



Waste Heat in the States

Colorado

RPS/APS

IOUs 30% by 2020, Coops 10% by 2020

In March 2010 Colorado Governor Bill Ritter signed a bill which requires utilities to get 30% of electricity from renewable sources by 2020. In 2004, Colorado was the first state to pass a voter-approved referendum requiring 10% renewable energy by 2015. In 2007, Gov. Ritter and the legislature doubled the requirement to 20% by 2020. Recycled energy is RPS eligible on par with other renewable like wind/solar/biomass. Here is the definition:

"Recycled energy" means energy produced by a generation unit with a nameplate capacity of not more than fifteen megawatts that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. "Recycled energy" does not include energy produced by any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including, without limitation, any process involving engine-driven generation or pumped hydroelectricity generation.

Louisiana⁺

The PSC has approved a staff recommended pilot RPS goal of 12.5% renewable by 2025. Renewable recourses include Combined Heat and Power ("CHP") and Waste Heat Recovery ("WHR"). The PSC has set out a 2 part procurement plan which includes:

1. Standardized tariff proposed PPA price of avoided cost + \$30 MWh for systems <5MW at 3 year terms with total amount per utility under this option at 30MW.
2. RFP for facilities online between 2012 and 2013, a statewide total of 350 MW shared among IOUs and Coops, will offer contracts with 20 year terms.

Michigan

RPS/APS

10% by 2015; DTE 300 MW by 2013 and 600 MW by 2015; Consumers Energy 200 MW by 2013 and 500 MW by 2015.

In October 2008, Michigan enacted an RPS requiring the state's investor-owned utilities, alternative retail suppliers, electric cooperatives and municipal electric utilities to generate 10% of their retail electricity sales from renewable energy resources by 2015. The standard allows utilities to use energy optimization and advanced cleaner energy systems (ACECs) to meet a limited portion of the requirement. Utilities may substitute ACECs from **industrial cogeneration** (meaning waste heat, see below) for renewable energy credits (RECs). No more

⁺ States with RPS goals as opposed to mandates.

than 10% of a utility's obligation may be met using a combination of both types of credits. The price range for RPS power in MI is between \$88 and \$115 per MWh. Here is the definition: “**Industrial cogeneration facility**” means a facility that generates electricity using industrial thermal energy or industrial waste energy.

Nevada

RPS/APS

25% by 2025

NRS 704.7809 “Qualified energy recovery process” defined.

1. “Qualified energy recovery process” means a system with a nameplate capacity of not more than 15 megawatts that converts the otherwise lost energy from:

(a) The heat from exhaust stacks or pipes used for engines or manufacturing or industrial processes; or

(b) The reduction of high pressure in water or gas pipelines before the distribution of the water or gas, to generate electricity if the system does not use additional fossil fuel or require a combustion process to generate such electricity.

2. The term does not include any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including, without limitation, any process involving engine-driven generation or pumped hydrogeneration.

NRS 704.7815 “Renewable energy system” defined. “Renewable energy system” means:

1. A facility or energy system that:

(a) Uses renewable energy or energy from a qualified energy recovery process to generate electricity; and....

North Dakota⁺

RPS/APS

10% by 2015

49-2-24. Renewable electricity and recycled energy credit trading and tracking system.

Notwithstanding any other provision of law, the commission by rule may establish or participate in a program to track, record, and verify the trading of credits for electricity generated from renewable and recycled heat sources among electric generators, utilities, and other interested entities within this state and with similar entities in other states. This section applies to all public utilities, electric cooperatives, and municipal electric utilities.

49-02-25. Renewable electricity and recycled energy defined. As used in section

49-02-24, renewable electricity and recycled energy include electricity generated from facilities using the following sources...

Recycled energy systems producing electricity from currently unused waste heat resulting from combustion or other processes into electricity and which do not use an additional combustion process. The term does not include any system whose primary purpose is the generation of electricity.

Oklahoma⁺

RPS goal of 15% by 2015

Renewable sources include demand side management.

"Demand side management" means the management of customer consumption of electricity, or the demand for electricity, through the implementation of:

- a. load management or demand resource technologies, management practices or other strategies in residential, commercial, industrial, institutional or government customers that shift electric loads from periods of higher demand to periods of lower demand, or
 - b. industrial by-product technologies consisting of the use of a by-product from an industrial process, including the reuse of energy from exhaust gases or other manufacturing by-products that are used in the direct production of electricity at the facility of a customer;
- and

South Dakota⁺

RPS/APS

10% by 2015

Renewable electricity and recycled energy defined. For the purposes of §§ 49- 34A-94 to 49-34A-96, inclusive, renewable electricity and recycled energy include electricity generated from facilities using one or more of the following sources:

“Recycled energy systems that produce electricity from currently unused waste heat resulting from combustion or other processes and which do not use an additional combustion process. The term does not include any system whose primary purpose is the generation of electricity.”

Utah⁺

RPS/APS

20% by 2025

"Renewable energy source" means:

(a) Electric generation facility or generation capability or upgrade that becomes operational on or after January 1, 1995 that derives its energy from one or more of the following:

(vi) waste gas and waste heat capture or recovery; or

(e) any of the following located in the state and owned by a user of energy:

(v) a waste gas or waste heat capture or recovery system, other than from a combined cycle combustion turbine that does not use waste gas or waste heat, with the quantity of renewable energy certificates to which the user is entitled determined by the total production of the system, except to the extent the commission determines otherwise with respect to net-metered energy;

and

West Virginia⁺

AES

25% by 2025

In June 2009, West Virginia enacted an *Alternative and Renewable Energy Portfolio Standard* that requires investor-owned utilities (IOUs) with more than 30,000 residential customers to

supply 25% of retail electric sales from eligible alternative and renewable energy resources by 2025. The definition of "**renewable energy resources**" includes solar-electric, solar thermal energy, wind power, run-of-river hydropower, geothermal energy, fuel cells, and certain biomass energy, biologically-derived fuels and **recycled energy**. Compliance is based on alternative energy credits (AECs), and banking of excess credits is allowed. A credit is equal to a megawatt-hour (MWh) of alternative or renewable electricity generation. Two credits are awarded for each MWh of electricity generated or purchased from a renewable energy resource facility

“**Recycled energy**” means useful thermal, mechanical or electrical energy produced from:(i) Exhaust heat from any commercial or industrial process; (ii) waste gas, waste fuel or other forms of energy that would otherwise be flared, incinerated, disposed of or vented; and (iii) electricity or equivalent mechanical energy extracted from a pressure drop in any gas, excluding any pressure drop to a condenser that subsequently vents the resulting heat.