

Exhibit No.: \_\_\_\_\_  
Issues: Cash Working Capital  
Witness: Timothy S. Lyons  
Type of Exhibit: Direct Testimony  
Sponsoring Party: The Empire District  
Gas Company  
Case No.: GR-2021-0320  
Date Testimony Prepared: August 2021

**Before the Public Service Commission  
of the State of Missouri**

**Direct Testimony**

**of**

**Timothy S. Lyons**

**on behalf of**

**The Empire District Gas Company**

**August 2021**



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FOR THE DIRECT TESTIMONY OF TIMOTHY S. LYONS  
THE EMPIRE DISTRICT GAS COMPANY  
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION  
CASE NO. GR-2021-0320

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DIRECT TESTIMONY OF TIMOTHY S. LYONS  
THE EMPIRE DISTRICT GAS COMPANY  
BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION  
CASE NO. GR-2021-0320

1 **I. INTRODUCTION**

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

3 A. My name is Timothy S. Lyons. My business address is 1900 West Park Drive, Suite 250,  
4 Westborough, Massachusetts, 01581.

5 **Q. By whom are you employed and in what capacity?**

6 A. I am a Partner at ScottMadden, Inc. (“ScottMadden”).

7 **Q. On whose behalf are you testifying in this proceeding?**

8 A. I am testifying on behalf of The Empire District Gas Company (“EDG” or “Company”), a  
9 local distribution gas company that is a wholly-owned subsidiary of The Empire District  
10 Electric Company.

11 **Q. Please describe your professional and educational experience.**

12 A. I have more than 30 years of experience in the energy industry. I started my career in 1985  
13 at Boston Gas Company, eventually becoming Director of Rates and Revenue Analysis. In  
14 1993, I moved to Providence Gas Company, eventually becoming Vice President of  
15 Marketing and Regulatory Affairs. Starting in 2001, I held a number of management  
16 consulting positions in the energy industry, first at KEMA and then at Quantec, LLC. In  
17 2005, I became Vice President of Sales and Marketing at Vermont Gas Systems, Inc. before  
18 joining Sussex Economic Advisors, LLC (“Sussex”) in 2013. Sussex was acquired by  
19 ScottMadden in 2016.

1 I hold a bachelor's degree from St. Anselm College, a master's degree in  
2 Economics from The Pennsylvania State University, and a master's degree in Business  
3 Administration from Babson College.

4 **Q. Have you previously testified before the Missouri Public Service Commission**  
5 **(“Commission”) or any other regulatory agency?**

6 A. Yes. My qualifications and testimony experience are included in Direct Schedule TSL-1.

7 **Q. What is the purpose of your Direct Testimony?**

8 A. The purpose of my direct testimony is to sponsor the lead-lag study, which is used to  
9 determine the Company's Cash Working Capital (“CWC”) requirement.

10 **Q. Have you prepared schedules to support this testimony?**

11 A. Yes. Direct Schedule TSL-2 and Direct Schedule TSL-3 summarize the results of the  
12 lead-lag study. The schedules were prepared by me or under my direction.

13 **Q. Please define the term “Cash Working Capital”.**

14 A. The term “cash working capital” refers to the net funds or capital investment required by  
15 the Company to finance goods and services used to provide service to customers from the  
16 time those goods and services are paid for by the Company to the time that payment is  
17 received from customers. Goods and services considered in this lead-lag study include  
18 O&M expenses, including labor and non-labor expenses; federal, state, and local taxes; and  
19 employment taxes.

20 **Q. Please describe the approach used to develop the lead-lag study.**

21 A. The lead-lag study consists of two components: a revenue lag and expense leads.

22 The revenue lag represents the number of days from the time customers receive  
23 service to the time customers pay for their service, *i.e.*, when the funds are available to the

1 Company. The longer the revenue lag, the more cash the Company needs to finance its  
2 day-to-day operations.

3 The expense lead represents the number of days from the time the Company  
4 receives goods and services used to provide service to the time payments are made for  
5 those goods and services, *i.e.*, when the funds are no longer available to the Company. The  
6 longer the expense lead, the less cash the Company needs to fund its day-to-day operations.  
7 Together, the revenue lag and expense leads are used to measure the lead-lag days.

8 The results of the lead-lag study were used to determine the Company's CWC  
9 requirement by applying the lead-lag days to the Company's adjusted test year expenses.  
10 The CWC requirement is included in the Company's rate base.

11 **Q. Please summarize the results of the lead-lag study.**

12 A. The results of the lead-lag study are summarized in **Direct Schedule TSL-2** and show a  
13 CWC requirement of (negative) \$0.8 million.

14 **Q. Do the results of the lead-lag study represent an accurate assessment of the**  
15 **Company's CWC requirement?**

16 A. Yes, the results of the lead-lag study represent an accurate assessment of the Company's  
17 CWC requirement during the test year.

18 The lead-lag study relies in large part on the Commission's decision in The Empire  
19 District Electric Company's most recent rate case proceeding in Case No. ER-2019-0374.<sup>1</sup>  
20 Specifically, the Company used certain expense lead days that were approved by the  
21 Commission in that proceeding.

