

**KUB**

# Electric Vehicle Charging Power Rate

March 11, 2021



**Resolution 1432**  
**Second Reading**

# KUB Electric Vehicle Charging Retail Rate

- Companion retail rate to TVA wholesale rate
- Applies to separately metered EV charging stations, greater than 50 kW
- Consumption based (kWh)



# Resolution 1432

- Authorizes creation of EVC Rate Schedule to be effective April 1, 2021
- Previously approved on first reading



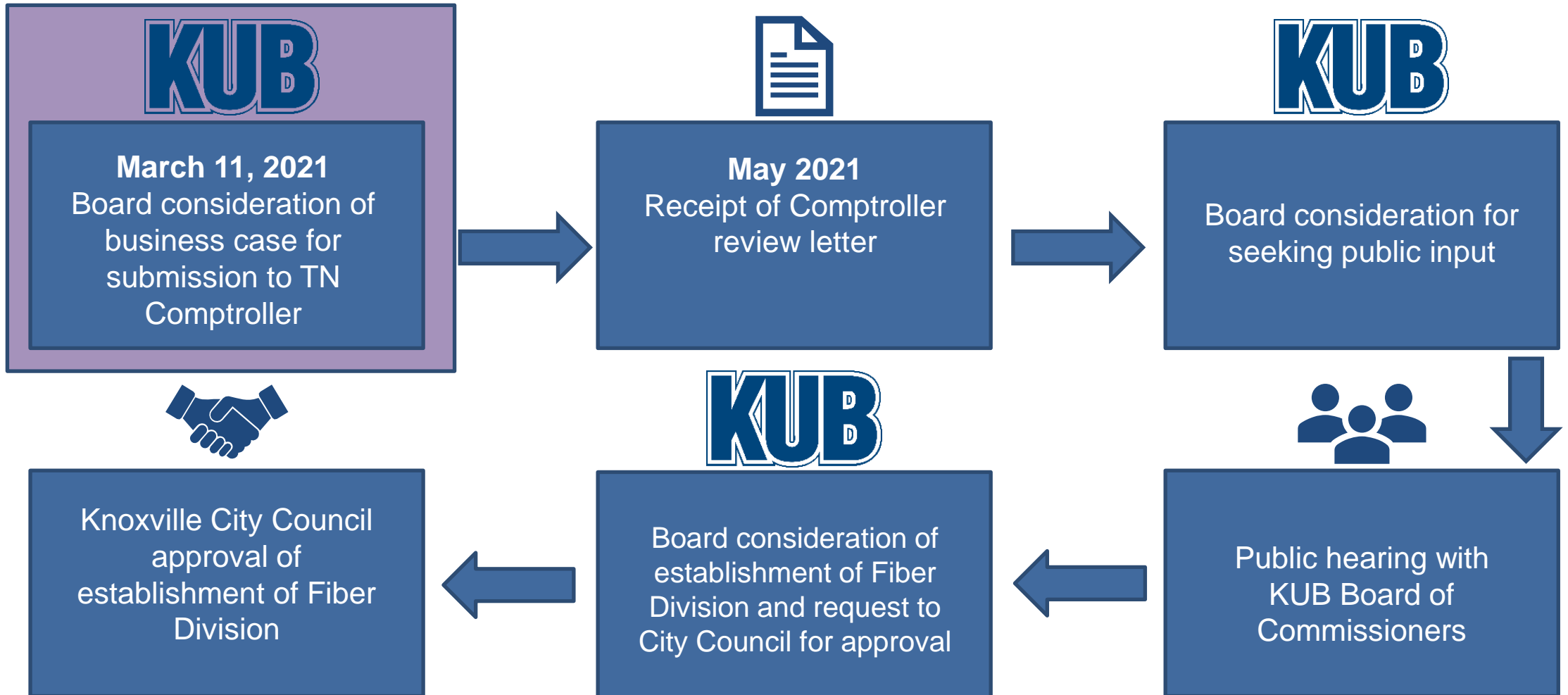
# Broadband Business Plan

March 11, 2021



**Resolution 1433**

# You Are Here



# Fiber is the Key to the Electric Grid's Future

- New and higher expectations of the electric grid are here
- Fiber provides a low latency, high reliability communication platform
- Current and future applications support reliability, system efficiency, and load management



