

COMMONWEALTH OF KENTUCKY

**BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION**

**The Electronic Application of Duke Energy)
Kentucky, Inc., for: 1) An Adjustment of the)
Electric Rates; 2) Approval of New Tariffs; 3))
Approval of Accounting Practices to Establish)
Regulatory Assets and Liabilities; and 4) All)
Other Required Approvals and Relief.)**

Case No. 2019-00271

Direct Testimony of Justin D. Bieber

on behalf of

The Kroger Co.

December 13, 2019

1 **DIRECT TESTIMONY OF JUSTIN D. BIEBER**

2

3 **Introduction**

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

5 A. My name is Justin Bieber. My business address is 215 South State Street,
6 Suite 200, Salt Lake City, Utah, 84111.

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

8 A. I am a Senior Consultant for Energy Strategies, LLC. Energy Strategies is
9 a private consulting firm specializing in economic and policy analysis applicable to
10 energy production, transportation, and consumption.

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

12 A. My testimony is being sponsored by The Kroger Co. (Kroger). Kroger is
13 one of the largest retail grocers in the United States, and has more than 50 accounts
14 that are served by Duke Energy Kentucky, Inc. (“Company”). Combined, Kroger
15 facilities purchase more than 50 million kWh annually from Duke Energy
16 Kentucky.

17 **Q. Please describe your professional experience and qualifications.**

18 A. My academic background is in engineering and business. I earned a
19 Bachelor of Science in Mechanical Engineering from Duke University in 2006 and
20 a Master of Business Administration from the University of Southern California in
21 2012. I am also a registered Professional Civil Engineer in the state of California.

22 I joined Energy Strategies in 2017, where I provide regulatory and technical
23 support on a variety of energy issues, including regulatory services, transmission

1 and renewable development, and financial and economic analyses. During the time
2 I have worked at Energy Strategies, I have filed and supported the development of
3 testimony before various different state utility regulatory commissions.

4 Prior to joining Energy Strategies, I held positions at Pacific Gas and
5 Electric Company as Manager of Transmission Project Development, ISO
6 Relations and FERC Policy Principal, and Supervisor of Electric Generator
7 Interconnections. During my career at Pacific Gas and Electric Company, I
8 supported multiple facets of utility operations, and led efforts in policy, regulatory,
9 and strategic initiatives, including supporting the development of testimony before
10 and submittal of comments to the FERC, California ISO, and the California Public
11 Utility Commission.

12 **Q. Have you testified previously before this Commission?**

13 **A.** Yes, I testified in Duke Energy Kentucky's 2017 general base rate case,
14 Case No. 2017-00321, as well as the Kentucky Utilities Company and Louisville
15 Gas and Electric Company 2018 general base rate cases, Case Nos. 2018-00294
16 and 2018-00295 respectively.

17 **Q. Have you filed testimony previously before any other state utility regulatory**
18 **commissions?**

19 **A.** Yes. I have testified before the Colorado Public Utilities Commission, the
20 Indiana Utility Regulatory Commission, the Michigan Public Service Commission,
21 the Montana Public Service Commission, the North Carolina Utilities Commission,
22 the Public Utilities Commission of Ohio, the Public Utility Commission of Oregon,

1 the Utah Public Service Commission, and the Public Service Commission of
2 Wisconsin.

3
4 **Overview and Conclusions**

5 **Q. What is the purpose of your testimony in this proceeding?**

6 A. My testimony addresses the Company's proposed cost of service
7 allocation methodologies and revenue allocation among rate schedules.

8 **Q. Please summarize your recommendations to the Commission.**

9 A. I recommend that the Commission approve the Company's recommended
10 Class Cost of Service Study ("CCOSS") which utilizes a 12 coincident peak ("12
11 CP") methodology to allocate production costs. This method would be
12 appropriate in this case because Duke Energy Kentucky's monthly system peaks
13 lie within a narrow range and it would be consistent with the methodology
14 approved in Duke Energy Kentucky's prior general rate case.

15 I am not recommending any changes to the Company's proposed revenue
16 allocation between rate schedules at the proposed revenue requirement. However,
17 to the extent that the Commission approves a revenue increase for Duke Energy
18 Kentucky that is less than Duke Energy Kentucky's proposed increase, then I
19 recommend that the Commission take advantage of the opportunity to improve the
20 alignment between revenue responsibility and cost causation while still reducing
21 the requested rate increase for *all* rate classes.

