

Knoxville Utilities Board

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KUB Electric System Overview

Customers: 219,999

Service Territory:
688 square miles



Electric Lines: 5,485 miles

Distribution Overhead: 4,075 miles

Distribution Underground: 1,144 miles

Transmission: 266 miles

Infeed Substations: 10

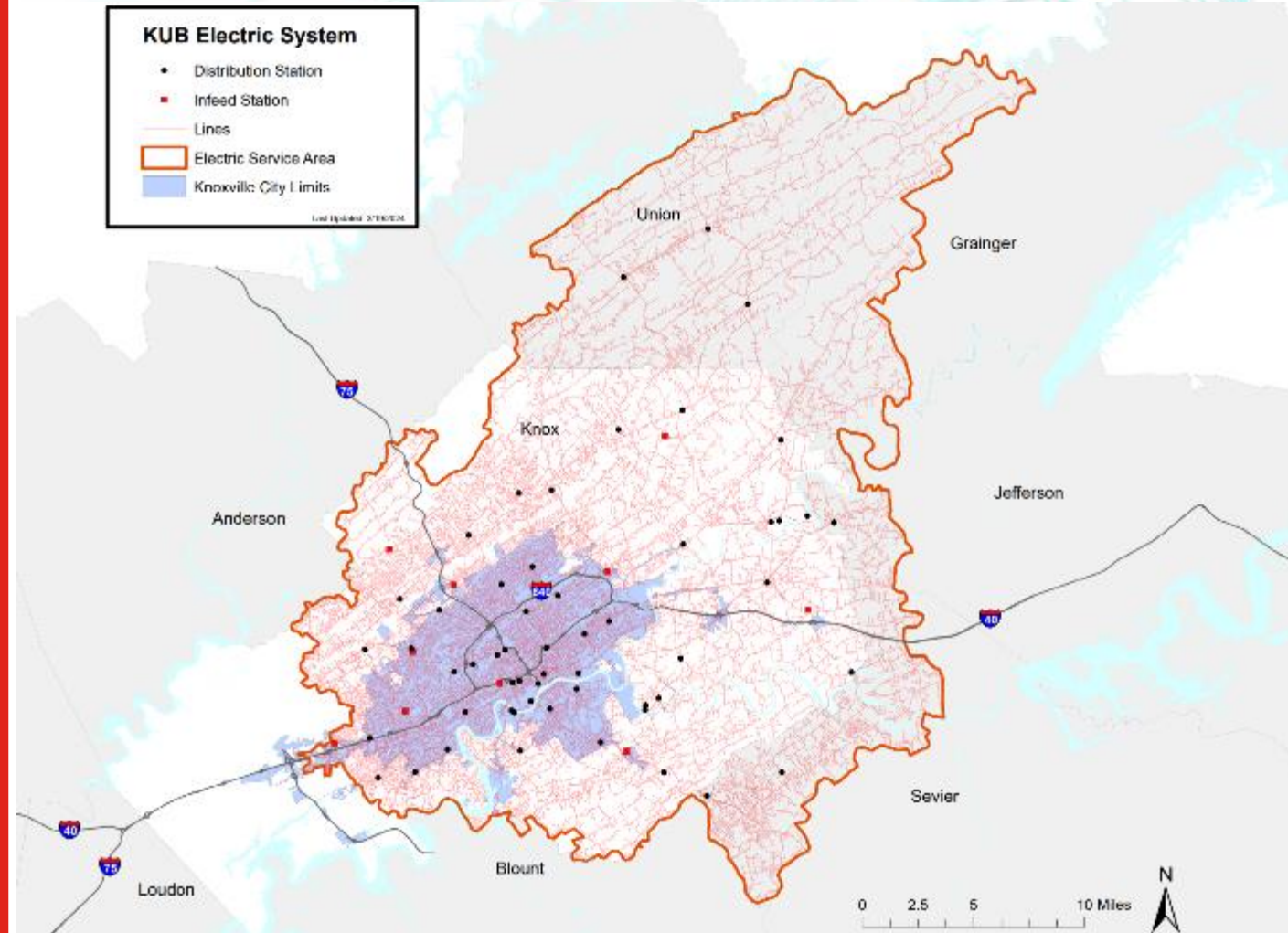
Substations: 64

System Capacity: 3,360 MW

Peak Hourly Demands:

Winter: 1,350 MW (Jan. 2024)

Summer: 1,235 MW (Aug. 2007)



Current Grid Modernization Initiatives

- Fiber-To-The-Home
- System-wide FLISR Deployment
- Voltage Optimization
- SCADA Replacement
- Generation Flexibility
- Energy Storage



KUB Sustainability Mission

- Looking Ahead: Our Aspirations
 - 400MW of Solar by 2030
 - 70% Alternative Fuel LD Fleet by 2035
 - 4,500 Homes Weatherized by 2030
 - 100% Access to Broadband by 2030
- Supporting the development of renewable energy and access to programs
- Paving the road to EV adoption through partnerships and charging infrastructure investments



Applicable Use Cases

- Generation Flexibility
 - TVA Program allows up to 5% generation
 - Offset purchased power from TVA
 - KUB plans to build ~80MW of solar
- Demand Management
 - Ability to reduce system demand during peak
 - KUB plans to build ~10MW of BESS
- Microgrid
 - Exploring feasibility for microgrid at KUB's Operational Campus for Resiliency
 - BESS installation at KUB Community Solar

Launched Knoxville's first
Community Solar program in
spring of 2023



1 MW KUB Community Solar Array

Industry Challenges

- Skilled Workforce
- Supply Chain / Equipment Lead Times
- Long-term Reliability of New Hardware
- Integration into Existing System and Schemes
- Balance of Investment in Traditional Capital

