



Factsheet: Renewable Thermal in Renewable Portfolio Standards

Thirteen states now include thermal energy in their Renewable Portfolio Standards (RPS), but unlike many electric RPSs, those thirteen policies look far from identical (Figure 1). Much of the variation is due to key differences between thermal and electric energy that reduce political consistency:

- **Difficult to quantify:** There is no universal means of quantifying thermal energy because, unlike electricity, it cannot be uniformly measured due to variation in technology. Therefore, for the purposes of a state RPS, it must be calculated as kilowatt hours (kWh) displaced or converted from BTUs produced into a kWh equivalent—the accepted method varies state-by-state.
- **No universal value:** Once this unit of measurement is determined, states disagree on how to value a unit of thermal energy. Some states hold them as an electric equivalent, others attribute them to separate carve outs, or give them ‘partial credit’ by applying them to a lower tier in the RPS compared to renewable electricity sources.

Figure 1: Renewable Thermal RPS Policies by State*

State	Eligible Technologies	Value within RPS	REC Definition
AZ	Biomass, biogas, solar, geothermal,	Distributed energy resource, 30% requirement	BTU Conversion
DC	Solar	Tier I technology, same as solar electric	BTU Conversion
IN	“Clean energy” thermal resources	Alongside renewable electricity	BTU Conversion
MD	Residential solar water, geothermal, biomass (except wood)	Tier I, solar water eligible for solar carve out	BTU Conversion
MA	Solar, biomass, biogas, geothermal	Alternative Energy Standard (5% by 2022)	BTU Conversion
NV	Solar, geothermal	Renewable resource	BTU Conversion
NH	Solar, geothermal, biomass	Required 2% thermal by 2023	BTU Conversion
NC	Solar, waste heat from biomass	Solar thermal is in solar specific target	BTU Conversion
OR	Biomass electric with thermal byproduct	TRECs	BTU Conversion
PA	Solar hot water and case-by-case	Tier II	kWh Displacement
TX	Solar hot water, geothermal heat pumps, landfill gas	Solar and geothermal are generation offset	kWh Displacement
UT	Solar, geothermal	‘renewable resources,’ separate from electric	kWh Displacement
VT	All	Tier III	kWh Displacement
WI	All	Non-electric resources (electric displacement)	kWh Displacement

*For more information, see the 2018 Clean Energy States Alliance Report “Renewable Thermal in State Renewable Portfolio Standards” (<https://www.cesa.org/assets/Uploads/Renewable-Thermal-in-State-RPS-April-2015.pdf>).

Governments can take steps when integrating renewable thermal into RPS policies to decrease the impact of remaining barriers and increase the likelihood of overall renewable thermal market expansion. These include:

- **Establishing a common currency/language** to define a unit of thermal energy and its value in an RPS. Simplicity and consistency increase likelihood of market participation—the easier it is, the more likely participation will increase.
- **Develop financial incentives** to provide financiers an incentive to invest and end users an incentive to deploy existing renewable heating and cooling technologies. Unlike wind and solar energy, most renewable thermal technologies do not benefit from the same type of tax credits that helped reduce the technology cost to be on par with existing resources.
- **Increase funding for R&D** which will lead to reduced costs of existing technologies, advance technical applications, and potentially lead to new renewable thermal applications that fundamental shift the thermal energy landscape.