1 **Class Cost of Service Allocation Methodologies**

2 **Q. Please describe the cost of service studies prepared by Duke Energy Kentucky**
3 **in this case?**

4 A. According to Duke Energy Kentucky witness James Ziolkowski, the
5 Company prepared three separate CCOSS that use similar data, but differ in the
6 cost allocation methodologies that are used to allocate production-related costs.
7 The three different allocation methodologies are: (1) the 12 CP method; (2) the
8 Average and Excess (A&E) method; and (3) the Production Stacking method.¹

9 The 12 CP method allocates production costs based on the class
10 contribution to the 12 monthly system peaks. Each class is allocated costs based
11 on the average of its load during each of the 12 monthly system peaks. This method
12 is generally used when the monthly peaks lie within a narrow range.

13 The A&E method is an energy weighted method that allocates production
14 costs based on a weighted average of a demand and an energy allocator. The
15 demand allocator is based on the *excess* peak demand for a given rate class, where
16 the *excess* demand is the difference between the peak demand and the average
17 demand. The average demand is equal to the annual energy usage for each class
18 divided by the number of hours in a year. The A&E allocation factor for each class
19 is determined to be the weighted average of the excess demand allocator and the
20 average demand, or energy, allocator. The weighting for the energy allocator is
21 typically equal to the system load factor, while the weighting for the demand
22 allocator is equal to one minus the system load factor.

¹ Direct Testimony of James E. Ziolkowski, pp. 4-5.

1 The Production Stacking method allocates baseload plant costs using an
2 energy allocator and peaker plant costs based on peak demands. Mr. Ziolkowski
3 explains that for Duke Energy Kentucky's CCOSS that was developed using the
4 Production Stacking method, the net plant for the East Bend coal plant is allocated
5 to each rate class based on annual energy usage, while the net plant for the
6 Woodsdale facility is allocated to each rate class based on the 12 CP allocator.²

7 **Q. Which Class Cost of Service Study does Mr. Ziolkowski recommend should be**
8 **approved by the Commission in this proceeding?**

9 A. Mr. Ziolkowski recommends that the Commission approve Duke Energy
10 Kentucky's CCOSS that uses the 12 CP methodology for three reasons. First, the
11 12 CP method is a generally accepted method in the industry and was approved by
12 the Commission in Duke Energy Kentucky's last electric base rate case. Second,
13 this methodology recognizes that Duke Energy Kentucky's generating facilities are
14 in place to meet the monthly maximum demands of its customers. Finally, Mr.
15 Ziolkowski states that there is not a compelling reason to adopt a new methodology.
16 He explains that rate subsidies will generally occur among customer classes,
17 regardless of the CCOSS methodologies that is used, and that changing to the A&E
18 or Production Stacking method will not change this fact.³

19 **Q. What is your assessment of the proposed 12 CP production cost allocation**
20 **methodology in this case?**

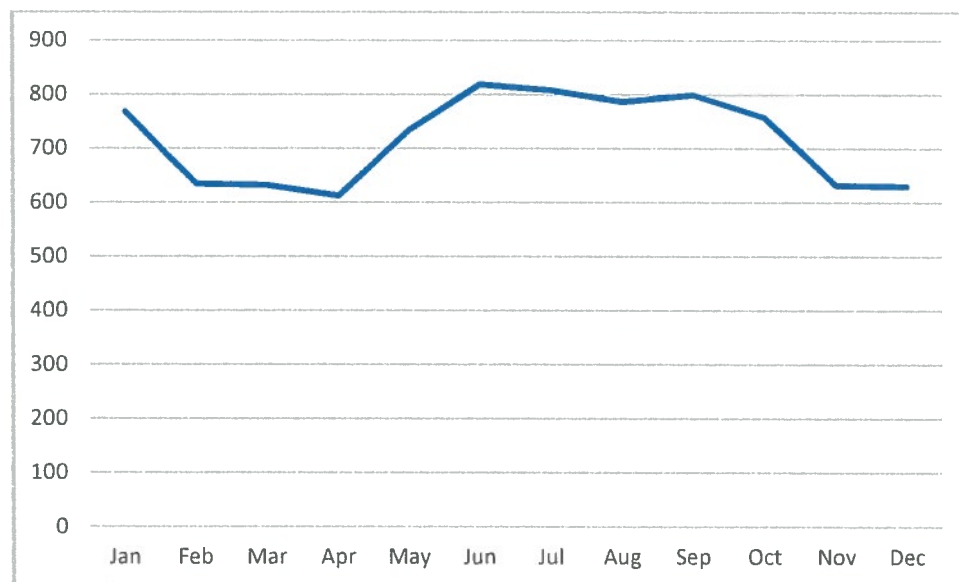
21 A. I agree that it would be reasonable to utilize the 12 CP method to allocate
22 production plant in this case. I have examined the monthly system peaks for Duke

² Id, p. 6.

