



Backup Services and Standby Rates in Colorado

Standby Rates Overview

Most combined heat and power (CHP) systems are sized to the base thermal load at the site (thermal following), maximizing heat recovery, operating hours, energy savings, and emissions benefits and minimizing payback periods. When thermal following, CHP usually provides only a portion of the end user's power needs; the power grid is still needed for supplemental power and for backup/resilience purposes. A growing number of clients have self-generation capabilities, which makes planning more complex for power utilities, especially when they are required to provide full backup power to their customers any time their CHP systems stop operating. Thus, the utility grid needs to keep generation and transmission resources available and be ready to provide additional power in real time. Likely circumstances include during CHP generator maintenance and, depending on the agreement with the utility, when power from the utility grid is cheaper than power generated by the CHP system. Utilities collect revenue to cover the cost associated with maintaining resources to meet demand in these circumstances; the fees are known as **standby** or **backup rates**. These rates are typically not transparent to users and are often inconsistent among utilities in neighboring territories, which can create obstacles for CHP project development.

CHP in Colorado

Colorado is home to 26 CHP installations with a combined capacity of 511 MW. There is still potential for 4,544 new sites with a total capacity of 1,718 MW.¹ Until the early 2000s, industrial and power generation applications of around 20 MW dominated the market. Now other sectors are gaining traction—education, hospitality, and residential facilities—dropping the average installation size to 3 MW in 2016. Business models have also evolved, as systems are increasingly funded, developed, owned and/or operated by third parties rather than utilities or industrial companies.

Xcel Energy Colorado Standby Rates

Colorado customers may be served by an investor-owned utility (IOU), a cooperative utility, or a municipal utility. Black Hills Energy and Xcel Energy, Colorado's two IOUs, are regulated by the Colorado Public Utilities Commission (PUC). Xcel Energy provides three kinds of standby services, based on the facility's voltage level: Transmission Standby Service (Schedule TST), Primary Standby Service (Schedule PST), and Secondary Standby Service (Schedule SST). The tariffs are for commercial and industrial customers who operate generating equipment in parallel with the utility's electric system and require 10 kW or more of standby capacity service. Xcel Energy publishes its tariffs online and updates them periodically.²

STANDBY CAPACITY	Secondary Voltage	Primary Voltage	Transmission Voltage
	>= 10 KW	>= 10 KW	>= 10 KW
MONTHLY RESERVATION FEE			
a Service and Facility Charge	34.4	322.00	490 to 2,070
b Production Meter Charge	9.3	192.00	Customer specific
c Interconnection Charge	-	-	780 to 5,690
d Distribution Standby Capacity Fee: Contract Standby Capacity, \$ per kW	5.63	3.86	
e Generation and transmission standby capacity reservation fee: Summer, \$ per kW	1.68	1.71	1.47
e Generation and transmission standby capacity reservation fee: Winter, \$ per kW	1.18	1.15	0.99
MONTHLY USAGE CHARGE			
f Demand charge after Allowed Grace Energy, \$ per kW in Summer	14.02	14.26	12.32
f Demand charge after Allowed Grace Energy, \$ per kW in Winter	9.82	9.55	8.28
g Energy charge \$per kWh	0.00461	0.00458	0.00441
MONTHLY MINIMUM	a+b+d+e	a+b+d+e	a+b+c+e

Table 1. Xcel Energy Standby Rates for Distributed Generation in Colorado

Source: Xcel Energy

¹ <https://betterbuildingsolutioncenter.energy.gov/sites/default/files/tools/Colorado.pdf>

² https://www.xcelenergy.com/company/rates_and_regulations/rates/rate_books

Standby service charges include monthly reservation fees, as well as a usage charge for demand and energy. The demand charge is applicable only after the customer has used the allowed “Grace Energy Hours,” 1,051 hours of standby power usage allotted to each customer before the standby rate is charged. The customer’s standby contract capacity is set forth in a standby service agreement. The quantity of standby capacity can be set at different levels for summer and winter. For customers with standby contract capacities ranging from 10 to 10,000 kW, maintenance on the generating unit must occur during the calendar months of April, May, October, or November. Customers must provide Xcel with written notice of scheduled maintenance prior to the beginning of the maintenance period. Customers who have a standby contract capacity greater than 10,000 kW must provide an annual projection of scheduled maintenance, authorized in advance. The amount of advance notice required depends on the expected maintenance outage duration (e.g., 90 days’ notice is required for an outage longer than 30 days). Maintenance outages cannot exceed six weeks in any 12-month period. Qualified scheduled maintenance time does not count against the customer’s Grace Energy Hours.

Quick Facts

Location: Colorado
Market Sector: CHP and WHP applications, including oil and gas, manufacturing, refining
Program Type: Standby tariff
Geography: State of Colorado
Program Start: 2015
Annual Cap: 20 MW in Xcel territory, no cap in other territories

	Secondary Voltage 10 to 10,000 kW	Primary Voltage 10 to 10,000 kW	Transmission Voltage 10 to 10,000 kW
STANDBY CAPACITY			
RECYCLED ENERGY INCENTIVE, \$ per kW	500	500	500
MONTHLY RESERVATION FEE			
a Service and Facility Charge	40	305	490 to 2,070
b Production Meter Charge	14.55	192	Customer specific
c Interconnection Charge	-	-	780 to 5,690
d Distribution Standby Capacity Fee: Contract Standby Capacity, \$ per kW	4.84	3.98	
e Generation and transmission standby capacity reservation fee, \$ per kW	0.35	0.31	0.3
DAILY USAGE CHARGE			
f Demand charge after Allowed Grace Energy, \$ per kW in Summer	15.90	15.30	14.10
f Demand charge after Allowed Grace Energy, \$ per kW in Winter	7.80	7.20	6.60
g Energy charge \$ per kWh	0.00473	0.00461	0.00451
MONTHLY MINIMUM	a+b+d+e	a+b+d+e	a+b+c+e

Table 2. Xcel Energy Standby Rates for Recycled Energy Projects in Colorado

Source: Xcel Energy

Based on the same tariff structure, Xcel Energy has developed a set of standby rates specific for recycled energy—or waste heat to power (WHP)—projects, presented in Table 2. Prices applied to the various terms of the tariff differ from each other slightly, and this tariff applies daily (rather than monthly) usage charges. Daily rates may be more favorable to users since they are billed according to the daily (instead of the monthly) maximum power capacity. The main difference, however, is the incentive of \$500 per kilowatt of recycled energy system capacity installed. This incentive is paid monthly, over 10 years, at a rate of approximately \$.012/kilowatt-hour of recycled energy electrical output. The incentive applies to the total recycled energy system output (up to 10 MW capacity), whether used on site or sold to a utility or other wholesale electricity provider.

Resources:

- [Xcel Energy Rates and Regulations Book](#)
- [Standby Rates for Combined Heat and Power Systems, a study from the Regulatory Assistance Project \(RAP\)](#)

For More Information

U.S. DOE UPPER-WEST CHP TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)
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Date produced: May 2020