# KUB's Next Phase of Grid Modernization

- Reliability Enhancements
  - Distribution automation
- Load Management
  - Demand response
- System Efficiency
  - Conservation Voltage Regulation
  - Volt/Var Optimization

# On the Horizon

- Distributed Energy Resources
  - Electric vehicles
  - Solar expansion
  - Home batteries
- Next generation advanced metering

# Area Utilities are Investing in a Smarter Grid

- Chattanooga Electric Power Board
  - Average annual improvement of 40% in electric reliability
- Clinton Utilities Board
  - Direct load control and voltage regulation saved customers “\$8.5M since 2011”
- Duck River Electric Membership Corporation
  - Conservation voltage regulation “provides members safe and reliable power at the lowest possible cost”
- Middle Tennessee Electric
  - Installed 1MW Tesla battery and piloting other microgrid technologies

# Distribution Automation Serves Customers

- 1.7M customer minutes of interruption (CMI) saved in FY20 (excludes major event days)
- 1.1M CMI saved during Dec. 24, 2020 snowstorm
  - 6,185 customers were not impacted due to technology
  - 20M CMI with a peak of 23K customers out of power
- Currently deployed on less than 5% KUB electric circuits

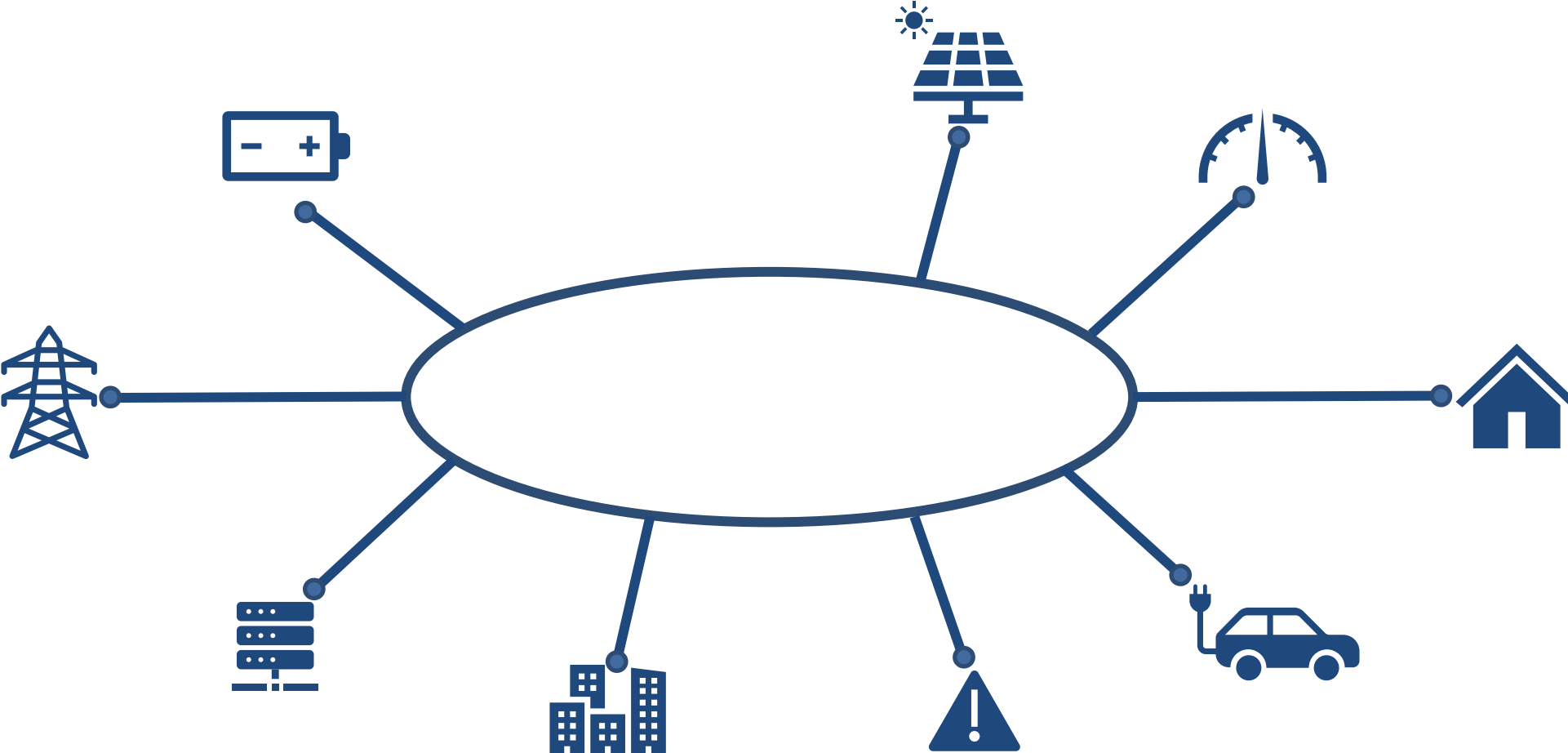
# Proposed Enhanced Grid Modernization Investments