³ Id, p. 6.

1 Energy Kentucky's system and the peaks generally fall within a narrow range.
2 Figure JDB-1 below provides an illustration of Duke Energy Kentucky's monthly
3 system peaks based on the monthly system peaks for the twelve months ending
4 December 31, 2018, utilized in Duke Energy Kentucky's CCOSS. Given the
5 Commission's approval of the 12 CP method in Duke Energy Kentucky's prior
6 general rate case, and the nature of Duke Energy Kentucky's system peaks, I
7 recommend that the Commission approve Duke Energy Kentucky's proposed
8 CCOSS utilizing a 12 CP production cost allocation methodology in this case.

9 **Figure JDB-1**
10 **Duke Energy Kentucky 2018 Monthly System Peaks**
11



12
13
14 **Q. What is your assessment of the proposed A&E production cost allocation**
15 **methodology?**

16 A. I believe that the A&E production cost allocation method is a robust
17 methodology that could also be used to allocate Duke Energy Kentucky's
18 production plant in this case. The A&E method gives consideration to Duke Energy
19 Kentucky's energy loads by allocating a considerable portion of production plant

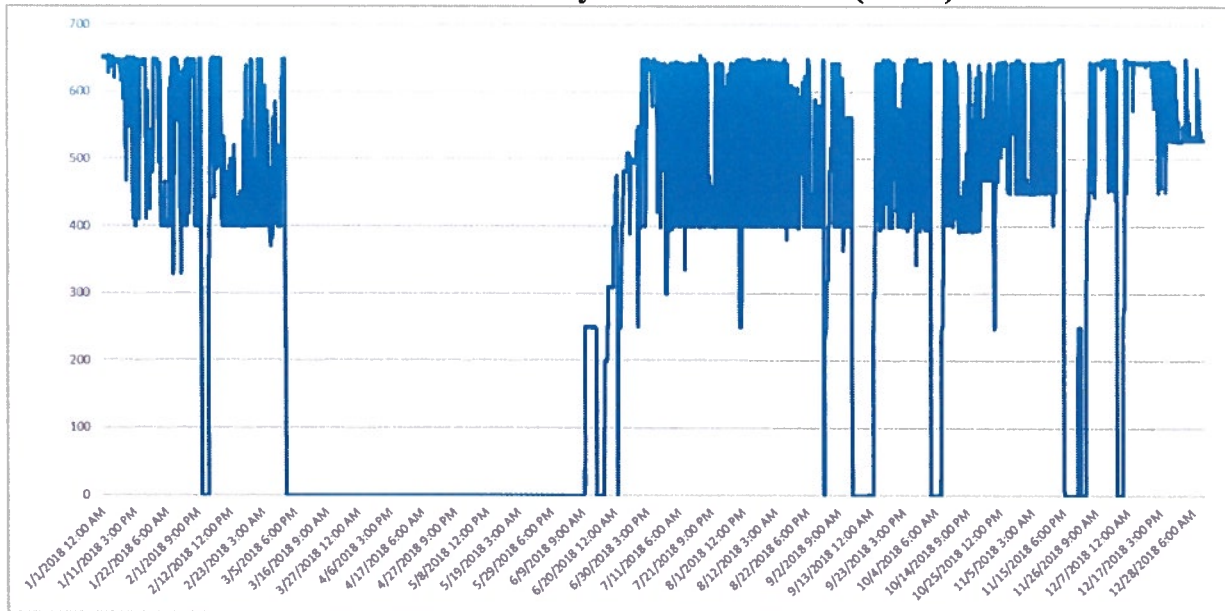
1 based on energy usage, but also avoids some of the analytical shortfalls associated
2 with some other energy weighting methods. While I am not recommending that
3 the Commission replace the 12 CP method with the A&E method in this case, to
4 the extent that the Commission determines that a change to the production cost
5 allocation methodology is warranted, then I recommend that the Commission
6 consider the A&E methodology.

