

# OPEN MEETING



0000110465

**ORIGINAL**

**MEMORANDUM  
RECEIVED**

4/11

TO: THE COMMISSION  
FROM: Utilities Division  
DATE: April 28, 2010  
RE: GRAHAM COUNTY ELECTRIC COOPERATIVE, INC. – APPLICATION FOR APPROVAL OF A TARIFF FOR RESIDENTIAL TOU SERVICE (DOCKET NO. E-01749A-09-0041)

2010 APR 28 P 4: 04

AZ CORP COMMISSION  
DOCKET CONTROL

On February 2, 2009, Graham County Electric Cooperative, Inc. (“Graham County”, “GCEC”, “Applicant” or “Cooperative”), pursuant to Decision No. 69736, filed an Application (“Application”) for authorization to provide voluntary Rate Schedule A-TOU (“Time-of-Use”) service to its residential customers. The Decision, in part, requires that “Within 18 months of Commission adoption of this standard, each electric distribution utility shall offer to appropriate customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time periods and reflects the variance, if any, in the utility’s costs of generating and purchasing electricity at the wholesale level.”<sup>1</sup> In addition, the Cooperative was required to “... investigate the feasibility and cost-effectiveness of implementing advanced metering infrastructure for its service territory and shall begin implementing the technology if feasible and cost-effective.”<sup>2</sup>

The Cooperative’s TOU rates, as proposed, would initially only be available to its residential customers. The Applicant has requested a waiver from the time-based rate schedule requirement for its non-residential customers. Graham County’s primary reason for initially limiting its proposed TOU rates to residential members is that the Cooperative has not determined the costs or feasibility of offering TOU rate options to its non-residential customers.

### Staff’s Findings

The Application indicates that GCEC serves approximately 6,100 members, of which approximately 5,800 (95 percent) are residential customers. At this time, Graham is not recommending TOU tariffs for its non-residential customers. Based on responses to Staff’s data requests, Staff determined the following:

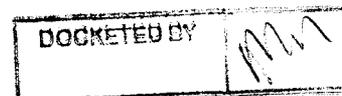
1. Graham County has not conducted cost of service or feasibility studies in support of its proposed Rate Schedule A-TOU tariff;

Arizona Corporation Commission  
**DOCKETED**

APR 28 2010

<sup>1</sup> Docket No. E-00000A-06-0038, p. 7, lines 6-9

<sup>2</sup> Decision No. 69736, p. 7, lines 11-12



2. the Cooperative relied on its existing rate structure and power costs, as well as TOU filings by similar cooperatives, such as Trico Electric Cooperative (“Trico”), to develop its proposed TOU rates and time periods;
3. Graham County believes that the usage patterns of Trico’s members are similar to GCEC’s customers’ usage patterns, and as such, recommends a 70 percent off-peak and 30 percent on-peak usage ratio;
4. the majority of Graham County’s customers do not have meters that register and produce a record of hourly usage;
5. the Cooperative has concluded that the variation in non-residential customers’ usage is significantly higher than residential customers’ usage variations, and has therefore recommended excluding non-residential customers from TOU options at this time;
6. Graham County’s purchase power rates are not time differentiated at the wholesale level, consequently there are no energy-related cost savings available to pass on to its retail members; and,
7. load and coincident peak data were not filed in support of the proposed on-peak and off-peak hours, because the Cooperative believes that it is appropriate to use Trico’s peak periods and days as models to develop their respective TOU periods. Staff notes that both GCEC and Trico, at the time of filing this Application, buy all of their power from Arizona Electric Power Cooperative (“AEPCO”), and pay a demand charge based on their demands at the time of AEPCO’s monthly coincident peak.

