Meeting Agenda

• Welcome
• City updates on strategy advancement
• Partner presentations
  • TVA - Liz Upchurch
  • KUB - Gabe Bolas
  • SEEED - Stan Johnson
• Wrap-up and next steps
Meeting Objectives

• Provide updates on city initiatives and investments aligned with MCC
• Showcase critical partners advancing goals outside of our typical operations
• Hear feedback as we move into budget season
| TRANSPORTATION | EXPAND AND IMPROVE BICYCLE AND PEDESTRIAN FACILITIES, CONNECTIVITY, CONVENIENCE, AND/OR SAFETY IN A MANNER THAT SIGNIFICANTLY INCREASES THE NUMBER OF TRIPS TAKEN BY WALKING OR BIKING |
| MAKE PUBLIC TRANSIT INVESTMENTS THAT SIGNIFICANTLY ENHANCE COVERAGE, SERVICE QUALITY, FREQUENCY, AND/OR SPEED |
| SIGNIFICANTLY ACCELERATE COMMUNITY ADOPTION OF ELECTRIC VEHICLES |
| PARTNER WITH MAJOR LOCAL COMMERCIAL FLEET OPERATORS TO TRANSITION TO ELECTRIC VEHICLES |
| ENERGY + BUILDINGS | CREATE VOLUNTARY LARGE COMMERCIAL AND MULTI-FAMILY ENERGY UPGRADE PROGRAM(S) (EG. INCENTIVES, TECHNICAL ASSISTANCE) THAT ACHIEVE DEEP ENERGY SAVINGS (~25%+) IN ~20%+ OF LARGE BUILDINGS |
| AMPLIFY AND OPPORTUNISTICALLY EXPAND VOLUNTARY HOME ENERGY UPGRADE PROGRAM(S) THAT WILL ACHIEVE DEEP ENERGY SAVINGS (~25%+) IN 20% OF HOMES |
| DEVELOP OR AMPLIFY OPPORTUNITIES TO INVEST IN RENEWABLES AT SCALE, INCLUDING COMMUNITY SOLAR AND IN-VALLEY INVESTMENT |
| RESEARCH AND DEVELOP STRATEGIES TO PROMOTE OPPORTUNISTIC ELECTRIFICATION (EG. REPLACEMENT OF FOSSIL FUEL-FIRED FURNACES WITH ELECTRIC HEAT PUMP TECHNOLOGIES) IN EXISTING BUILDINGS OVER TIME |
| WASTE | IMPLEMENT FOOD WASTE REDUCTION AND COLLECTION PROGRAMS THAT CAPTURE ~80%+ OF ORGANIC WASTE FROM ALL HIGH-VOLUME LOCATIONS (E.G. RESTAURANTS) |
| INCREASE RESIDENTIAL RECYCLING THROUGH COMMUNITY ENGAGEMENT AND EDUCATION STRATEGIES |
| PROMOTE CONSUMPTION-REDUCTION APPROACHES SUCH AS SHARING AND RE-USE THROUGH EDUCATION CAMPAIGNS |
| RESEARCH PATHWAYS TO OFFER ORGANICS (FOOD/YARD WASTE) COLLECTION FOR SINGLE-FAMILY AND MULTI-FAMILY RESIDENTIAL PROPERTIES |
Multi-modal ‘corridors of connectivity’

Mobility, accessibility, safety, & affordability

Increased EVSE support
TRANSPORTATION

<table>
<thead>
<tr>
<th>INVESTMENT</th>
<th>Strategy</th>
<th>FY22 Adopted</th>
<th>FY22 Amended</th>
<th>Total</th>
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<tbody>
<tr>
<td>Multi-modal + BikePed</td>
<td>$6.25m</td>
<td>$3.97m</td>
<td>=$10.22m</td>
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<tr>
<td>Public Transit</td>
<td>$1.3m</td>
<td>$1.6m</td>
<td>=$2.9m</td>
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<tr>
<td>Vehicle Electrification (EVSE)</td>
<td>$90k</td>
<td>$110k</td>
<td>=$200k</td>
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<td><strong>Total</strong></td>
<td>=$7.64m</td>
<td>=$5.68m</td>
<td>=$13.32m</td>
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NOTABLE PROJECTS & INITIATIVES

- 2021 Green Fleet purchasing policy
- 2021 KAT electric buses
- 2021 KAT Comprehensive Operational Analysis & Bus Stop Improvement Plan
- 2021 Vision Zero resolution adopted
- 2021 planned expansion of fleet EVs and public EV chargers
- 2021 Mayor Kincannon featured in TVA In Charge EV promotional video
- 2020 Sidewalk Study
- 2020-21 Drive Electric Tennessee partnership
Lead by example