- Full deployment of distribution automation
  - Approximately 1,200 smart switches
- Piloting of load management and system efficiency applications
- Expansion of Electric Distribution System Fiber Network

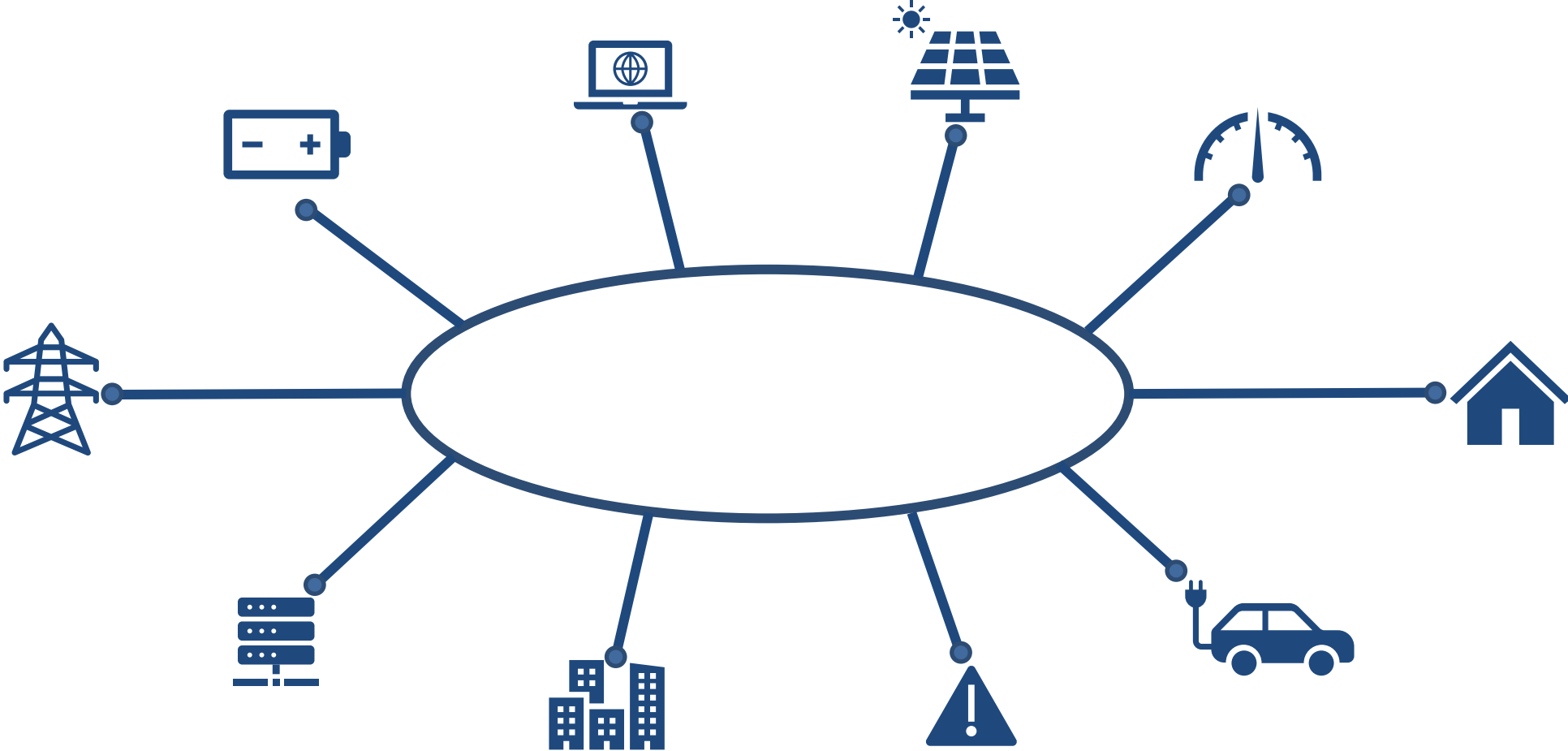
# Overview of Electric Fiber

- 5,000 miles of distribution fiber
- 675 square miles of electric service
- \$442M capital expense
- Seven years to construct network
- Foundation of a smarter electric grid
- Enables broadband service

# Fiber Network is Key to Smart Electric Grid



# Fiber Network Enables Municipal Broadband





# Enhanced Electric Grid Modernization Financial Overview

- Projected \$702M in new electric system costs over 10 years
- Capital investment represents 63% of costs
  - New distribution automation technologies
  - Full build-out of fiber infrastructure
- Up-front loan to Fiber Division
- Balanced funding approach utilizing debt, rates, fiber access payments, and other sources

# Enhanced Electric Grid Modernization

## A 10-Year Look

Electric System Costs	Amount	Cost %
Capital	\$442M	63%
O&M	\$ 67M	9%
Interest on Bonds	\$ 83M	12%
Taxes/Equivalents	\$ 50M	7%
Loan to Fiber Division	\$ 35M	5%
Cash Reserves	\$ 25M	4%
<b>Total</b>	<b>\$702M</b>	

