



GLASGOW ELECTRIC  
PLANT BOARD  
(Glasgow-EPB)

**CASE STUDY**

**MARCH 2018**

# Glasgow EPB is the first PEER Silver certified municipal utility in the world.

*“PEER objectives will become a part of our five-year plan for continuing our evolution toward a resilient and efficient energy grid for future generations.” – William Ray CEO of the Glasgow EPB*

Glasgow - EPB is the municipally-owned utility offering reliable power services to 15000 residents in the vicinity of Glasgow, Kentucky since 1962 by procuring power from Tennessee Valley Authority (TVA). The utility’s ambitious commitments towards making energy usage completely sustainable and self-reliant was rigorously evaluated through PEER certification process.

## Key Highlights of Glasgow EPB

- Coupled Advanced metering and broadband network
- Reshaping load curve through time-of-use rates and interactive load management
- 100% AMI metered network
- Peak electric demand period prediction

## STATE-OF-ART SCADA AND ADVANCED METERING INFRASTRUCTURE

The Glasgow EPB has a completely modernized electric grid with a robust broadband network running parallel to its electric lines to support its Supervisory Control and Data Acquisition System (SCADA). Through this automated communication infrastructure, EPB is able to monitor and record real-time interruptions, power quality events and identify faults and loss of continuity on the grid network. The recorded three year **average downtime frequency (SAIFI)** faced by the customers is **1.33** and EPB has planned to reduce this number of interruptions to all voltage classes within three years by integrating all LV interruptions into the HV/MV interruption database.

Glasgow EPB has Advanced Metering Infrastructure that communicates



Figure 1. Glasgow EPB SCADA system

via the EPB broadband network system to all the metering points in Glasgow. The AMI system collects kWh data, reports outages, tampers and power interruptions. All meters have bi-directional capabilities with most residential meters capable of being remotely disconnected and reconnected. This coupled metering and broadband infrastructure has helped EPB to track and continuously monitor the overall distribution grid infrastructure operations.

## EXCELLENT CUSTOMER ENGAGEMENT PORTAL

Glasgow EPB team has developed a customized, real-time portal, which indicates the customers dedicated energy usage, monitor hourly usage, peak demand period prediction, real time billing and a history of past usage. On efforts to flatten their load demand, Glasgow EPB works through **customer engagement** - exercised through customer awareness programs asking to reduce consumption in

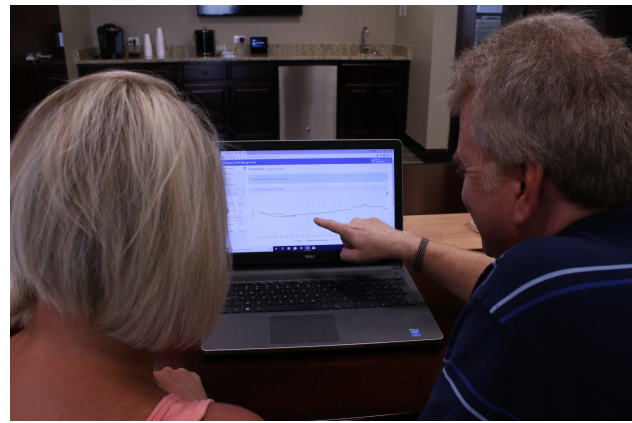


Figure 2. Glasgow EPB customer portal

peak load prediction time periods and **automation** - using capacitor voltage regulator and device based load shedding. Thus through customer engagement and automation activities, EPB has benefited the customers with saving over **\$354,000** per year in reduced peak demand charges.

## INSIGHTS FOR ENVIRONMENTAL PERFORMANCE MEASUREMENT AND IMPROVEMENT

Through PEER EE index (Energy efficiency and environmental performance index) evaluation, Glasgow EPB got insights in emphasizing TVA to associate hourly generation mix and the emissions data with every wholesale bill so that, Glasgow EPB could alter its customer portal to reflect the individual environmental impact for each customer in real time. Thus, through the EE index, Glasgow EPB was able to identify a pathway to further educate their customer base and progress towards being a sustainable electric utility.

## PEER CERTIFICATION

Performance Excellence in Electricity Renewal is a certification program that measures and helps improve power system performance of electricity delivery systems. Through application of PEER, Utilities (DISCOMs) can gain a competitive advantage by differentiating their performance, documenting the value produced and demonstrate meaningful outcomes. The PEER rating system includes four credit categories:

- ▶ Reliability and Resiliency (RR)
- ▶ Energy Efficiency and Environment (EE)
- ▶ Operations, Management and Safety (OP)
- ▶ Grid Services (GS)

Out of a possible 110 points, Glasgow EPB earned **54 points** achieving **SILVER** certification under version 2 of the PEER rating system (Utility).

PEER has helped EPB in setting futuristic goals through credits like streamlined interconnection, net metering and aggregation; identified opportunities for improvement of load factor; provided insights on the environmental impact of power procurement, thereby, driving the utility towards being a truly sustainable, reliable and resilient infrastructure through its integrated framework.

### PEER Certification for Utility Projects

Certified 23 March 2018

<b>Total Points Achieved</b>	<b>54</b>
<b>Reliability and Resiliency</b>	<b>13</b>
<b>Energy Efficiency &amp; Environment</b>	<b>07</b>
<b>Operations, Management &amp; Safety</b>	<b>13</b>
<b>Grid Services</b>	<b>17</b>
<b>Innovations &amp; Regional Priority</b>	<b>04</b>
<b>Total Possible Points</b>	<b>110</b>