The following summary table was developed by Staff to compare Graham County’s existing and proposed rates; and GCEC’s proposed TOU time periods with time periods recently approved for Trico in Decision No. 71253:

**RESIDENTIAL RATE CLASS**

Table I	<u>Existing</u>	<u>Proposed</u>	<u>Existing</u>
[A]	[B]	[C]	[D]
	<u>Graham County</u> (Non TOU Rates & Hours)	<u>Graham County</u> (TOU Rates & Hours)	<u>Trico Electric*</u> (TOU Hours)
Customer Charge	\$9.00	\$15.00	
On-Peak per kWh	\$0.11038	\$0.21000	
Off-Peak per kWh	\$0.11038	\$0.06000	
Summer Months	April-October	April-October	April-October
Summer On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	1 p.m. to 8 p.m. (Every Day)	1 p.m. to 9 p.m. (Monday-Friday)
Winter Months	November-March	November-March	November-March
Winter On-Peak	All kWh	6 a.m. to 9 a.m.	6 a.m. to 10 a.m. and 6 p.m. to 10 p.m.

Hours (Remaining hours are Off-Peak hours)	(Every Day)	and 5 p.m. to 9 p.m. (Every Day)	(Monday-Friday)
Estimated Annual On-Peak Hours		2,555	2,032

\*Decision No. 71253 issued September 2, 2009. Off-Peak hours include the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Based on information contained in Table I, Staff concluded that: 1) Graham County's proposed annual on-peak hours exceed Trico's annual on-peak hours by 523 hours (2,555 – 2,032); and, 2) GCEC's proposed on-peak hours would include all weekends and holidays.

**Staff's Recommendations**

**Commission Decision No. 69736**

As discussed above, Decision No. 69736 requires distribution utilities to offer time-based rate schedules to appropriate customer classes and investigate the feasibility of implementing an advanced metering infrastructure. The Applicant has requested a waiver from the time-based rate schedule requirement for its non-residential customers and does not address the "infrastructure" requirement in the Application.

Staff recommends granting a temporary waiver from the time-based non-residential rate schedule requirement. Staff recommends an experimental one-year pilot period for Graham County's proposed residential Rate Schedule A-TOU. The pilot proposal will be discussed in more detail below. During the pilot period for the residential TOU rate schedule, Graham County should also gather information on non-residential customers to determine the feasibility of developing appropriate TOU rate options for non-residential customers.

Regarding advanced metering infrastructures, Staff recommends that Graham County be required to docket within 90 days of the Commission's Decision in this matter, empirical data that support its decision to implement or not implement an advanced metering infrastructure.

**Energy Rates**

Although Graham County opted to rely on TOU rates filed by other cooperatives having similar usage patterns, Graham County did not recommend TOU energy rates that have similar on-peak to off-peak rate ratios. Table II illustrates the derivation of rate ratios.

**Table II TOU RATES PER KWH AND RESULTANT RATE RATIOS**

	<u>Graham County Proposed</u>	<u>Trico Existing</u>	<u>Staff Proposed*</u>
A) On-Peak	\$0.21000/kWh	\$0.19320/kWh	\$0.17499/kWh
B) Off-Peak	\$0.06000/kWh	\$0.07320/kWh	\$0.07651/kWh
C) Ratios = A/B	3.50	2.64	2.29

\*Attachment 2, Part I

Graham County’s proposed TOU energy rates would create a rate ratio of 3.50, compared to Trico’s rate ratio of approximately 2.64 and Staff’s proposed rate ratio of approximately 2.29. GCEC’s proposed ratio is nearly 33 percent higher than Trico’s existing rate ratio and approximately 53 percent above Staff’s proposed rate ratio.

Staff is concerned about energy ratios because the higher they are compared to the rate ratio of a referenced model, the more unlikely such rates will encourage customers to sign-up for TOU rates as a way to reduce their monthly electric bills. One reason for this likelihood is that prospective TOU customers are seeking balanced TOU rates that provide “reasonable incentives” to move kWh usage to off-peak hours. Although it is nearly impossible to draft a definition that nearly everyone will agree to, most ratepayers agree that rewards (i.e. lower off-peak rates) should be reasonably balanced with potential penalties (i.e., reasonably higher on-peak rates). If a TOU on-peak rate is too severe compared to existing non-TOU rates, customers will opt out rather than expose themselves to a perceived severe financial risk.

