September 15, 2022

New EVC Rate Option

Resolution 1463 – Second and Final Reading
New EVC Rate

- Energy charges now vary (on-peak and off-peak rates)
- Facilitates transition to GSA-TOU rate
- Removes certain charges, typically associated with larger loads
- No change in KUB margin
Resolution 1463 – Second Reading

- Authorizes amendment of rate schedules of Electric Division to provide for new EVC rate (replaces existing EVC rate)
- Amends Purchased Power Adjustment to reflect new EVC rate
- Effective October 1, 2022
Long-term Natural Gas Supply Contract

September 15, 2022
KUB Natural Gas Purchasing Practices

• Resolution 1387 provides framework
• Diversify geography, supply, and time
• Most gas bought from large producers of marketers
  • Year-round
  • Winter or summer only
  • Monthly
  • Daily
• Duration
  • Most contracts are from one to five years
  • Board authority required for >six years
• KUB has one pre-pay supply contract currently
What is Pre-Pay Gas?

- Long-term, year-round gas purchase commitment
- Very common practice for non-profit local distribution companies (LDCs)
- Provides discount on purchases
- Only eligible to qualified users
- Relies on favorable interest rate environment
  - Taxable and tax-exempt bonds spread
  - Window of opportunity can be short
Potential $10M Savings

- Discount to gas index minus ~$0.33
  - $338,000 annual savings on 2,800 Dth/d
  - Potential $10,118,000 savings over term
  - Repricing may occur after initial period concludes

- 2,800 Dth/d (10% supply)
- Total savings for pre-pay transactions $20M
- All savings flow through to customers
Resolution 1464

• Authorizes KUB to sign contract with Tennergy
  • Up to 32-year natural gas supply contract
  • Potential savings of $0.33 per Dth for initial period of approximately five to seven years

• Authority to sign contract expires August 31, 2023
Community Solar Coming Soon

Construction Update
Panel installation now complete

Interest List
Over 470 submissions

Program Launch
Winter of 2022/2023

Communications Plan
Billboard, digital ads, news releases, community celebration
KUB Supports Home Energy Efficiency

- **2,176**: Homes weatherized since 2015
- **$28.5 Million**: Committed to energy efficiency through FY23
- **$2 Million**: Anticipated ongoing annual commitment
- **15%**: Average electric savings
### KUB Weatherization Program Funding Sources

- KUB annual investments
- Customer Round It Up contributions
- TVA Home Uplift match funds
- Grant funds (TDEC)

### Total Weatherization Funding Per Customer (FY21)

<table>
<thead>
<tr>
<th>Utility</th>
<th>Funding ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KUB</td>
<td>$17.32</td>
</tr>
<tr>
<td>MLGW</td>
<td>$8.37</td>
</tr>
<tr>
<td>EPB</td>
<td>$7.97</td>
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<tr>
<td>NES</td>
<td>$6.80</td>
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<tr>
<td>HSVU</td>
<td>$3.05</td>
</tr>
<tr>
<td>MTE</td>
<td>$0.32</td>
</tr>
</tbody>
</table>

*Note: All funding amounts are in thousands.*
Community Centered Growth Pilot

• TVA pilot program to provide energy upgrades for small businesses in disadvantaged communities
  • Controls & lighting
  • Security lighting
  • HVAC
  • Kitchen upgrades
• KUB recruited 11 businesses in the East Knoxville community
• TVA has invested more than $725,000 in improvements

KUB 2022 Participants
Bates Barber and Beauty Salon
Time Out Deli and Market
Keenan Grimes Community Outreach Center
The Love Kitchen, Inc.
Nana’s House Learning Center
Olive Street Soulful Market & Deli
B&B Lawn Services, Inc.
Petree’s Flowers
CONNECT Ministries
New Directions Health Care
Crutcher Memorial Youth Enrichment Center
Fleet Modernization Plan

**Improving Resiliency**
Establish replacement plans and rotation cycles

**Reducing Emissions**
Transition to alternative fuel sources such as electric, compressed natural gas, and flex-fuel

**Increasing Efficiency**
Reduce fuel consumption by right-sizing vehicles and managed idle technologies

FY22 Light-duty Fleet Vehicles
- 39% Alternative Fuels

FY30 Light-duty Fleet Goal
- 70% Alternative Fuels

Alternative Fuel Vehicles
Traditional Fuel Vehicles
TVA and TDEC are partnering with Local Power Companies to install EV fast charging stations every 50 miles along major travel corridors

- Eliminates range anxiety
- LPCs will install, own, and operate
- TVA and TDEC provide 80% funding
- Approximately 70 projects submitted
Downtown Knoxville
• Street Parking at Central Avenue at State Street
• City of Knoxville partnering to fund project

Seymour Route 411 and 441
• Site host discussions underway
APGA Excellence in Environmental Sustainability

• Enhanced leak detection and repair programs and infrastructure replacement
• Third-party damage prevention
• Energy efficiency programs
• Greenhouse gas reporting
• Methane reduction technologies and best practices
• EPA Methane Challenge participation
• Evaluating low-carbon energy sources
Water System Update
In the News

**February 2021**

**Southern exposure: Cold wreaks havoc on aging waterworks**

By MELINDA DESLATTE and LEAH WILLINGHAM  February 25, 2021

In Shreveport, where about 200,000 people were being told to boil their water, Mayor Adrian Perkins pointed to “old, aging infrastructure, just like most American cities.”

