



EPB A PEER Certified Municipal Utility



PEER

PERFORMANCE
EXCELLENCE IN
ELECTRICITY
RENEWAL

In 2015, EPB became the first PEER certified municipal utility in the world

Established as an independent board of the City of Chattanooga in 1935, the Electric Power Board (EPB) serves 177,000 homes and businesses across greater Chattanooga, Tennessee and parts of North Georgia. One of America's largest publicly-owned electric power providers, EPB is committed to providing high quality, reliable energy as a means of promoting economic development and enhancing quality of life. Deliberate planning and investment in a robust and resilient grid is key to EPB's strategy for supporting the area's recruitment of new business, including clean high tech industry.

PEER certification validates EPB's accomplishments to date and demonstrates EPB and the City of Chattanooga's commitment to sustainable power and continuous improvement.

A Focus on Reliability

For EPB, electric reliability is integral to delivering quality service to its customers. Supported by an **innovative fiber optic network**, EPB has laid the groundwork for an intelligent, redundant, and self-healing grid that provides affordable power customers can count on.

Approximately **94%** of EPB customers can receive power through two or more distribution pathways. This means power can take alternative routes from the source to the customer in order to avoid downed or vulnerable sections of the grid. Additionally, all of EPB's circuits can be fed from two or more sources, ensuring that customers receive power even if the primary source is interrupted.

EPB's distribution circuits also have automated restoration; intelligent hardware such as **smart switches and auto-reclosers** are able to automatically test and re-energize a circuit, isolate a fault, and re-route power without human intervention. In areas like Chattanooga that regularly experience severe thunderstorms and tornadoes, these capabilities are critical for reducing the number of customers affected by an interruption and minimizing cascading effects.

In cases where the interruption is not automatically resolved, smart meters with outage detection capabilities provide EPB with situational awareness. These meters allow EPB's operators to prioritize and remotely respond to interruptions, dispatch working crews effectively, and reduce restoration times and operational costs.



Performance That Shows

The EPB system was put to the test in 2012 when two major storms knocked out power throughout most of Chattanooga. Thanks to the electricity infrastructure improvements, power was restored to most of the system **within hours** instead of days.

Based on 2013 data, EPB's System Average Interruption Duration Index (SAIDI) of 83.5 outage minutes per year compared favorably to the state of Tennessee's average SAIDI of 170 and the national average of 214.¹ The utility's System Average Interruption Frequency Index (SAIFI), 0.92, also compared favorably to the state and US average, 1.75 and 1.29 events per year respectively.

Based on Lawrence Berkeley National Laboratory's Interruption Cost Estimate Calculator, EPB's improvements in reliability save approximately **\$40 million a year**.² Savings include benefits to EPB and its customers.

Customer First

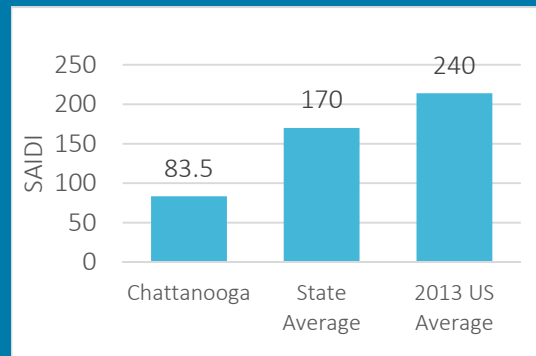
In addition to a focus on reliability, EPB prides itself on excellent customer service and consumer engagement. In fact, **99%** of EPB's customers have access to real time feedback on their electricity usage. Customers also have access to dynamic pricing, streamlined interconnection processes for qualifying generators, and options to purchase green power.

In recent years, EPB has been repeatedly recognized for customer satisfaction and leadership in engaging the community to promote energy efficiency and clean energy.

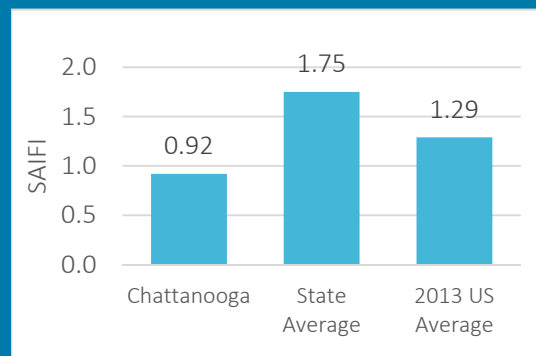
Key Performance Metrics: Reliability

Average Interruption Frequency Index (AIFI) is a measure of the number of times that the average customer experiences an outage over the course of a year, regardless of cause or duration.

System Average Interruption Duration Index (SAIDI) is a measure of the amount of time (minutes) that the average customer is without power over the course of a year. This metric only includes interruptions lasting longer than 5 minutes.



System Average Interruption Frequency Index (SAIFI) is a measure of the number of times in a year that the average customer experiences an outage (> 5 minutes).



For PEER, these metrics include all outages including those caused by major events.

¹ All data provided by EPB during the application process for PEER certification.

² When compared to baseline reliability costs estimated using state average SAIDI and SAIFI.

PEER Certification

PEER is a certification program for measuring and improving power system performance and electricity delivery systems. PEER certification represents third-party recognition for all that EPB has accomplished to date.

The PEER rating system includes four credit categories:

- ▶ Reliability and Resiliency
- ▶ Energy Efficiency and Environment
- ▶ Operational Effectiveness
- ▶ Customer Contribution

Out of a possible 400 points, EPB earned **294**, comfortably above the 280 point minimum required for certification under Version 1.1 of the PEER rating system. Additionally, EPB met all prerequisites, including having a communications backbone, advanced metering infrastructure, emergency response plan, and long-term improvement plan. Because EPB's upgrades are recent and significant, certification was based on one year's (2013) data.

As part of the PEER process, EPB identified opportunities for sustained improvement, including undergrounding, improving the generation mix (Figure 1), and encouraging ongoing customer engagement. These strategies have the potential to help EPB provide further value to customers, raise awareness of their accomplishments to date, and support additional investment.

PEER Certification for City Projects

Certified 5 November 2015

Total Points Achieved*	294
Reliability and Resiliency	70
Energy Efficiency and Environment	57
Operational Effectiveness	95
Customer Contribution	72
Total Possible Points*	400

* Including core and bonus criteria

* At least 280 points required for certification

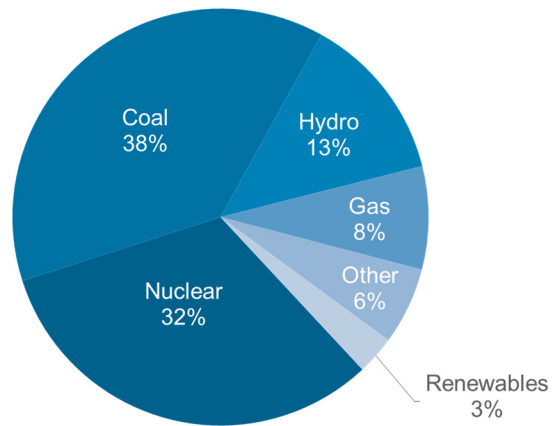


Figure 1. EPB Energy Mix

About PEER

Performance Excellence in Electricity Renewal (PEER) is a rating system and certification program for defining, assessing and verifying the overall sustainable performance of electricity delivery system design and operations. Modeled after LEED, PEER is the driving force behind the U.S. Green Building Council's vision to transform the way power systems are designed, operated and evaluated.