BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the General Investigation to Fully Investigate the Parameters and Intricacies of a Customer Opt-Out Program for Advanced Metering Infrastructure Digital Electric Meters.	)))))	Docket No. 19-GIME-012-GIE

INITIAL COMMENTS OF
SOUTHERN PIONEER ELECTRIC COMPANY

COMES NOW Southern Pioneer Electric Company ("Southern Pioneer") and pursuant to the State Corporation Commission of the State of Kansas ("Commission") Order Opening General Investigation ("Order") and Order Setting Procedural Schedule ("Procedural Schedule"), hereby files the following initial comments.

I. Background

1. Southern Pioneer is a not-for-profit, taxable Kansas corporation with its principal place of business located in Ulysses, Kansas, and distribution and customer service offices in Liberal and Medicine Lodge, Kansas. Southern Pioneer serves, on average, 17,600 plus retail customers in 34 communities located in all or some ten south central and southwest Kansas counties. Southern Pioneer is a certificated electric public utility regulated by the Commission and is a wholly owned subsidiary of Pioneer Electric Cooperative, Inc., a not-for-profit Kansas member-owned electric cooperative not subject to Commission regulation pursuant to the provisions of K.S.A. § 66-104d.

2. On July 24, 2018, the Commission issued the Order opening this general investigation docket in order to examine the parameters and intricacies of an AMI Opt-out

program.[1] This docket arises out of the multi-year investigation regarding formal complaints filed against Westar Energy, Inc. ("Westar") and Kansas Gas and Electric Co. and Kansas City Power and Light Company ("KCP&L") in Docket No. 15-WSEE-211-COM, et al (collectively, "Complaints Docket"), where nine complainants presented various concerns regarding Westar and KCP&L's use of Advanced Metering Infrastructure (AMI) meters.[2] The Commission determined in the Complaints Docket that the complainants failed to state a claim upon which relief could be granted and dismissed the complaints ("Complaints Order").[3]

3. In the Complaints Docket, there was discussion by Staff on AMI opt-out programs but no specific finding on opt-out programs.[4] Instead, the Commission ordered Staff to open a general investigation to fully investigate AMI opt-out programs.[5]

4. The Order further provides that all Kansas electric public utilities subject to the Commission's jurisdiction over rates and terms of service are made a party to this proceeding and must enter an entry of appearance no later than thirty (30) days from the date of the Order.[6]

5. On September 6, 2018, Southern Pioneer filed its entry of appearance.

6. On October 16, 2018, the Commission issued an order setting the Procedural Schedule to include the submission of initial comments by the parties by no later than November 16, 2018 at 5:00 PM[7].

7. These initial comments are provided in accordance with the Commission's adopted Procedural Schedule.

II. Initial Comments

[1] Order, ¶4.
[2] Id. at
[3] Id. at ¶2.
[4] Id. at ¶3.
[5] Id.
[6] Id. at ¶5.
[7] Order Setting Procedural Schedule, Findings and Conclusions, p. 3 (February 16, 2017)

A. Southern Pioneer is fully deployed with AMI technology.

8. In 2013, after extensive analysis of multiple vendor responses[8] and receiving Board approval in July 2012 (see Exhibit A attached hereto), Southern Pioneer began installing Advanced Metering Infrastructure (AMI) meters, replacing its existing 17,000 plus electromechanical (analog) meters due to the significant utility and customer benefits anticipated to be achieved with AMI. With the exception of four analog meters (equivalent to less than one percent of total installed meters), Southern Pioneer was near-fully deployed with AMI by 2014. The AMI technology utilized is Gridstream by Landis+Gyr.

9. Since deployment of Southern Pioneer's AMI system in 2014, Southern Pioneer and its customers have experienced substantial benefits with the new technology. It has allowed for the collection of detailed kWh usage and demand data on a 15-minute interval basis that supports (i) remote metering reading providing for accurate readings without the human error element and eliminating the majority of labor and administrative costs associated with manual meter readings, including back office and billing and consumer accounting support; (ii) outage alarms upon the occurrence of any outage,[9] and remote disconnects and automated reconnects thus significantly reducing customer outage time; (iii) detailed outage data; (iv) customer education and understanding of hourly usage patterns and how those usage patterns relate to overall energy costs impacting the customer's bill; (v) reduction of theft and diversion; (vi) speedy resolution of high bill complaints supported by customer-specific usage data; (vii) improved load forecasting

[8] Southern Pioneer requested four proposals and received three *confidential* responses from vendors Landis+Gyr's Gridstream, Trilliant and TWACS in a Business Case format that outlined the initial investment, ongoing annual costs, net present value, payback in terms of years and the average cost per meter.

