



Electric Vehicle Car Share

Drew Frye

TVA - Technology Innovation



Electric Vehicles are Not New for TVA



TVA's Henney Killowatt EV- 1961



TVA's Advanced Vehicle Test Facility (AVTF) built in 1980's



50 electric vehicles of varied types and purposes at its electric vehicle test facility near Chattanooga.

- Electric Transportation Research (dating back to the 1970's)
 - Vehicle Demonstrations and Evaluation
 - Charging Infrastructure Demonstrations and Evaluation
 - Commercial & Industrial Applications
 - Power System Impacts
 - Consumer Behaviors
 - Education and Outreach



Why Focus on Electric Vehicles? – TVA Mission

Energy | Environment | Economic Development



*Independence (Security)



Why Focus on Electric Vehicles? – TVA Mission

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- 25% of all U.S. energy is used for transportation (new electric market)
- Highly flexible load and distributed energy resource
- Potential to off-set some residential solar

*Independence (Security)



Why Focus on Electric Vehicles? – TVA Mission

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- For the first time in 40 years, transportation is now the single largest source of emissions in the United States



- Already cleaner than gas today (41-50 MPG)
- Future, cleaner power even better (100+)

*Independence (Security)



Why Focus on Electric Vehicles? – TVA Mission

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- End-user saves ~2/3 driving electric (lower O&M)
- Increase local/state GDP (lower O&M and fuel volatility for consumers, leverage federal tax incentives, local fuel source)
- Nissan LEAF and battery assembled in Smyrna, TN



*Independence (Security)



Why Focus on Electric Vehicles? – TVA Mission

Energy | Environment | Economic Development

- Americans spend ~\$13M per hour on foreign oil for transportation needs
- Domestic Cars + Domestic Energy
- Improves U.S. competitiveness and position globally

***Independence (Security)**



EV Car Sharing in Chattanooga

- In 2011, the EPA approved eleven environmental projects to support cleaner air in the Tennessee Valley
 - Reduce emissions associated with transportation
 - Increase public EV charging infrastructure, increase awareness and accessibility of Electric Vehicles
- Based on previous experience deploying TVA SMART Stations (Solar+Battery+EV) in Chattanooga, Memphis, Nashville & Knoxville
- TVA-CARTA Partnership
 - RFP(s) for “turn-key” solution unsuccessful
 - RFP for Engineering Support
 - Private-Public partnerships for site hosts (facilitated by PROVA - bike share)
 - Installed Charging Infrastructure to attract Car Share Service Provider
- Concept, Design, Implementation, Deployment - \$3M



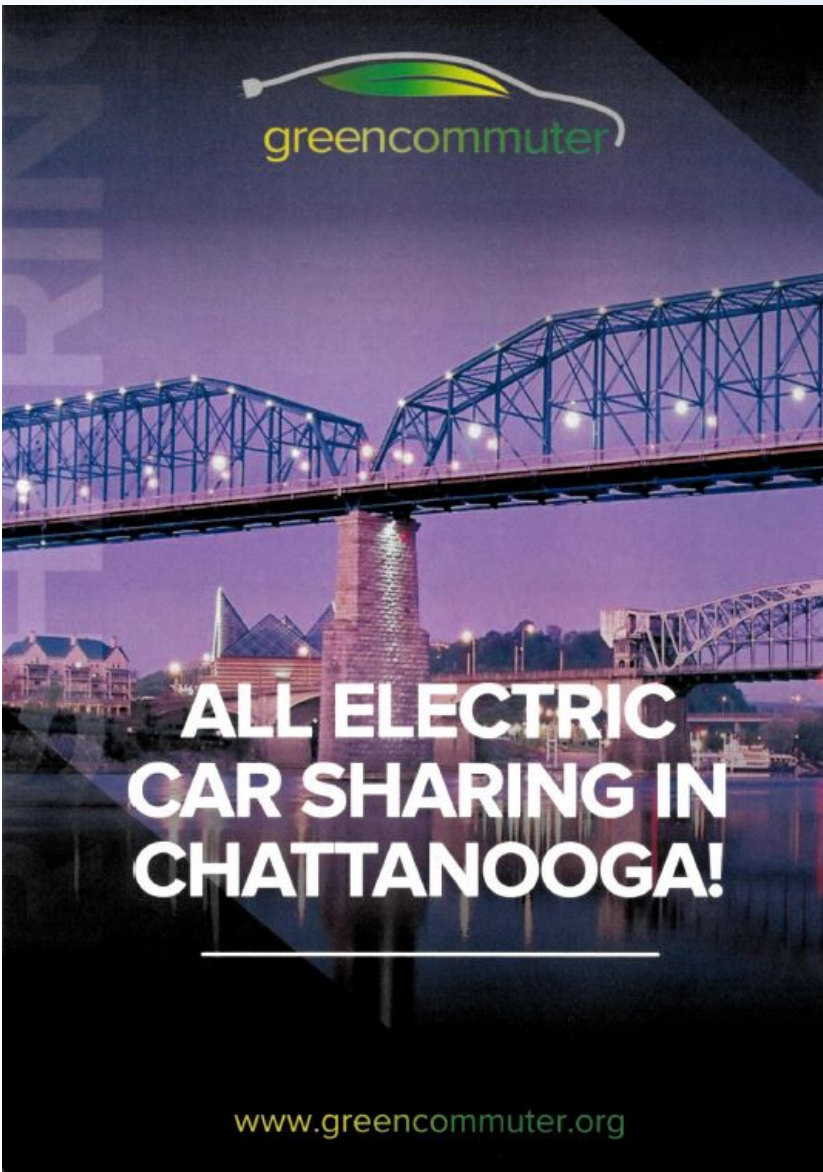
Creating an EV Car Share System from “Scratch”

