

Commonwealth of Kentucky

Before the Public Service Commission

In the Matter of:

THE APPLICATION OF KENTUCKY)
UTILITIES COMPANY FOR)
CERTIFICATES OF PUBLIC)
CONVIENENCE AND NECESSITY)
AND APPROVAL OF ITS 2011)
COMPLIANCE PLAN FOR RECOVERY)
BY ENVIRONMETNAL SURCHARGE)

Case No. 2011-00161

In the Matter of:

THE APPLICATION OF LOUISVILLE)
GAS AND ELECTRIC COMPANY FOR)
CERTIFICATES OF PUBLIC)
CONVIENENCE AND NECESSITY)
AND APPROVAL OF ITS 2011)
COMPLIANCE PLAN FOR RECOVERY)
BY ENVIRONMETNAL SURCHARGE.)

Case No. 2011-00162

**Direct Testimony of
Rachel S. Wilson**

**On Behalf of
Sierra Club and Natural Resources Defense Council**

September 16, 2011

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1 **1. INTRODUCTION AND QUALIFICATIONS**

2 **Q Please state your name, business address and position.**

3 **A** My name is Rachel Wilson and I am an Associate with Synapse Energy
4 Economics, Inc. (Synapse). My business address is 485 Massachusetts Avenue,
5 Suite 2, Cambridge Massachusetts 02139.

6 **Q Please describe Synapse Energy Economics.**

7 **A** Synapse Energy Economics is a research and consulting firm specializing in
8 energy and environmental issues, including electric generation, transmission and
9 distribution system reliability, ratemaking and rate design, electric industry
10 restructuring and market power, electricity market prices, stranded costs,
11 efficiency, renewable energy, environmental quality, and nuclear power.

12 Synapse's clients include state consumer advocates, public utilities commission
13 staff, attorneys general, environmental organizations, federal government and
14 utilities.

15 **Q Please summarize your work experience and educational background.**

16 At Synapse, I conduct research and assist in writing testimony and publications,
17 focusing on a variety of issues relating to electric utilities, including: federal and
18 state clean air policies; emissions from electricity generation; environmental
19 compliance technologies, strategies, and costs; integrated resource planning;
20 valuation of environmental externalities from power plants; and the nexus
21 between water and energy.

22 I also provide project support through modeling-related analysis of electric power
23 systems. I am proficient in the use of optimization and electricity dispatch
24 models, including STRATEGIST, PROMOD, and PROSYM/Market Analytics,
25 to conduct analyses of utility service territories and regional energy markets. I
26 have participated in in-house trainings for STRATEGIST and also attended an

1 advanced training session at the Atlanta headquarters of Ventyx, an ABB
2 Company.

3 Prior to joining Synapse in 2008, I worked for Analysis Group, Inc., an economic
4 and business consulting firm, where I focused on issues relating to energy and the
5 electric industry. I was also a Research Assistant at the Yale Center for
6 Environmental Law and Policy and was responsible for collecting and processing
7 data on corporate and environmental strategy, as well as environmental
8 performance data on a country-by-country basis.

9 I hold a Master of Environmental Management from Yale University and a
10 Bachelor of Arts in Environment, Economics, and Politics from Claremont
11 McKenna College in Claremont, California.

12 A copy of my current resume is attached as Exhibit RW-1.

13 **Q On whose behalf are you testifying in this case?**

14 **A** I am testifying on behalf of Sierra Club and the Natural Resources Defense
15 Council.

16 **Q Have you testified previously before the Kentucky Public Service
17 Commission?**

18 **A** No, I have not.

19 **Q What is the purpose of your testimony?**

20 **A** My testimony describes the Strategist modeling I performed in these dockets.

21 **2. DESCRIPTION OF MODELING ANALYSIS**

22 **Q Please describe your modeling analysis.**

23 **A** It was my responsibility, using the STRATEGIST databases provided by
24 Kentucky Utilities (KU) and Louisville Gas & Electric (LG&E), collectively “the
25 Companies,” to execute modeling runs with revised input assumptions.

1 Prior to executing any modeling runs with changes to the inputs, I executed the
2 runs performed by the Companies presented in these CPCN dockets, in order to
3 verify that STRATEGIST was performing as expected. I was able to exactly
4 reproduce the Companies' results. The "set" of STRATEGIST scenarios
5 performed by the Companies include the following:

- 6 • No Retirements
- 7 • Retire Tyrone 3
- 8 • Retire Tyrone 3 and Green River 3
- 9 • Retire Tyrone 3, Green River 3, and Brown 3
- 10 • Retire Tyrone 3, Green River 3, and Cane Run 4
- 11 • Retire Tyrone 3, Green River 3, Cane Run 4, and Cane Run 6
- 12 • Retire Tyrone 3, Green River 3, Cane Run 4, Cane Run 6, and Brown 1-2
- 13 • Retire Tyrone 3, Green River 3, and Cane Run 4-6
- 14 • Retire Tyrone 3, Green River 3, Cane Run 4-6, and Ghent 3
- 15 • Retire Tyrone 3, Green River 3, Cane Run 4-6, and Ghent 1
- 16 • Retire Tyrone 3, Green River 3-4, and Cane Run 4-6
- 17 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Mill Creek 4
- 18 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Trimble County 1
- 19 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Ghent 4
- 20 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Mill Creek 2
- 21 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Ghent 3
- 22 • Retire Tyrone 3, Green River 3-4, Cane Run 4-6, and Mill Creek 1-2

1 I then constructed three new sets of STRATEGIST runs made up of the scenarios
2 listed above using: 1) a revised gas price; 2) a price for carbon dioxide emissions;
3 and 3) a revised gas price and a price for carbon dioxide emissions. These
4 modified input assumptions were provided to me by Dr. Jeremy Fisher.

5 Dr. Fisher then used the results from my model runs in his retirement analysis.

6 **Q After you performed your modeling analysis, did you subsequently find any**
7 **errors in that analysis?**

8 **A** Yes. I realized that the Companies' gas price inputs to the STRATEGIST model
9 represent an annual maximum price. The Companies applied seasonal price
10 adjustment factors to these annual maximum prices which results in gas prices
11 that vary from month to month. The revised gas price input that I used in my
12 modeling was intended to represent an average annual price. When the
13 Companies seasonal price adjustment factors were applied, the resulting gas price
14 was incorrect. I did not have the opportunity to re-run the STRATEGIST model
15 after discovering this error before filing this direct testimony. However, I intend
16 to re-run the STRATEGIST model for my supplemental testimony because the
17 Companies included new natural gas price estimates in their supplemental
18 discovery filed on September 14, 2011. I will correct this seasonal price error with
19 the model re-runs and in my supplemental testimony, but believe that using a
20 corrected gas price will not substantively change the findings of Dr. Fisher.

21 **Q Does that conclude your testimony at this time?**

22 **A** Yes.