[9] With the old analog metering system, Southern Pioneer would in most cases not be aware of an outage until the customer called in to notify Southern Pioneer Operations or its contracted after-hours or overflow call center. If the customer was gone for an extended period of time, it could be days or weeks before Southern Pioneer would become aware of the outage. With AMI, many times Operations' personnel are aware of an outage before the customer even becomes aware and can quickly move to restore service, regardless of whether the customer is home or away.

and real time data for engineering studies and analysis (e.g. transformer loading data, voltage data); and (viii) future implementation of effective time-of-use and energy efficiency programs, encouraging customers to shift and/or reduce electric usage from peak demand period, thus reducing strain on the electric grid and lowering electric costs for customers. This is not intended to be an exhaustive list as there are many additional benefits Southern Pioneer has experienced. Southern Pioneer's interest and investment of $5,055,697[10] in its AMI system and the technology is significant and demonstrative of its commitment to provide reliable, state-of-the-art electric service to customers.

B. <u>This Commission and public utility commissions and courts across the country have found no health effects or violation of privacy laws due to AMI meters</u>.

10. As it relates to the health effects of radiofrequency (RF) emissions from AMI meters, Staff concluded in its Report and Recommendation in the Complaints Docket that "[c]omplainants provide no evidence of health effects that can be attributed to AMI meters."[11] The Commission subsequently found in its Complaints Order that the complainants could not demonstrate that AMI technology is dangerous to the public generally, finding Staff's analysis of the Federal Communications Commission (FCC) guidelines of importance, including Staff's statement that the RF output of AMI is well below FCC thresholds and that the "shielding effects of the structure, combined with the distance from living areas, reduce the anticipated effect of RF exposure to much lower than that received from cell phones, wireless phones, or microwave ovens." [12]

[10] Of the $5,055,696.84 total AMI investment (meter, routers, collectors, misc. material and labor) cited to implement AMI system-wide, $3,807,045.41 was for single phase meters; $572,386.38 was poly phase meters; $247,017.21 was for routers; and $429,247.84 was for collectors. Individual AMI meter cost at time of initial implementation during 2013-2014 was $192.79 and $231.24 for single and poly phase respectively. This compares to current pricing of $211.25 and $295.65 for single and pol phase respectively. Should be noted that initial AMI Meter prices were suppressed/discounted due to volume purchase and current pricing does not include taxes or shipping and handling.
[11] Complaints Docket, Staff Report and Recommendation, p. 5.
[12] Complaints Order, ¶28.

11. The Commission also noted in the Complaints Order that utility Commissions in other jurisdictions have vetted the issue and have found AMI to be safe, affirmed by the highest court in that jurisdiction (*see* Friedman v. Public Utilities Comm'n, 2016 ME 19, 132 A.3d 183 (2016)).[13]

12. Southern Pioneer agrees with this Commission finding. Southern Pioneer's AMI meters, fully utilizing all of the AMI meter's features, emit RF signals for less than one minute in a 24-hour period. For more than 23 hours and 59 minutes, the meters emit zero RFs.

13. As it relates to privacy concerns, Staff concluded in its R&R in the Complaints Docket that it "does not consider installation of an AMI meter to be an invasion of customer privacy."[14] This has also been affirmed by the courts in other jurisdictions.[15] Southern Pioneer agrees with this conclusion. Southern Pioneer's AMI meters only record the customer's overall energy usage – it does not collect any other customer specific data and the energy usage data is solely used for the purpose of Southern Pioneer providing reliable electric service to the customer. Such data is kept confidential and is not released to any third parties pursuant to Southern Pioneer's Commission-approved Rules and Regulations and other confidentiality policies and requirements.

C. <u>The Commission should not allow customers to opt-out of AMI technology</u>.

14. Because the customer complaints regarding adverse health effects and privacy concerns associated with AMI meters are unfounded, Southern Pioneer agrees with Staff's position in its Report and Recommendation in the Complaint Dockets, recommending that the Commission should not allow customers to opt-out of the installation of AMI digital meters.[16] Southern Pioneer

[13] Id. at ¶29.
[14] Complaints Docket, Staff R&R, p. 6.
[15] *See* <u>Naperville Smart Meter Awareness v. City of Naperville</u>, No. 16-3766, 2018 U.S. App. (7th Cir. Aug. 16, 2018).
[16] Complaints Docket, Staff R&R, p. 1.

strongly advocates for this in the case where the utility has already invested in excess of $5 million in and deployed AMI throughout its certificated 10-county service area as its standard metering system.