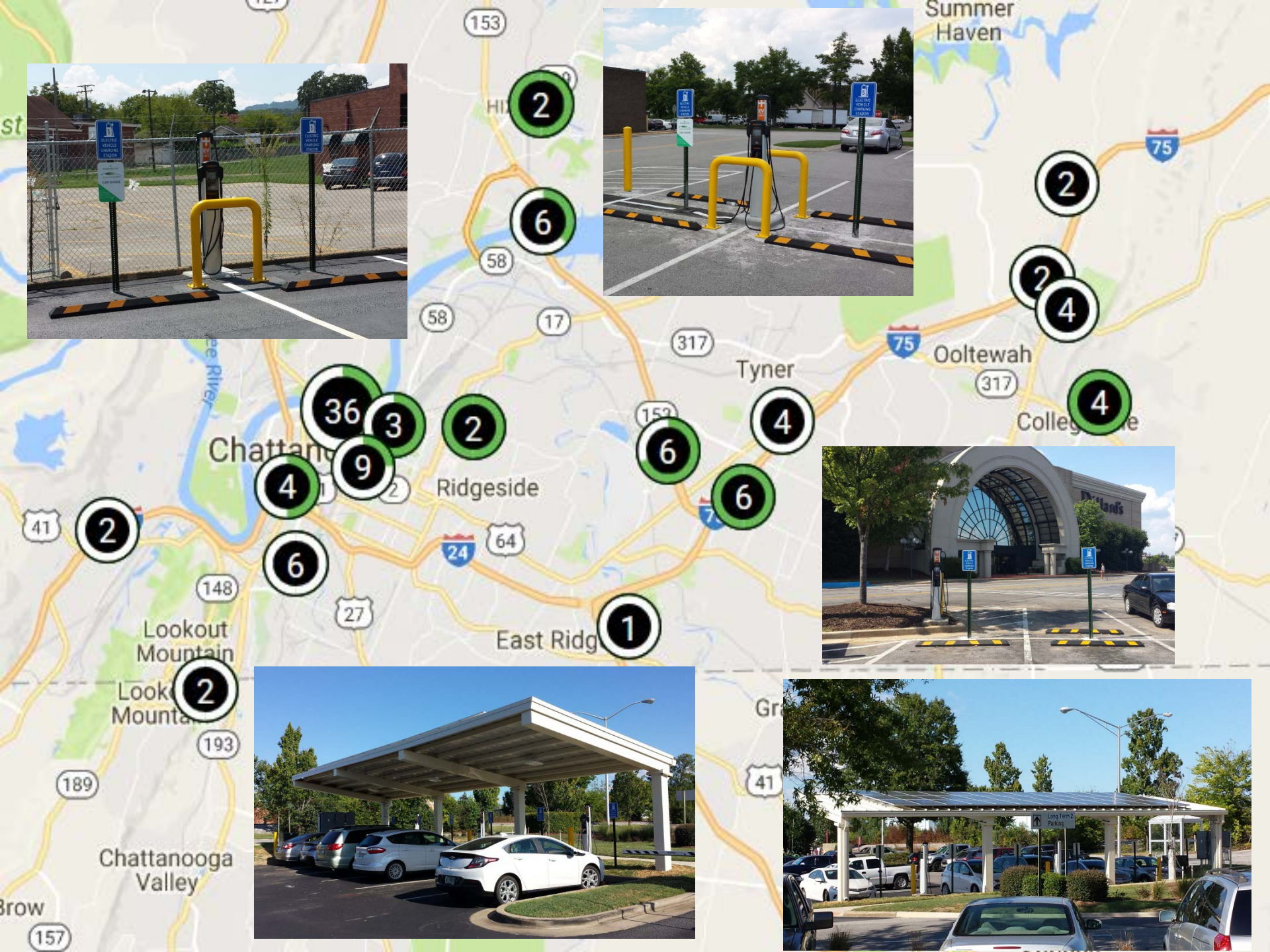
Charging/Solar Infrastructure

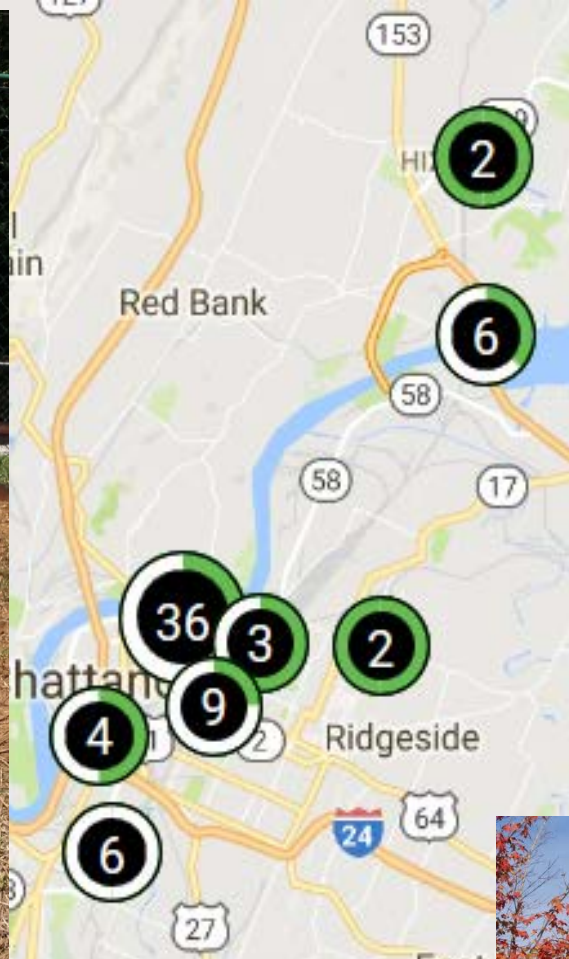
- “Solar-Assisted” EV Charging Stations
 - 3 Solar + EV Sites - Airport, Southern Adventist, CARTA (80kW solar total)
 - 17 EV only Sites – tourism, healthcare, education, business, transportation hubs, community, retail, etc.
 - 50+ Charging Opportunities, free to public when not in car share use

Vehicles & Car Share Platform (Oct 16’)

- Green Commuter Car Share Platform
 - 20 All-electric Nissan LEAFs
 - Online registration, application based operation (phone App)
 - Cost effective pricing plans (\$7/hour, \$45 daily) and commercial deals







Chattanooga launches one of first electric vehicle ride share programs in U.S.

September 14th, 2016 | by [Dave Flessner](#) | in Business Around the Region | Read Time: 5 mins. |



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Lunch & Learn: Electric Car Share Program

Electric car-sharing program launches in Chattanooga

October 12th, 2016 | by [Tim Omarzu](#) | in Business Around the Region | Read Time: 3 mins. |



Power utilization engineer Andrew Frye speaks at the celebration of Chattanooga's electric vehicle car share, "First Plug-In."

by Angela Lewis Foster / Times Free Press.

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Chattanooga Gets Green Car Sharing

by WTVC | Wednesday, June 29th 2016



EVs are here. Try to keep up.

CHARGED
ELECTRIC VEHICLES MAGAZINE

Nooga.com

BusinessWire
A Berkshire Hathaway Company





Questions? (Car Share)

www.greencommuter.org

- ✓ Increase public EV charging infrastructure
- ✓ Increase awareness & accessibility of EVs
- ✓ Reduce emissions from transportation



Car Sharing in Chattanooga

Green Commuter is a membership-based, fully automated platform where individuals and businesses have 24/7 access to a network of **electric vehicles**. Members can rent a vehicle on an as-needed basis, paying only for the time they reserve. Green Commuter pays for the electricity, insurance, parking, and maintenance. **It's like owning a car without the financial responsibility of car ownership.**

Benefits

Get Started

Available for:



\$ **7** /hour

\$ **45** /day

\$25 Application Fee

For a limited time, we are offering a \$30 driving credit for new registrations. This means you have \$30 in your Green Commuter account to use for future trips.

JOIN NOW

 Redeem Coupon