

**Commonwealth of Kentucky
Before the Public Service Commission**

In the Matter of:

ELECTRONIC APPLICATION OF LOUISVILLE)
GAS AND ELECTRIC COMPANY FOR AN)
ADJUSTMENT OF ITS ELECTRIC AND GAS)
RATES AND FOR CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY)

Case No.
2016-00371

Direct Testimony of

TARC Capital Projects Administrator Geoff Hobin

On Behalf of

Louisville/ Jefferson County metro Government

Direct Testimony of Geoff Hobin

1 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A My name is Geoff Hobin and my address 1000 West Broadway, Louisville, KY 40203.

3 **Q WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?**

4 A I am the Capital Projects Administrator for the Transit Authority of River City (TARC)
5 and have been so for 14 years.

6 **Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND RELEVANT
7 EXPERIENCE.**

8 A I have a Bachelors degree from SUNY Potsdam, NY and a Master's degree in Public
9 Administration from the University of Louisville. My relevant experience is as project
10 manager for most of TARC's vehicle procurement, construction and systems projects for
11 over 20 years. Specifically, I managed TARC's acquisition of full battery-electric buses
12 from our applications for Federal funding to vehicle procurement, as well as location and
13 construction of our fast charge stations.

14 **Q ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

15 A I am testifying on behalf of the Louisville/Jefferson County Metro Government
16 (Louisville Metro).

17 **Q EXPLAIN THE ELECTRIC BUS PROGRAM AND ITS BENEFITS?**

18 A Four years ago, in order to replace the highest emitting vehicles in its fleet, TARC sought
19 and received funding from the Federal Transit Administration's Clean Fuels Program to
20 acquire its first full battery-electric vehicles. TARC also received as award of

1 Congestion Mitigation and Air Quality (CMAQ) funds from the Kentucky Transportation
2 Cabinet (KyTC) for the same purpose. By replacing its old diesel trolleys with zero
3 emission electric vehicles, TARC reduced mobile source emissions of Hazardous Air
4 Pollutants (HAP) by over 6,000 pounds per year. Electric buses are also substantially
5 quieter than diesel buses. Electric buses create 50% lower noise levels than diesel buses.
6 In addition to the health and environmental benefits battery electric buses provide to the
7 community, there are economic benefits. Electric buses have 30% fewer parts than diesel
8 buses, and no fuel, engine, or exhaust after-treatment systems, and greatly improved
9 brake life. The result is a reduction in maintenance costs of approximately 40%. That
10 greater efficiency enables TARC to expend more of its resources on operations: direct
11 service to our community.

12 **Q WHAT TYPE OF INFRASTRUCTURE CURRENTLY EXISTS FOR THESE**
13 **BUSES?**

14 **A** TARC's battery-electric buses utilize all of the same infrastructure our diesel and diesel-
15 electric hybrid buses use with one important exception. They are cleaned, serviced,
16 maintained and stored in the same facilities. However, rather than fueling at our diesel
17 fuel station, with its underground storage tanks, piping and pumps, our electric buses
18 'fuel' at fast charge stations. TARC has two of these stations: on Market Street at the
19 Glassworks Garage between 8th and 9th Streets, and on South 3rd Street just south of York
20 Street. Each station consists of about 150 feet of roadway in the curb lane separated from
21 traffic by curb delineators, a charge head assembly suspended over the curb lane from a
22 very substantial utility pole, and the charging equipment that is located a short distance
23 from the charge head. In the case of the Market Street location the charging equipment is

1 located just inside the parking garage, and on 3rd Street it is located in a small surface
2 parking lot immediately adjacent to the right of way. Both sites were selected with the
3 active collaboration of representatives from LG&E, KyTC, Louisville Metro Public
4 Works and Assets, and other stakeholders. LG&E provided a transformer at each site
5 capable of supporting peak demand of 500 kilowatts (kW). In addition to the charge head
6 and transformer, the charge station includes switchgear, charge equipment, and docking
7 control equipment.

8 **Q IS EXPANSION OF THE PROGRAM PLANNED AND TO WHAT EXTENT?**

9 A TARC believes the potential exists to convert virtually its entire fleet to electric drive
10 over time. The three to four times greater efficiency of electric drive trains over internal
11 combustion drive trains, combined with lower maintenance costs and the important health
12 and environmental benefits make for a compelling case for conversion. However, there
13 are barriers to overcome before planning for expansion can proceed. Those barriers
14 include insufficient programmable capital resources, a 27% backlog in fleet replacement,
15 the relatively high capital cost of electric buses compared to diesel buses, and finally, the
16 relatively high cost of energy (fuel) associated with the Commercial Time-of-Day
17 Secondary Service rate that applies to TARC's fast charge stations.

18 **Q WHAT IS THE APPROXIMATE ANNUAL EXPENSE OF THE LGE ELECTRIC**
19 **BILLS TO THE BUS PROGRAM?**

20 A Given the current number of buses and hours of service, the approximate annual expense
21 at current rates is \$152,000.

1 **Q WHAT IS THE CURRENT PROBLEM WITH THE LG&E BILLING OF THE**
2 **ELECTRIC BUS PROGRAM?**

3 A While TARC understands the need for all utilities to fully recover the cost of installing,
4 maintaining and expanding their infrastructure, the high cost of demand charges
5 associated with the Time-of-Day Secondary Service compares unfavorably with the cost
6 of diesel fuel. As an example, this past November the cost per mile of electricity
7 provided at our Market Street charge station was \$0.55. Our current average cost of diesel
8 fuel per mile is \$0.28. Demand charges account for over 70% of the total cost of the
9 electricity used to fuel TARC's electric buses. Absent those demand charges, electricity
10 has a significant advantage over diesel fuel.

11 **Q WHAT IS THE LONGTERM IMPACT OF THOSE PROBLEMS ON THE TARC**
12 **ELECTRIC BUS PROGRAM?**

13 A TARC buses in local service average about 45,000 per year. Given the incremental cost
14 of electricity stated above (\$0.27), the average additional fuel cost per electric vehicle
15 added to the fleet is \$12,150. When considering a total fixed route fleet of 225 buses, it
16 is hard to make a case for converting to battery electric buses when faced with those
17 numbers, even when considering the other advantages of electric buses.

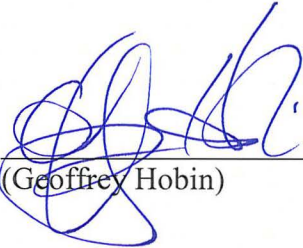
18 **Q WHAT DOES TARC PROPOSE AS A SOLUTION TO ENCOURAGE**
19 **CONTINUED EXPANSION OF THE ELCTRIC BUS PROGRAM?**

20 A TARC proposes consideration of alternative, lower cost tariff options, or rate design
21 proposals for electric vehicles operated for a public transit purpose. By so doing, LG&E
22 would provide a more inviting environment for the adoption of electric vehicle
23 technology, and for the consumption of their principal product, electricity. At a

1 minimum, TARC proposes that LG&E conduct electric vehicle load research, and to
2 publish the results.

Verification

The undersigned, Geoff Hobin, being duly sworn, deposes and says that he is the Capital Projects Administrator for the Transit Authority of River City (TARC), and that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.



(Geoffrey Hobin)

STATE OF KENTUCKY)
COUNTY OF Jefferson)

SUBSCRIBED AND SWORN to before me by (name) in the aforesaid state and county
on the 3 day of March 2017.

My commission expires 9/22/2020

SHANTAL E CABELL
Notary Public - State at Large
State of Kentucky
Notary ID # 565450
My Commission Expires Sep. 22, 2020



Notary Public