15. Southern Pioneer currently has four (4) residential customers on its system that elected to retain their analog meters when installation of AMI was initially taking place. While this is a minimal number of customers, a Commission Order setting the policy allowing customers to subsequently opt-out of Southern Pioneer's AMI system already fully deployed could result in many more customers subsequently choosing to opt-out, especially with the wave of opposition groups across the country distributing inaccurate and baseless information on AMI meters in an effort to delay or obstruct a utility's AMI meter deployment. This would result in not only a significant operational disruption and increase in inefficiencies and costs, but it would also result in a loss of the significant customer benefits and optimization of technology that has allowed Southern Pioneer to move towards modernization of the electric grid. AMI technology has allowed Southern Pioneer to reduce operating costs, ultimately provide cheaper power to its customers, increased electric grid stability and encourage energy efficiency.

D. <u>Response to Staff's recommended parameters for review of an opt-out program</u>.

16. The Commission's Order notes and incorporates by reference Staff's Report and Recommendation regarding this general investigation, whereby Staff recommends a review of the following four parameters in considering an opt-out program:

a. The types of meters that would be preferred in a meter opt-out program;

b. The installation costs associated with each meter type and/or billing strategy;

c. The operating costs associated with each meter type and/or billing strategy; and

d. The effects of economy of scale on the costs of an opt-out program.

(a) The Types of Meters that would be Preferred in a Meter Opt-Out Program

17. If the Commission determines that an opt-out program is required, Southern Pioneer submits that the program should be limited to residential customers, and utilities should be allowed the flexibility to determine on a utility-by-utility basis those meters that would be the best fit for the specific utility's opt-out program (analog, AMI digital meters with limited or no radio communications, etc.).

18. Southern Pioneer disagrees with an opt-out program requiring only the use of analog meters. Reverting back to analog meters would be difficult, if not impossible to accomplish for Southern Pioneer for several reasons. Analog meters are archaic and due to their mechanical nature, are unreliable, degrade over time compared to digital, and as such, they have almost become obsolete and limited-availability on the market. Except for those analog meters the four Southern Pioneer residential customers elected to retain at the time of AMI installation, Southern Pioneer has disposed of all of the old analog meters that were in inventory. Southern Pioneer has researched various meter vendors and has determined it could purchase "refurbished" (*with emphasis*) analog meters at a cost of approximately $18.00 per meter. It should be noted, that while refurbished and tested prior to leaving the vendor's distribution center, these analog meters are second hand and subject to the same degradation and eventual failures as the very analog meters replaced system-wide. While these archaic analog meters are readily available now refurbished, Southern Pioneer's research has revealed no major meter manufacturer makes or sells a mechanical meter anymore. To offer an opt-out program with analog meters, the utility is relying on a finite resource and it is safe to assume, over time, for prices of these analog meters to go up until such time they are no longer available or supported. Further, with the change-out of analog to AMI meters, Southern Pioneer has no current ability to test analog meters; therefore, analog meters

would have to be shipped off to the manufacturer for testing at an additional cost. The same vendor that would sell refurbished meters has advised that the total cost to test and ship roundtrip would be approximately $19.20 ($9.20 for testing and $10.00 in shipping), which exceeds the cost to purchase a refurbished meter. The bottom line is, Southern Pioneer would lose all of the value it is currently invested in and receiving with its AMI system, as well as efficiencies and economies of scale and be burdened with the challenge of locating a vendor in which to purchase and to test analog meters.

19. If an opt-out program is determined required by the Commission, the best option for Southern Pioneer would be to allow the existing customers, who initially requested to retain their analog meters at the time of AMI installation, to retain those analog meters ("Grandfathered Customers"), until such time the analog meter is defective after which time the customer would convert to an available option provided by Southern Pioneer. Any customers with existing AMI meters ("AMI Customers") desiring to opt-out going forward be allowed to choose from two options, both of which would allow Southern Pioneer to retain its existing AMI infrastructure. These options are as follows:

> a. AMI Digital Meter with **Limited** 2-Way RF Communications/Data Collection ("AMI Radio Limited") – Under this option, fifteen-minute data intervals are disabled and data is only collected once per day[17] in a 24-hour period. All alarms (e.g. outage) are disabled. Endpoint (the RF Communication module) is made a non-preferred node, which will discourage other endpoints from using it as a hop. Firmware broadcasts are disabled in the endpoint. Even though meter data collected is reduced to once per day, and other benefits of AMI are lost due to the limited access, Southern Pioneer still has the ability to only remotely access to collect readings for billing and for connect and disconnect purposes.
>
> b. AMI Digital Meter with **No** 2- Way RF Communications/Data Collection ("AMI Radio Off")– All two-way RF communications are fully disabled with no data collection or alarm capability. Manual meter reads and inputs and disconnects/reconnects are required. The AMI meter would be equivalent to an analog meter, but yet readily serviceable and available, etc.

[17] Absent fully disabling the AMI meter, this is the least number of data intervals the AMI meter can be programmed to capture.

(b) The Installation Costs Associated with each Meter Type.

20. Southern Pioneer would not incur any installation costs if it implemented an Opt-Out Program that allowed it to retain its existing AMI infrastructure as described above due to the AMI metering installed and grandfathering of four existing analog meters.

21. If Southern Pioneer implemented an opt-out program requiring it to replace its existing AMI meters with analog meters, it would incur change-out installation costs, both capital and labor. Since Southern Pioneer is fully deployed with AMI metering, replacing its AMI meters with analog meters would come at a replacement capital cost of approximately $18.00/meter.

22. There would also be labor, to include overheads, and fleet costs associated with the change-out and installation of analog meters. Southern Pioneer's 2018 year-to-date average labor/overhead and fleet costs[18] are as follows:

Lineman Hourly Rate/Overhead	$60.34/hour
Consumer Accounting Hourly Rate/Overhead	$34.88/hour
Average Fleet Cost	$1.88/mile

23. Southern Pioneer has a diverse and remote service territory, serving 17,600 customers covering 10-counties, and in some rural areas, the total cost to roll a truck is relatively significant. Roundtrip truck rolls from a customer service-distribution center in Southern Pioneer's service area ranges from a low of approximately 5 miles in urban areas close to service centers to a high of 150 miles[19] in the most extreme rural areas. Based on these demographics and

[18] The 2018 year-to-date labor/overhead and fleet costs referenced herein are equivalent to costs listed in Southern Pioneer's Bi-Annual Compliance Filing (¶16, page 9) dated October 30, 2018 and used to estimate cost savings attributable to the Commission-approved pilot program in Docket 15-GIMX-344-GIV.

[19] The distance from the Southern Pioneer Liberal, KS Customer Service-Distribution Center to Englewood, KS is 75 miles one-way, thus 150 miles roundtrip and from the Medicine Lodge Customer Service-Distribution Center to Coldwater or Greensburg, KS is 43 and 60 miles respectively one-way or 86 and 120 miles roundtrip respectively.

using this costing information, the total average installation cost per meter to implement an opt-out program requiring the use of analog meters would be $41.14 per meter for urban areas and $184.77 per meter for rural areas. While it is difficult to predict which customers, urban versus rural, and the volume that might opt-out, using a reasonable 3% opt-out rate or 528 of Southern Pioneer's total 17,600 installed meters and equally dividing between urban and rural areas, this would equate to a one-time total installation cost of $ 10,860.96 for urban meter changes and $48,778.40 for rural meter changes for a combined one-time cost of $59,639.36 (see Exhibit B attached hereto).[20]

This combined cost of just over $59,639 to install does not include the capital cost to purchase the analog meter. If one uses the $18.00 per meter cost quoted by Southern Pioneer's meter vender, then multiplies times the 528 meters opting out, this equates to an additional $9,504.

(c) The Operating Costs Associated with each Meter Type and/or Billing Strategy.

24. Southern Pioneer would not incur any additional monthly or annual operating costs if it provided an AMI Customer with option (a) (AMI Radio Limited) under an opt-out program. Southern Pioneer would still be able to remotely collect data once per day for meter reads and billing, automatically import data into customer billing database and could ping the meter in order to disconnect or reconnect a customer. However, the customer would not have available all of the other benefits that come with a fully operational AMI meter, including an alarm to Southern Pioneer operations providing notification of and information on an outage or the ability to review usage patterns to investigate high bills, etc.