...at least 7 million Texans were told to boil their water

Mayor Chokwe Antar Lumumba (Jackson, MS) said close to $2 billion is required to modernize its water system...Monday was the first time in a week that residents could line up for water outside of Madonna Manor, a 13-floor apartment complex for seniors and people with disabilities. People brought laundry pails, bowls, buckets and wastebaskets.

**September 2022**

**People in Jackson, Mississippi, are going on week two without one basic human necessity: clean drinking water.**

"We've been on a boiled water notice for six weeks"

Joy Addison  Thu, September 8, 2022 at 6:57 AM

"...its not a matter of if these systems will fail again but when these systems will fail again if we don't have permanent fixes in place. Our stopgap measures will not be sufficient. There are more repairs taking place on a permanent level than has happened before, but there is still a significant road ahead."

– Jackson, MS Mayor Chokwe Antar Lumumba

Wicker Perlis, Mississippi Clarion Ledger  Published 9:02 pm CT, September 6, 2022
2021 ASCE Infrastructure Report Card Reveals National Challenges

American Society of Civil Engineers – National Scores

- G.P.A.: C-
- Energy: C-
- Drinking Water: C-
- Wastewater: D+
Century II Puts KUB Ahead of the Curve

- Century II investments in water began in 2006
- Utility assets and infrastructure management
  - Comprehensive, data-driven assessments
  - 10-year financial plans, including debt, rates
  - Improves safety, reliability, quality, and resilience
  - Prioritizes proactive customer communication
  - Positions our communities for growth
- Cross-functional planning and oversight
- Evolving with technology and experience
Century II Investments
Safeguard Water System

35% Older Pipe
65% Newer Pipe

Number of Repairs

<table>
<thead>
<tr>
<th>Year</th>
<th>Galvanized</th>
<th>Cast Iron</th>
<th>Cement</th>
<th>Ductile Iron</th>
<th>Plastic</th>
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<tr>
<td>FY06</td>
<td>644</td>
<td>616</td>
<td>752</td>
<td>687</td>
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<td>FY07</td>
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<td>553</td>
<td>102</td>
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<td>FY08</td>
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<td>503</td>
<td>39</td>
<td>503</td>
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<tr>
<td>FY09</td>
<td>509</td>
<td>408</td>
<td>52</td>
<td>470</td>
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<td>FY10</td>
<td>356</td>
<td>325</td>
<td>56</td>
<td>311</td>
<td>0</td>
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</tbody>
</table>

Legend:
- Red: Galvanized
- Blue: Cast Iron
- Green: Cement
- Brown: Ductile Iron
- Purple: Plastic
### Water Supply Master Plan Builds Resiliency

<table>
<thead>
<tr>
<th>Phase</th>
<th>Project</th>
<th>Timeframe</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td><strong>Phase 1</strong></td>
<td>High Service Main</td>
<td>FY17 – FY18</td>
<td>$2.2M</td>
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<tr>
<td></td>
<td>Ph 1 Electrical Upgrades</td>
<td>FY17 – FY18</td>
<td>$2.3M</td>
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<tr>
<td></td>
<td>Generators</td>
<td>FY19 – FY21</td>
<td>$12.9M</td>
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<tr>
<td><strong>Phase 2</strong></td>
<td>Filters</td>
<td>FY22 – FY25</td>
<td>$65M</td>
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<tr>
<td><strong>Phase 3</strong></td>
<td>Raw Water Distribution &amp; Phase 2 Electrical</td>
<td>FY26 – FY27</td>
<td>$12M</td>
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<tr>
<td></td>
<td>Low Pressure Pump Station &amp; Intake</td>
<td>FY28 – FY30</td>
<td>$20M</td>
</tr>
<tr>
<td><strong>Future</strong></td>
<td>High Service Pump Station &amp; Clearwell</td>
<td>FY30 – FY32</td>
<td>$30M</td>
</tr>
</tbody>
</table>
Investments in Maintenance & Technology Ensures System Performance

• Proactive system modeling and planning
• Pressure management
• Station and tank maintenance
• Transmission and distribution valve inspection
• Test hydrants for fire flow requirements
• Leak detection (find and fix)
Laboratory and Water Quality Assurance

- State-certified laboratory
  - 20 experienced employees
  - Over 100K tests annually
  - 150 parameters
- Water quality programs and continuous monitoring
  - Daily analysis
  - Customer quality programs
  - Cross connection prevention
  - System flushing
  - Source water protection program
Industry Recognition for Water System

• Two-time Water Resources Utility of the Future recipient
• Two National Environmental Achievement Awards 2020
• Water Quality Lab
  • Perfect scores on past three inspections (every three years)
  • Certified for more tests than any Tennessee public system