# Balanced Funding Approach

Funding Sources	Amount	Funding %
Bond Proceeds*	\$284M	41%
Rates	\$199M	28%
Fiber Access Revenue	\$176M	25%
Fiber Loan Repayment	\$ 35M	5%
Fiber Loan Interest	\$ 8M	1%
<b>Total</b>	<b>\$702M</b>	

\* Net of issuance costs

# Increased Use of Debt

- \$287M in additional electric bonds to fund grid modernization capital investments
- Issued over seven years
- Bonds mature over 30 years
- Target debt indicators maintained

# Electric Debt Forecast

Year	Bonds for Enhanced Grid Modernization	Bonds for Other Electric Investments	Total Outstanding Bonds	Debt Ratio	Debt Coverage
1	\$60M	\$20M	\$359M	44%	3.30
2	\$55M	\$20M	\$416M	45%	3.40
3	\$36M	\$15M	\$448M	45%	3.61
4	\$31M	\$29M	\$487M	45%	3.64
5	\$33M	\$19M	\$516M	44%	3.62
6	\$35M	\$20M	\$550M	44%	3.34
7	\$37M	\$13M	\$576M	44%	3.16
8	---	---	\$552M	42%	3.40
9	---	---	\$530M	40%	3.36
10	---	\$ 9M	\$516M	38%	3.61

# Balanced Funding Plan Includes Electric Rate Increases

- Electric long-range funding plan anticipates three consecutive 3% annual rate increases
- Slightly more than half of the revenue from the rate increases will fund Enhanced Grid Modernization
- Remainder funds electric Century II
- Rate increases applied solely to usage (kWh) rate for residential customers