25. Southern Pioneer would incur additional costs if it provided Grandfathered Customers the option to continue to keep their existing analog meter, AMI Customers with option

[20] Southern Pioneer understands that opt-out rates may vary from state to state and utility to utility, but believes a 3% opt-out rate is a reasonable rate for Southern Pioneer.

(b) (AMI Radio Off), or if it were required to provide only analog meters under an opt-out program. These additional costs would essentially be the same because AMI Radio Off would render it equivalent to an analog meter. Southern Pioneer has completed an analysis of the costs that it would incur to provide AMI Radio Off or an analog equivalent meter. The additional costs associated with implementing these options under an opt-out program are categorized as follows:

- Manual meter reads
- Manual disconnects/reconnects
- Back office support and communications
- Billing and customer service support

26. Utilizing Southern Pioneer's 2018 year-to-date average labor/overhead and fleet costs provided above, the total all-in additional average annual operating cost per meter to implement an opt-out program utilizing analog meters or AMI meters with no RF communications/data capability would be $41.14 monthly or $493.68 annually per meter for urban areas and $184.77 monthly or $2,217.20 annually per meter for rural areas. Using the same reasonable 3% opt-out rate, and assuming the 528 meters were equally spread between urban and rural areas without regard to which of the 21 meter reading/8 billing cycles they may be assigned to, this would equate to a total additional annual cost of $715,672.32.

27. Further, an opt-out program utilizing analog meters would result in additional third party testing costs that would be incurred by Southern Pioneer. This would come at a cost of $19.20[21] per meter. Using a 3% opt-out rate, to test the 528 meters would equate to a total additional system cost of $10,137.60 at least every 5-years[22].

[21] Meter vendor has quoted $9.20 to test and $10.00 for shipping and handling.

[22] ANSI has no set standard for testing frequency, just that we test our meters as frequently as we deem necessary based upon the type and reliability of these meters. Due to the fact that these would be previously used, refurbished electromechanical meters, that are known to slow down over time, it is recommend testing these analog meters at least

(d) The Effects of Economy of Scale on the Costs of an Opt-Out Program.

28. In 2011, based upon RFP responses from three of four vendors solicited,[23] Southern Pioneer put together a comprehensive business case showing a strong return on investment, thus justifying its pursuit of deploying AMI meters (See Exhibit A). This business case was based in large part on the savings that were anticipated to be achieved through O&M, billing, customer service and revenue protection savings (e.g. reduction of meter reading costs, improved billing accuracy, reduction in meter theft and tampering costs), in addition to greater efficiencies and economies of scale with regard to meter reading, handling of service orders, outage management, enhanced customer service and quicker resolution of billing issues. Additionally, Southern Pioneer projected that there would be benefits realized from the ability to implement demand response and energy efficiency initiatives and time-of-use rate structures, all resulting in lowered capacity and energy costs for Southern Pioneer customers. These lowered costs and significant customer benefits have in fact been recognized by Southern Pioneer over the past four years with its deployment of AMI meters across its system.

29. Southern Pioneer is concerned about the extent to which the decision of a small group of customers to opt-out from AMI will reduce the customer benefits to the public as a whole and eliminate these efficiencies and economies of scale, thus increasing the costs of its AMI program and diminishing the overall value of the program that Southern Pioneer originally communicated to its stakeholders.

E. <u>Opt-Out Program Costs should be Recovered from Program Participants</u>.

every 5-years.

[23] Southern Pioneer requested four proposals and received three *confidential* responses from vendors Landis+Gyr's Gridstream, Trilliant and TWACS in a Business Case format that outlined the initial investment, ongoing annual costs, net present value, payback in terms of years and the average cost per meter.

30. In light of the magnitude of costs to offer an opt-out program with an analog feature, Southern Pioneer strongly agrees with Staff's recommendation in the Complaints Docket that the costs of any opt-out program should be recovered from those customers participating in the program.[24] The standard for metering in Southern Pioneer's territory is now a Board-approved wireless AMI meter. Requiring Southern Pioneer to provide an option that deviates from this standard will require the company to incur additional costs, lose valuable efficiencies and economies of scale.

31. Prudently incurred costs associated with providing a specific opt-out option should be borne by the cost-causers and not all Southern Pioneer customers by way of an initial installation fee (if applicable) and then thereafter, monthly service trip charges based upon the weighted average cost to manually read individual meters and conduct individual disconnects/reconnects. Southern Pioneer would propose, due to its 10-county service area, a trip charge specific to rural areas and a trip charge specific to urban areas. The charges would apply on a meter-by-meter basis, regardless of the number of meters at the premise.

