risk assessment, and cost of compliance	RPS Implementation Plan filed in December of every other year with a 5-year outlook includes forecast of RECs and incremental cost Compliance planning in IRP process	Not addressed

Compliance (continued)

	California	Oregon	Washington
Reporting	Annual RPS reporting to both CEC and CPUC – CPUC report for current year and through 2030	Annual RPS report to OPUC showing compliance for prior year	Annual RPS report showing compliance for current year and true up for prior year
Penalties	Penalties can be imposed for non-compliance	Penalties can be imposed for non-compliance	Penalties can be imposed for non-compliance

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Evolution of the RPS

- Initial RPS policies designed to encourage renewable development, most not explicitly focused on greenhouse gas emissions reductions or decarbonization
  - Generally assume that renewable resources are higher cost than fossil alternatives

- Newer policies shifting to concepts of non-emitting (“clean”) procurement and decarbonization strategies
  - Prohibitions on coal-filed resource included in rates
  - Incorporation of 100% non-emitting targets/goals
  - Focus on storage

- Incorporation of equity considerations and addressing impacts to vulnerable communities

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Questions

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