7 **Q. What is your assessment of the proposed Production Stacking cost allocation**
8 **methodology in this case?**

9 A. I recommend against the use of the Production Stacking methodology in
10 this case. Specifically, I do not believe it is appropriate to allocate the East Bend
11 production plant based entirely on energy usage.

12 Based on Duke Energy Kentucky's FERC Form 1 data, the capacity factor
13 for East Bend was just 51.8% in 2018. While this low capacity factor was due in
14 part to plant outages, as can be seen in Figure JDB-2 below, which illustrates the
15 2018 hourly generation for East Bend, the generation output varies considerably on
16 a daily basis. In fact, the daily gross generation output varied by more than 200
17 MW during 121 days in 2018, about one third of the total days in the year. And,
18 the daily gross generation output varied by more than 100 MW on 189 days in 2018,
19 or more than half of the days in the year.

1 **Figure JDB-2**
2 **East Bend 2018 Hourly Gross Generation (MWh)**



3
4 Source: S&P Global Market Intelligence; SNL Energy Data

5 I do not believe that the Production Stacking method, which would allocate
6 100% of the East Bend costs based on energy usage, is appropriate in this case. The
7 East Bend plant is dispatched in a manner that is very different than a baseload
8 plant. Its capacity factor is only 51.8% and there is significant variation in the daily
9 operations and generation output of the plant. Further, this proposed allocation
10 method would not recognize the fact that East Bend provides a significant capacity
11 contribution to help Duke Energy Kentucky meet its customer load obligations.

12
13 **Revenue Allocation Between Rate Schedules**

14 **Q. How does Duke Energy Kentucky allocate its proposed revenues among rate**
15 **schedules?**

16 A. According to Mr. Ziolkowski, the CCOSS revealed that there are significant
17 differences among the rate classes when comparing the actual return earned by each

1 rate class to the overall system rate of return being requested in this case. This
2 would require much greater increases for some rate classes, in terms of the
3 percentage increase, than other classes in order to match class revenue
4 responsibility with the underlying cost causation. In order to mitigate the rate shock
5 that might occur from completely eliminating the interclass subsidies, Duke Energy
6 Kentucky is proposing a two-step process to distribute the revenue allocation
7 between rate classes. The first step eliminates 5% of the current subsidy/excess
8 revenues between rate classes. The second step allocates Duke Energy Kentucky's
9 proposed rate increase to customer classes based on the original cost depreciated
10 rate base.⁴

11 **Q. What is your assessment of Duke Energy Kentucky's proposed revenue**
12 **allocation?**

13 A. I generally believe that there should be a balance between aligning rates
14 with the underlying cost causation and mitigating the potential for rate shock to
15 certain rate classes through a gradual reduction of subsidies. However, Duke
16 Energy Kentucky's proposal to eliminate just 5% of the existing subsidies in this
17 case would constitute only half of the 10% subsidy reduction that the Commission
18 approved in Duke Energy Kentucky's prior general rate case. At this rate, it would
19 take 15 rate cases to reduce just *half* of the existing subsidies, which is likely to
20 take 30 years or more, assuming at least 2 years between rate cases.

21 While the proposed 5% reduction in subsidies proposed by Duke Energy
22 Kentucky represents movement in the right direction, it does not make reasonable

⁴ Id, p. 25.

1 progress towards reducing the disparities between rate classes and aligning rates
2 with cost causation. The misalignment between revenue responsibility and cost
3 causation results in less efficient price signals and a fundamental inequity between
4 subsidy paying and subsidy receiving rate classes. Given the circumstances of this
5 case, I am not recommending any changes to the revenue allocation at Duke Energy
6 Kentucky's *proposed revenue requirement*. However, to the extent that the
7 Commission approves a revenue increase for Duke Energy Kentucky that is less
8 than Duke Energy Kentucky's proposed increase, then I recommend that the
9 Commission take advantage of the opportunity to improve the alignment between
10 revenue responsibility and cost causation while still reducing the requested rate
11 increase for *all* rate classes.