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<sup>1</sup> Report and Order, issued July 1, 2020 in File No. ER-2019-0374

1           However, EDG developed a revenue lag and certain expense leads for this lead-lag  
2 study to reflect the unique characteristics of the Company's customers, service area and  
3 utility services.

4 **Q. Why did the Company rely in large part on the Commission's decision in The Empire**  
5 **District Electric Company's most recent rate case for expense lead days?**

6 A. The EDG relied on expense lead days approved by the Commission in The Empire District  
7 Electric Company's most recent rate case proceeding Case No. ER-2019-0374 for three  
8 reasons. First, EDG and the Empire District Electric Company share the same payment  
9 processes and systems for many expenses, including employee payroll, benefits, and  
10 payroll taxes. Thus, the lead days associated with those expenses for The Empire District  
11 Electric Company should be generally consistent with the lead days associated with those  
12 expenses for EDG. Second, the Commission's decision in Case No. ER-2019-0374 was  
13 based on a recent comprehensive review, evaluation, and proposed modifications of the  
14 Company's lead-lag study by the parties in that proceeding. Third, there have been no  
15 substantial changes in the Company's payment processes or practices that would result in  
16 a significant change in the lead days.

17 **Q. Please summarize the approach used to develop the lead-lag study.**

18 A. The lead-lag study compares differences between the Company's revenue lag and expense  
19 leads. The revenue lag measures the number of days from the time service is provided to  
20 customers to the time payment is received from customers. The expense lead represents  
21 the number of days from the time the Company receives goods and services used to provide  
22 service to the time payments are made for those goods and services. The lag and leads are

1 measured in days for individual expenses and then converted to “dollar-days” that reflect  
2 a weighting by expense amounts.

3 **II. LEAD-LAG STUDY**

4 **A. Revenue Lag**

5 **Q. How was the revenue lag determined?**

6 A. The revenue lag was based on the number of days from the time service is provided to  
7 customers to the time payment is received from customers. The revenue lag is the sum of  
8 three components: (1) the service lag; (2) the billing lag; and (3) the collection lag.

9 **Q. What is the service lag?**

10 A. The service lag measures the average number of days in the service period; that is, the  
11 number of days between the start and end of the billing month. Meters are read at the end  
12 of the billing month.

13 The service lag in this lead-lag study was based on the midpoint of the service  
14 period.

15 **Q. What is the billing lag?**

16 A. The billing lag measures the number of days from the time meters are read at the end of  
17 the billing period to the time bills are prepared, recorded, and sent to customers. The billing  
18 lag includes time for review and validation of billed usage and dollars.

19 **Q. What is the collection lag?**

20 A. The collection lag measures the number of days from the time bills are recorded and sent  
21 to customers to the time customer payments are received (i.e., funds are available to the  
22 Company). The collection lag in this lead-lag study was based on the Company’s customer  
23 billing data.

1           **B. Expense Lead**

2           **Q.    How were expense lead days determined in this lead-lag study?**

3           A.    Expense lead days in this lead-lag study were based on those approved by the Commission  
4           in Case No. ER-2019-0374, as discussed earlier, except those characteristics unique to the  
5           Company's service area and utility services. Specifically, the Company developed lead  
6           days for the following expenses: purchased gas, cash vouchers and property taxes.

7           **Q.    How were lead days determined for purchased gas expenses?**

8           A.    Lead days for purchased gas expenses were based on the number of days from the midpoint  
9           of the service period to the payment date. Lead days associated with purchased gas,  
10          transportation and storage transactions were measured separately as the number of days  
11          from the midpoint of the service period to the payment date and then dollar-weighted by  
12          payments.

13          **Q.    How were lead days determined for cash vouchers?**

14          A.    Lead days for cash vouchers were based on the sum of two components: (1) lead days from  
15          the service period to the invoice date; and (2) lead days from the invoice date to the  
16          payment date.

17                   Lead days from the service period to the invoice date were based on a stratified  
18                   sample of invoices paid by the Company during the test year. Lead days were measured  
19                   for each invoice in the sample as the number of days from the midpoint of the service  
20                   period to the invoice date. Invoices were then dollar-weighted by invoice amounts to  
21                   determine the lead days.

22                   Lead days from the invoice date to the payment date were based on invoices paid  
23                   by the Company during the test year. Lead days were measured for each invoice as the



1 number of days from the invoice date to the payment date. Invoices were then dollar-  
2 weighted by invoice amounts to determine the lead days.

3 **Q. How were lead days determined for property taxes?**

4 A. Lead days for property taxes were measured as the number of days from the midpoint of  
5 the taxing period to the payment date.

6 **III. CONCLUSION**

7 **Q. Do the results of the lead-lag study represent an accurate assessment of the**  
8 **Company's CWC requirement?**

9 A. Yes, the lead-lag study represents an accurate assessment of the Company's CWC  
10 requirement during the test year for the Company.

11 **Q. Does this complete your direct testimony?**

12 A. Yes.

**VERIFICATION**

I, Timothy S. Lyons, under penalty of perjury, on this 23rd day of August, 2021, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/ Timothy S. Lyons