WHEREFORE, Southern Pioneer respectfully requests the Commission consider Southern Pioneer's comments regarding the undesirable consequences of allowing for an AMI Opt-Out Program; but alternatively, should the Commission require an opt-out program, Southern Pioneer requests the Commission limit it to residential customers and allow utilities to (i) determine on an individual basis those meters that best fit the specific utility's opt-out program, and in no event should an opt-out program require a utility to replace an existing AMI meter with an analog meter; and (ii) recover the prudently incurred costs of an opt-out program from participating customers by way of an installation charge (if applicable) and monthly service charges.

[24] *See* Staff R&R, p. 2.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I do hereby certify that on the 16th day of November, 2018, a true and correct copy of the above and foregoing Comments was electronically served to the following parties:

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Pioneer Electric Board of Trustee Report

July 25, 2012

pioneer electric cooperative, inc.

A Touchstone Energy® Cooperative

Matters Requiring Board Action

Benefits of an AMI System

Remote meter reading

- Accuracy, no re-reads
- Reduced trips to the field to perform routine reads for ins and outs
- Eliminate contract meter reading costs

Real time continuous data

- Allow for loss calculations by syncing up our usage to the usage of our customers

Outage Reporting

- Automatic notification of outages into the system, we know before the customer does
- Allow for restoration during business hours instead of after hours when the customer gets home

Remote connect/disconnect capability

- The option to install meters capable of remote connect/disconnect
- Eliminates extra trips to the field to connect or disconnect
- Used an estimated $20 avoided cost to analyze savings

Preparing our system for the future

- Demand Response
- Time of Use Rates
- Load Control
- Customer access to their information

Southern Pioneer Exhibit A

System-Wide Cost Comparison

Company	System	Initial Investment	Annual Cost	NPV	Simple Payback in Years	Avg. Cost per Meter
SPECO	TWACS	$5,750,877	$45,650	-$375,572	11.29	$339.59
PEC	TWACS	$6,874,956	$36,050	-$1,407,315	14.7	$417.88
SPECO	Trilliant	$7,095,274	$36,669	-$1,129,748	13.38	$418.97
PEC	Trilliant	$6,366,055	$21,210	-$436,728	13.2	$386.95
SPECO	Tantalus	Not Submitted				
PEC	Tantalus	Not Submitted				
SPECO	Gridstream	$4,273,946	$56,390	$472,768	8.73	$252.37
PEC	Gridstream	$5,571,407	$34,568	$142,213	11.88	$338.65

AMI Implementation

- SPEC 2012 budget $2,775,000
- **SPEC Proposed 2013 $1,300,000**
- SPEC Proposed 2014 $1,300,000
- **PEC Proposed 2013 $2,900,000**
- PEC Proposed 2014 $2,900,000

Southern Pioneer Exhibit B

		A	B	C	D	E	F	G		H	I	J	K
		AMI Meters Opting Out	**Consumer Accounting**		**Lineman**		**Average Fleet Costs per Mile**			**Individual Cost Per Meter Per Month**	**Individual Cost Per Meter Annually**	**Total Additional Cost Per Month[1]**	**Total Additional Cost Per Year[2]**
			Total Minutes	Rate (Hourly + Overhead)	Total Minutes	(Hourly + Overhead)	Roundtrip Miles						
1	**Inputs**	3%		$ 34.88		$ 60.34		$ 1.88					
				(C1/60) x B2		(E1/60) x D2		(F2 x G1)		(C2+E2+G2)	(H2 x 12 Mos.)	(I2 x A2)	(J2 x 12 Mos.)
2	**Urban Area**	264	20	$ 11.63	20	$ 20.11	5	$ 9.40		$ 41.14	$ 493.68	$ 10,860.96	$ 130,331.52
				(C1/60) x B3		(E1/60) x D3		(F3 x G1)		(C3+E3+G3)	(H3 x 12 Mos.)	(I3 x A3)	(J3 x 12 Mos.)
3	**Rural Area**	264	20	$ 11.63	60	$ 60.34	60	$ 112.80		$ 184.77	$ 2,217.20	$ 48,778.40	$ 585,340.80
	Totals	528										$ 59,639.36	$ 715,672.32

[1] Total Additional Costs Per Month - represents the cost (excluding the meter) to install analog meter and back office support/processing.

[2] Total Additional Cost Per Year - represents 12-months of cost to dispatch, manually read and bill for all analog equivalent meters.