# Electric Rate Forecast

## INCLUDING Enhanced Grid Modernization

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
3%	3%	3%	---	---	---	---	---	---	---	9%
\$3.50	\$3.50	\$3.50	---	---	---	---	---	---	---	\$10.50

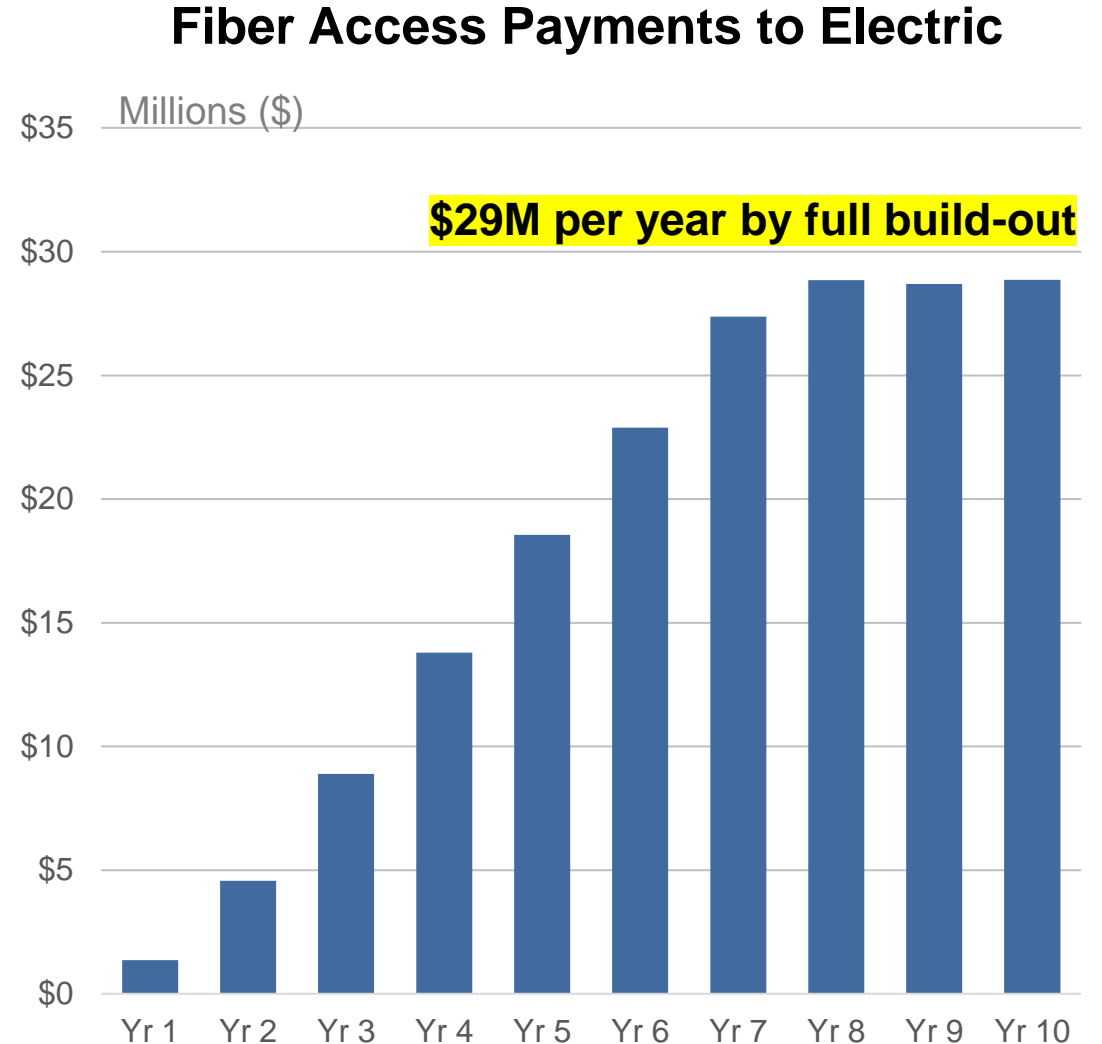
## EXCLUDING Enhanced Grid Modernization