12 **Q. If the Commission approves a rate increase that is less than the increase**
13 **proposed by Duke Energy Kentucky, please explain how the proposed revenue**
14 **allocation could be adjusted to improve the alignment between cost causation**
15 **and rates, while still reducing the requested rate increase for every rate class?**

16 A. I recommend that any reduction to Duke Energy Kentucky's proposed *rate*
17 *increase* should be allocated using a two-step process. In the first step, 50% of the
18 reduction to the proposed rate increase should be used to reduce the revenue targets
19 for *all* rate classes. This reduction should be allocated on a pro rata basis based on
20 the original cost depreciated rate base for each class, consistent with Duke Energy
21 Kentucky's proposed method for allocating its proposed revenue increase in this
22 case. In this step, the larger rate classes will receive a proportionally larger share
23 of the benefit.

1 For the second step, I recommend that the remaining 50% of the reduction
2 to Duke Energy Kentucky's proposed rate increase should be used to reduce
3 interclass subsidies. This amount should be allocated to the subsidy-paying classes
4 on a pro rata basis in proportion to the amount of the subsidy each class is currently
5 paying in its present rates. I also recommend that no class should receive a rate
6 decrease. To the extent that this two-step process would result in a rate decrease
7 for any class, then I recommend that rate class should receive a zero increase, and
8 the remaining benefit should be allocated to *all* rate classes on a pro rata basis in
9 the same manner as the first step allocation.

10 **Q. Can you provide an example that demonstrates how the rate increase could be**
11 **allocated to the different rate classes if the Commission approves a rate**
12 **increase that is less than Duke Energy Kentucky's request?**

13 A. Yes, I have prepared an example to show how the proposed rate increase
14 could be reallocated if the Commission approves a rate increase that is \$10 million
15 less than Duke Energy Kentucky's proposed rate increase. To be clear, I am not
16 recommending that \$10 million is the appropriate adjustment to Duke Energy
17 Kentucky's proposed revenue requirement. However, this example is intended to
18 demonstrate how my recommendation can be applied for a rate increase that is less
19 than Duke Energy Kentucky's proposed increase in this case. Table JDB-1
20 summarizes the results of my recommended methodology for adjusting the rate
21 increase between rate classes at a revenue requirement that is \$10 million less than
22 Duke Energy Kentucky's proposed request. The derivation of the adjusted revenue
23 allocation is provided in Exhibit JDB-1.

As can be seen in this example, every rate class would receive a rate increase that is less than Duke Energy Kentucky's proposed rate increase, even those rate classes that are currently receiving large interclass subsidies. This is due to the fact that 50% of the reduction is allocated to all rate classes. The remaining 50% of the reduction creates some gradual movement towards aligning rates with cost causation, while at the same time mitigating the potential rate impacts for the other classes.

Table JDB-1
Example Revenue Allocation Adjustment at a \$10 Million Rate Reduction
Relative to Duke Energy Kentucky's Filed Case

Rate Class	Existing Interclass Subsidy Paid/(Received)	DEK Proposed Increase		Rate Reduction Relative to Filed Case	Increase at Reduced Revenue Requirement	
		\$	%		\$	%
Rate RS	(\$17,225,351)	\$23,433,302	18.82%	(\$2,473,698)	\$20,959,605	16.92%
Rate DS	\$11,708,401	\$11,107,314	12.30%	(\$4,518,473)	\$6,588,841	7.30%
Rate GS-FL	\$160,673	\$49,602	8.60%	(\$49,602)	\$0	0.00%
Rate EH	(\$766,827)	\$264,505	44.02%	(\$24,785)	\$239,721	39.89%
Rate SP	\$6,998	\$3,118	10.41%	(\$2,314)	\$804	2.68%
Rate DT - Secondary	\$4,098,995	\$5,475,034	11.67%	(\$1,755,737)	\$3,719,297	7.93%
Rate DT-Primary	\$793,288	\$3,711,397	12.39%	(\$630,403)	\$3,080,994	10.29%
Rate DP	(\$36,473)	\$185,640	13.64%	(\$20,143)	\$165,496	12.16%
Rate TT	\$1,316,633	\$1,170,405	8.32%	(\$499,495)	\$670,910	4.77%
Lighting	(\$38,601)	\$228,277	12.17%	(\$24,804)	\$203,473	10.84%
Other - Water Pumping	(\$17,736)	\$5,861	34.79%	(\$545)	\$5,316	31.55%
Total	\$0	\$45,634,456	14.70%	(\$10,000,000)	\$35,634,456	11.51%

Q. Does this conclude your direct testimony?

A. Yes, it does.

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Regulatory Assets and Liabilities; and 4) All
Other Required Approvals and Relief.