Partner programs

Energy access & burden
BUILDINGS & ENERGY

INVESTMENT

<table>
<thead>
<tr>
<th>Strategy</th>
<th>FY22 Adopted</th>
<th>FY22 Amended</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy</td>
<td>$110k</td>
<td>-</td>
<td>=$110k</td>
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<tr>
<td>Decarbonization</td>
<td>$50k</td>
<td>$90k</td>
<td>=$140k</td>
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<td><strong>Total</strong></td>
<td>=$160k</td>
<td>=$90k</td>
<td>=$250k</td>
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NOTABLE PROJECTS & INITIATIVES

- 2021 KUB community solar array at Morris Ave complex
- 2021 TVA Green Switch Match pilot contribution
- 2021 DOE Low Carbon Pilot participants (two facilities)
- 2021 DOE Better Climate Challenge (COP26 announcement)
- 2021 PV Design-Build for city operations
- 2021 Mayor Kincannon in GreenInvest promotion
City incentives & services

Education & engagement

Partner/private programs
## WASTE

### INVESTMENT

<table>
<thead>
<tr>
<th>Strategy</th>
<th>FY22 Adopted</th>
<th>FY22 Amended</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost</td>
<td>$10k</td>
<td>-</td>
<td>$10k</td>
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### NOTABLE PROJECTS & INITIATIVES

- 2021 Community Compost Pilot
- 2021 ConServe low-waste restaurant certification pilot
Approx. $1 trillion total; TN to receive approx. $7b

<table>
<thead>
<tr>
<th>Sector</th>
<th>Allocation</th>
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<tbody>
<tr>
<td>Roads, bridges, and major infrastructure projects</td>
<td>$110b</td>
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<tr>
<td>Grid Modernization</td>
<td>$73b</td>
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<tr>
<td>Water &amp; Wastewater</td>
<td>$55b</td>
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<tr>
<td>Resiliency (coastal &amp; climate adaptation)</td>
<td>$47b</td>
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<td>Public transit (largest in history per White House)</td>
<td>$39b</td>
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<td>Transportation safety programs</td>
<td>$11b</td>
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<td>EVs and EVSE</td>
<td>$7.5b</td>
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<td>ZEV/EV buses</td>
<td>$5b</td>
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<tr>
<td>Community revitalization</td>
<td>$1b</td>
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Questions?
Partner Updates

Liz Upchurch  Gabriel Bolas  Stan Johnson
Tennessee Valley Authority

- The largest public power provider in the U.S.
- Together with 153 Local Power Companies we provide electricity to over 10 Million People
- Power for 57 large industrial and Federal installations
- Federal Corporation; nonprofit; receives no tax-payer funding
Provide affordable, reliable power.

Steward the Valley’s natural resources.

Partner for economic growth.
TVA Sustainability and Carbon Reports

tva.com/sustainabilityreport
tva.com/carbon
Carbon Leadership Today

PERCENT REDUCTION IN CO2 EMISSIONS (TONS)\(^1\)

2005-2019

TVA is reducing carbon emissions faster than other peer utilities.

\(^1\) Annual CO2 emissions normalized by generation. Data captures emissions only from owned or controlled generation capacity and is reported on a calendar year basis. Data Sources: U.S. Energy Information Administration, U.S. Environmental Protection Agency.
**Low Carbon Electricity Supports Communities in Achieving their Goals**

Relative to 2005/System Level:
- 2020: 63% reduction
- 2030: 70% reduction goal
- 2050: Net-zero Aspiration

**Building and Energy Priorities**: Efficiency – Home/ School Uplift; TVA Green Programs; TVA Carbon Goals; Increase Renewables

**Transportation Priorities**: Electrification of Transportation (EV’s) and Charging Infrastructure
# Buildings and Energy: Energy Efficiency

**Knoxville / KUB Service Territory**

| 60 GWh energy savings from energy efficiency programs | $3.8M in direct payments to end-users through EnergyRight rebates | 15,498 participants in energy efficiency and electrification programs |

**Knoxville, TN:**

407 Homes weatherized through the Home Uplift program, reducing the energy burden of Low-Income residents.

- $7,938 average cost invested per home
- $2,658,334 funding for FY21 ($916k funded by TVA, $916k by KUB, $75k by TDEC)
- $328/yr average bill savings per home

**Demand Response:**

- Knoxville has **61 customers** actively participating in TVA’s demand response program.
- 61 participants, 114 MW total nomination, $7.6M annual capacity payments

**More than 340 businesses have participated in energy programs, receiving more than $2.8M in incentives**

**KUB has 2 schools participating in the School Uplift Strategic Energy Management Pilot in partnership with TN EEST: South Knoxville Elementary and Middle**

**Carbon Avoided**

EnergyRight’s programs can help both LPCs and End-Users reduce CO2 to achieve their GHG goals.