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
---	---	1%	1%	1%	1%	1%	1%	---	---	6%
---	---	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20	---	---	\$7.20

- Enhanced grid modernization requires rate increases be slightly higher and sooner
- Long-term impact is \$3.30 on average monthly residential bill
- Commercial customer impacts would vary based on usage
- Ample notice would be provided

# Fiber Payments to Electric Reduce Need for Future Electric Rate Increases and Debt

- Fiber Division compensates Electric for use of electric system assets
- Payments include system access and utilization fees





# Business Plan Consultants

- Technical and financial expertise
  - EPB Broadband Solutions
  - Kersey Consulting
  - West Monroe Partners
  - Wilkins Group
- Legal
  - Hodges, Doughty, and Carson
  - Miller and Martin
  - Bass, Berry, and Sims

# Product Offerings

- 1 gigabit standard internet offering
- Basic, expanded, and premium TV
  - Branded streaming product
  - Eliminates major capital expense
- Resale of phone product
- Business products included in plan

# Competitive Environment

- Expectations for reliable, high speed internet have increased during the pandemic
- Survey results show desire for choice
  - Nearly 80% of customers would like KUB to offer service
  - Over 50% would switch to KUB product if offered at similar price

# Prospective Product Comparison

	<b>Xfinity 25 MB</b>	<b>Xfinity 100 MB</b>	<b>Xfinity 1 GB (1000 MB)</b>	<b>KUB 1 GB (1000 MB)</b>
Download Speed	25 MB	100 MB	1 GB	1 GB
Upload Speed	3 MB	10 MB	35 MB	1 GB
Data Cap	1.2 TB	1.2 TB	1.2 TB	Unlimited
Cost per month	\$56	\$76	\$116	\$65

# Fiber Division Highlights

- Financially independent, self sustaining KUB division
- Estimated addition of 200 KUB staff
- Plan includes additional facilities
- Marketing and sales support included

# Fiber Division Financial Highlights

- \$600M in O&M over 10 years
  - Includes \$176M in access/utilization fees paid to the Electric Division
- \$39M in Capital over 10 years
- Funded by fiber services sales revenue and \$35M loan from Electric Division
- Sales revenue projected at 35% take rate
- Break-even beginning of Year 8

# Community Support is Strong

- Extremely positive response from city/county elected officials
- Unsolicited customer feedback has been overwhelmingly positive
- KUB Customer Advisory Panel made broadband a priority issue and was highly supportive

# Customer Feedback

*"Hello, I am a KUB customer, and I live in the more rural parts of Union County. ...The only Internet we have, is our mobile hotspots on our cell phones...Our whole community is struggling, and we all need your help. We have talked to these service providers, our mayors, and even our schools, but this service seems to be our last hope. I know this is not something you can do tomorrow, but you will have customers here to help pay for your financial decisions."*



# Customer Advisory Panel Feedback

*“The minute we get the word ‘go’ we are going to start using this to our advantage.”*

*“In my opinion, this should be an absolute no-brainer for our community. I say pedal to the metal and let’s get this thing done as fast as possible because there is just a cascading set of benefits to come.”*

*“We really want to see the kiddos have access because, right now, we have about 7,000 KCS households that do not have internet access and that is unacceptable.”*