Case No. 2019-00271

AFFIDAVIT OF JUSTIN BIEBER

STATE OF UTAH
COUNTY OF SALT LAKE

Justin D. Bieber, being first duly sworn, deposes and states that:

- 1. He is a Senior Consultant with Energy Strategies, L.L.C., in Salt Lake City, Utah;
2. He is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Justin Bieber;"
3. Said testimony and exhibits were prepared by him and under his direction and supervision;
4. If inquiries were made as to the facts in said testimony and exhibits he would respond as therein set forth; and
5. The aforesaid testimony is true and correct to the best of his knowledge, information and belief.

Justin Bieber

Subscribed and sworn to or affirmed before me this 11th day of December, 2019, by Justin Bieber.



Millicent Pichardo
Notary Public

**Example Revenue Allocation Adjustment
 At A \$10 Million Rate Reduction Relative to Duke Energy Kentucky's Filed Case**

Rate Class	Jurisdictional Electric Rate Base	Present Revenues	Existing Interclass Subsidy Paid/(Received)	Duke Energy Kentucky Proposed Increase \$	%	Step 1 Rate Reduction Based on Rate Base	Step 2 Rate Reduction Based on Current Subsidy	Potential Rate Decrease From Steps 1 & 2	Adjustment so No Class Receives a Decrease	Rate Reduction Relative to Filed Case	Increase at Reduced Revenue Requirement \$	%
Rate RS	\$ 468,128,678	\$ 123,883,637	\$ (17,225,351)	\$ 23,433,302	18.82%	\$ (2,473,135)	\$ -	\$ -	\$ (563)	\$ (2,473,698)	\$ 20,959,605	16.92%
Rate DS	\$ 242,499,761	\$ 90,318,223	\$ 11,708,401	\$ 11,107,314	12.30%	\$ (1,281,132)	\$ (3,237,050)	\$ -	\$ (292)	\$ (4,518,473)	\$ 6,588,841	7.30%
Rate GS-FL	\$ 1,195,789	\$ 577,046	\$ 160,673	\$ 49,602	8.60%	\$ (6,317)	\$ (44,422)	\$ (1,137)	\$ 1,137	\$ (49,602)	\$ -	0.00%
Rate EH	\$ 4,690,299	\$ 600,937	\$ (766,827)	\$ 264,505	44.02%	\$ (24,779)	\$ -	\$ -	\$ (6)	\$ (24,785)	\$ 239,721	39.89%
Rate SP	\$ 71,824	\$ 29,960	\$ 6,998	\$ 3,118	10.41%	\$ (379)	\$ (1,935)	\$ -	\$ (0)	\$ (2,314)	\$ 804	2.68%
Rate DT - Secondary	\$ 117,799,323	\$ 46,910,116	\$ 4,098,995	\$ 5,475,034	11.67%	\$ (622,337)	\$ (1,133,259)	\$ -	\$ (142)	\$ (1,755,737)	\$ 3,719,297	7.93%
Rate DT-Primary	\$ 77,794,031	\$ 29,943,872	\$ 793,288	\$ 3,711,397	12.39%	\$ (410,988)	\$ (219,322)	\$ -	\$ (94)	\$ (630,403)	\$ 3,080,994	10.29%
Rate DP	\$ 3,811,936	\$ 1,361,377	\$ (36,473)	\$ 185,640	13.64%	\$ (20,139)	\$ -	\$ -	\$ (5)	\$ (20,143)	\$ 165,496	12.16%
Rate TT	\$ 25,639,048	\$ 14,062,168	\$ 1,316,633	\$ 1,170,405	8.32%	\$ (135,452)	\$ (364,013)	\$ -	\$ (31)	\$ (499,495)	\$ 670,910	4.77%
Lighting	\$ 4,693,957	\$ 1,876,470	\$ (38,601)	\$ 228,277	12.17%	\$ (24,798)	\$ -	\$ -	\$ (6)	\$ (24,804)	\$ 203,473	10.84%
Other - Water Pumping	\$ 103,180	\$ 16,848	\$ (17,736)	\$ 5,861	34.79%	\$ (545)	\$ -	\$ -	\$ (0)	\$ (545)	\$ 5,316	31.55%
Total	\$ 946,427,826	\$ 309,580,654	\$ 0	\$ 45,634,456	14.70%	\$ (5,000,000)	\$ (5,000,000)	\$ (1,137)	\$ (50)	\$ (10,000,000)	\$ 35,634,456	11.51%