- **464,142 tons of CO2 avoided by installing energy reducing technologies (over the life of installed equipment)**

**Equivalent to:**

- 76.5k homes powered for one year
- 88 wind turbines running for a year
- 7M trees grown for 10 years

Unless otherwise noted, all information is from 2015 to date.

Date Issued: November 4, 2021
Buildings and Energy: Renewables

TVA Solar Generation Expansion

Targeting 10,000 MW by 2035
Transportation Priorities

**Fast Charging every 50 miles on major highways and interstates**
Transportation Priorities

Electric Highway Coalition

- 14 Members representing 29 States and the District of Columbia
- Goal to grow EV charging along major routes
- Committed to positive charging experience – accessible and fast (20-30 min)
EnergyRight.com/EV

- EV Basics
- Compare Vehicles
- Find a Charger
- Debunk Myths
Sustainability is Key to KUB’s Mission

• KUB exists to serve its customers
• KUB has a long legacy of Environmental Stewardship
• Investments require balance with needs to safe, reliable, and affordable utility service
• KUB is already acting on the Mayor’s Climate Council goals of reducing emissions 80% by 2050
• First local power company to participate in TVA’s Green Invest program with one of the largest investments in the nation

• **502 MW** of new-to-the-Valley solar

• Will make up **20%** of KUB’s electric load by 2024

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**Climate Council Goal**

Develop or amplify opportunities to invest in renewables at scale. Including community solar and in-valley investments

**502**

MW of solar

**83,000**

homes served
• Committed $1.5 million to building Knoxville’s first Community Solar Project

• **1 MW** solar array to be located at City of Knoxville Public Works

• Expected to go online in **2022**

• Will provide KUB customers access to a local renewable energy source

• Builds upon existing solar investments at KUB facilities

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**Climate Council Goal**

Develop or amplify opportunities to invest in renewables at scale. Including community solar and in-valley investments
Electric Vehicle Adoption
Transportation

• Founding member of Drive Electric Tennessee to promote EV adoption

• Supported Knoxville Area Transit with development of charging infrastructure for up to 25 all-electric buses

• First local power company to offer EV charger rebate program to help more than 200 customers

• First to adopt TVA’s EVC rate to support the development of chargers in our area

Climate Council Goal
Significantly accelerate community adoption of electric vehicles

More than
200
EV Rebates since 2019
Low-Income Weatherization
Buildings and Energy

• $26.8 million in funding committed to low-income weatherization programs since 2015
• More than 1,900 homes served
• Helps families save an average of $15-20 on their monthly utility bills
• KUB has committed $500,000 annually to water efficiency through Water Savers program

Climate Council Goal
Amplify and opportunistically expand voluntary home energy upgrade program(s) that will achieve deep energy savings
Commitment to Sustainability

• KUB’s commitment to sustainability expands beyond our direct actions to support the Mayor’s Climate Council
• Learn about these efforts and more in KUB’s 2021 Environmental Report

WWW.KUB.ORG/ENVIRONMENT
MAYOR’S CLIMATE COUNCIL
NOVEMBER 2021
SOLAR HOME PROJECTS

GREEN ENERGY
GREEN CONSTRUCTION JOB TRAINING
HOUSING SECURITY
EDIBLE FOREST + GREENHOUSE CAFE

-EDIBLE FOREST (FOOD FORESTRY): IMPROVES GREEN FOOD SECURITY IN EAST KNOXVILLE

-GREENHOUSE CAFE EVENTS: ENVIRONMENTAL EDUCATION AND COMMUNITY BUILDING
COMMUNITY ENGAGEMENT PROGRAM

COMMUNITY OUTREACH

STUDENT TRAINING IN COMMUNICATION

INCREASED ACCESSIBILITY OF GREEN RESOURCES

HELP WITH KNOX HOUSING ASSISTANCE
  - RENTAL ASSISTANCE
  - UTILITY ASSISTANCE
Thank you!