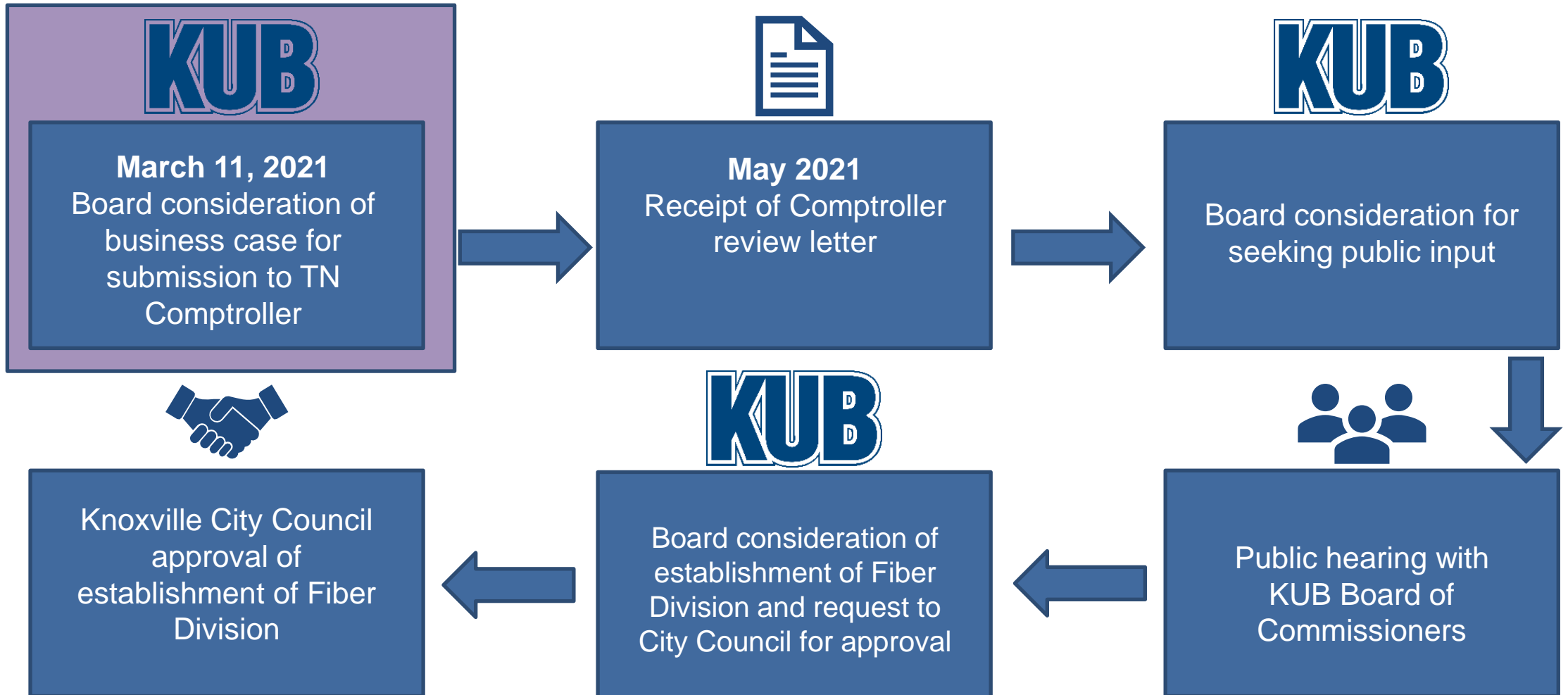
*“I think it is critically important – and COVID has obviously done this – but, internet, particularly broadband, is becoming a critical commodity. I think it is absolutely appropriate for the municipal utilities to get involved in this space. I don’t think any of the existing private providers can hold a candle to what can be done if you put your mind to it. We are very, very strong supporters of where you are going.”*

# Fiber is a Community Investment

*“The true economic value of the fiber optic infrastructure for EPB’s customers is much greater than the cost of installing and maintaining the infrastructure. Our latest research findings show that Chattanooga’s fiber optic network provides additional value because it provides high speeds, with symmetrical uploads and downloads, and a high degree of responsiveness which are necessary for the smart grid and other cutting-edge business, educational, and research applications.”*

*-Dr. Bento Lobo, head of the Department of Finance and Economics at the Rollins College of Business, University of Tennessee at Chattanooga*

# You Are Here



# Resolution 1433

- Authorizes President and CEO to submit fiber to home business plan to the State of Tennessee  
Comptroller of the Treasury
- Business plan anticipated to be submitted upon adoption

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