



CHP  
TECHNICAL ASSISTANCE  
PARTNERSHIPS

# Ameren Missouri's Bill Calculator Tool Makes Utility Standby Charges More Transparent

## Program / Policy Description

Even the best operating self-generation systems require regular *maintenance* and experience occasional unplanned *forced outages*. For those brief periods, utility maintenance and back-up power service, often referred to as *standby service*, is a necessity for most industrial, commercial and institutional operations. Unfortunately, utility standby service tariffs are often complex and ambiguous, leading to over estimates of the cost of standby service. This can adversely affect investment and design decisions.

The Ameren Missouri *Standby Bill Calculator Tool* is a cost calculator that can help self-generation customers estimate what their utility provided standby service will cost. The Tool is an *excel file* programed to apply the charges and parameters in Ameren's Standby Service Rider (SSR) to individual customers' standby service profiles. The excel file can be populated with 12-months of the customer's historic load data (which can be provided by Ameren) or with projected load profiles and generation assumptions to calculate Ameren's SSR charges. Using this Tool, prospective combined heat and power (CHP) and waste heat-to-power (WHP) customers can calculate and compare their projected SSR costs to their current monthly electric bills. Ameren Missouri makes three tools available, one for each customer class eligible for standby service – Large General Service, Large Primary Service, and Small Primary Service. The Tool is designed to utilize 15-minute customer demand data -- the same data used in Ameren's SSR. Ameren also offers an auxiliary tool that will convert hourly data into 15-minute data to use in the Tool. To obtain the tool and assistance in using it, customers are directed on Ameren's Standby Service Rider webpage to contact Tom Hickman, Regulatory Rate Specialist.

The US DOE Central Combined Heat and Power Technical Assistance Partnership (TAP) works closely with the Missouri Division of Energy to provide technical assistance to potential CHP and WHP customers in Missouri. The TAP staff has experience with the Ameren Missouri Bill Calculator Tool and is available to help CHP and WHP customers and their consultants understand how to use it.

### Quick Facts

**LOCATION:** Missouri

**MARKET SECTOR:** CHP and WHP applications, including manufacturing, oil & gas, commercial and institutional

**Program/Policy Type:** Standby Rate Calculator

**Geography:** Ameren Missouri Electric Service Territory

**Program Start:** 2017

	Full Service Requirement		Supplemental + SSR			Generated	Avoided Cost
	kWh	Bill	kWh	Bill	Avoided Cost	kWh	Percentage*
January	2,005,478.11	109,341.26	1,100,156.09	65,829.15	43,512.11	905,322.03	0.88153775
February	1,853,657.89	102,689.76	1,018,338.89	61,248.88	41,440.89	835,319.00	0.89552789
March	1,946,291.17	106,142.54	1,086,678.15	62,682.88	43,459.66	859,613.02	0.92704682
April	1,881,793.37	103,947.25	1,054,780.35	61,526.62	42,420.63	827,013.02	0.9285892
May	2,025,220.65	113,088.25	1,144,018.17	67,077.50	46,010.75	881,202.48	0.93505777
June	2,094,030.51	182,442.87	1,258,116.67	119,557.07	62,885.79	835,913.84	0.86346978
July	2,189,453.50	188,770.87	1,333,058.79	120,410.25	68,360.63	856,394.71	0.92583331
August	2,239,081.96	194,160.83	1,359,409.50	123,046.00	71,114.83	879,672.46	0.93228248
September	2,074,302.08	184,194.54	1,227,719.36	113,967.27	70,227.27	846,582.72	0.9341823
October	1,970,437.56	108,293.18	1,112,215.68	64,312.09	43,981.09	858,221.88	0.93245521
November	1,839,658.22	101,048.71	1,110,884.93	69,953.36	31,095.35	728,773.29	0.77680021
December	1,877,201.47	102,056.37	943,355.99	54,849.07	47,207.29	933,845.48	0.92983277
Annual	23,996,606.50	1,596,176.43	13,748,732.55	984,460.15	611,716.28	10,247,873.95	0.89739821

Sample Output from the Standby Bill Calculator Tool

## Program/ Policy Development

- In the course of a series of workshops arising out of an Ameren rate case, the Missouri Department of Economic Development's Division of Energy recognized an opportunity to help potential CHP and WHP customers estimate their standby charges using readily available utility data and an excel file developed by Ameren to illustrate the cost impacts of its Standby Service Rider in various scenarios.
- The Division of Energy worked in collaboration with Ameren Missouri to make the Tool user friendly.
- Many nuances in how the Ameren SSR affects different customer classes and loads had to be considered in programming each of the

three customer class Tools. The fact that Ameren Missouri's standby tariff included a one-page summary of key charges for each class of customer facilitated this process.

- The Central CHP TAP was one of the first entities to use the Tool and provided review and feedback on how to further streamline its application.

## Summary of Policy Results and Outcomes

Ameren Missouri's Standby Charge Tool allows *potential* CHP and WHP system owner/operators to identify the economically optimal system design, sizing and operational parameters in the *design phase* of their project. Further, this Tool allows *current* CHP and WHP system owner/operators to minimize standby charges by planning the timing and duration of maintenance on their systems during low cost periods. The Tool makes transparent the cost impact of an unplanned outage and the importance of proper maintenance procedures to avoid higher charges. Understanding how their systems' operational characteristics impact standby charges empowers self-generators to take control of their utility bill.

## Rate Transparency

Ameren Missouri's Standby Charge Tool is a landmark approach to rate transparency by an electric utility. Though tariff transparency is cited by many experts as a best practice in utility rate design, standby tariffs are often one of the most complex and least transparent electric rates. This lack of transparency can discourage investment in CHP, as well as lead to inefficient use of utility backup resources. Ameren's Tool enables customers to cut through the tariff maze at an early stage in project design and later to evaluate how their operating decisions are affecting their standby service bills.

## Lessons To Share

- Utilities can translate their standby tariff's structure and charges into a Bill Calculator tool using an excel spreadsheet, a tool often used in emission calculators.
- The ease with which a standby tariff can be translated into an excel spreadsheet depends on the complexity of the associated base tariff.
- Creating a *one-page summary* of the utility's standby charges is helpful to customers and aids in the process of creating a Bill Calculator tool.
- Utilities likely have the *historic customer load data* necessary to assist customers in using a Bill Calculator tool such as this.
- Customers that do not have historic load data may also be able to use this type of standby service Bill Calculator tool by uploading their projected load assumptions and self-generation profile.
- To promote standby tariff transparency, this type of standby service Bill Calculator tool should be user friendly and readily accessible to customers and its use should be actively promoted and facilitated by the utility.

### Resources:

- Ameren Missouri (Union Electric) Standby Service Rider  
<https://www.ameren.com/missouri/business/rates/electric-rates/rider-ssr>
- Midwest CHP Technical Assistance Partnership  
<http://midwestchptap.org/>
- Missouri Department of Economic Development Division of Energy  
<https://energy.mo.gov/clean-energy/combined-heat-power>

## For More Information

### U.S. DOE CENTRAL CHP TECHNICAL ASSISTANCE PARTNERSHIP (CHP TAP)

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