Attachment 2, Part III illustrates the \$/kWh impact on Graham County’s and Staff’s proposed TOU rates. A general summary of TOU rates is that an increasing rate ratio is highly correlated (99+ percent; Attachment 2, Part II) with higher on-peak rates (penalties) that are skewed upward more than off-peak rates (rewards) have been lowered. The following excerpt from Attachment 1 illustrates this point from a different perspective.

**Table III RESIDENTIAL BILL COMPARISONS\***

kWh Monthly Usage Level	Monthly kWh	Graham County Current Rates	Graham County Proposed TOU Rates	Graham County Monthly Savings	Staff Proposed TOU Rates	Staff Monthly Savings
Low Usage	250	\$36.60	\$41.25	(\$4.65)	\$38.91	(\$2.31)
Average Usage	785	\$95.65	\$97.43	(\$1.78)	\$95.65	\$0.00
Median Usage	1,875	\$215.96	\$211.88	\$4.08	\$211.25	\$4.71
High Usage	3,500	\$395.33	\$382.50	\$12.83	\$383.59	\$11.74

\*Based on 70 percent usage being off-peak

Although the monthly dollar difference between Graham County’s proposed rates and Staff’s proposed rates is small, Staff’s proposed rates produce a revenue neutral result at the monthly average 785 kWh usage level. In addition, Staff’s proposed rates would be more beneficial to at least 94 percent of the Cooperative’s residential customers (Docket No. E-01749A-07-0236, Schedule H-5) compared to Graham County’s proposed rates.

Regarding the 70 percent off-peak usage parameter, Staff believes that a 70 percent off-peak and 30 percent on-peak kWh usage ratio is a reasonable rate design parameter for Graham County’s residential customers. For example, Trico’s actual residential TOU kWh usage as filed

in its latest rate case was 71 percent off-peak and 29 percent on-peak (Docket No. E-01461A-08-0430, Schedule F-5.2, p. 4).

The following table summarizes the sensitivity of rates proposed by Staff under different off and on-peak kWh usage ratios. The impact on customers' monthly billings is fairly modest at less than 4.5 percent at the given usage ratios.

**TABLE IV SENSITIVITY TO DIFFERENT OFF AND ON-PEAK USAGE RATIOS**

kWh Monthly Usage Level	Monthly kWh	+/- Deviation From Base Case Monthly Bill	Monthly Bill Under Staff's Proposed Rates @ 75/25	Monthly Bill Under Staff's Proposed Rates @ 70/30 *	Monthly Bill Under Staff's Proposed Rates @ 65/35
Low Usage	250	\$1.23/3.16%	37.68	\$38.91	\$40.14
Average Usage	785	\$3.87/4.04%	\$91.79	\$95.65	\$99.52
Median Usage	1,875	\$9.23/4.37%	\$202.02	\$211.25	\$220.48
High Usage	3,500	\$17.23/4.49%	\$366.36	\$383.59	\$400.82

\* Base Case

Attachment 2 contains the derivation of the \$0.07651 per kWh off-peak and \$0.17499 per kWh on-peak rates. These rates create a rate ratio of 2.29. The proposed TOU rates support the existing approved base cost of power rate of \$0.076509 per kWh. Attachment 2, Part I begins with the existing base cost of power carried to five decimal places. Placing the off-peak rate at this level allowed Staff to develop an on-peak rate that produces a revenue neutral on and off-peak rate combination and a desirable rate ratio of 2.29. As discussed above, it is important to send the right price signals by "right sizing" the perceived "penalty" for using on-peak energy. Attachment 2, Part III illustrates the impact of different rate ratios on reward and penalty TOU rates.

### Customer Charge

Regarding the Cooperative's proposed monthly Customer Charge in the amount of \$15.00, Staff elected to base its rate design on a proposed \$12.40 Customer Charge, which reflects an increase of \$3.40 per month compared to the existing customer charge. The \$3.40 incremental charge is designed to recover the incremental carrying costs associated with the purchase and installation of a residential time-based meter and incremental billing-related costs. Staff received cost data that are supported by Form 7, 2009 entries that produce an approximate incremental cost in the amount of \$351 per meter. The annualized carrying costs (11.49 percent) produce an annualized, incremental monthly carrying cost in the amount of approximately \$3.40 ( $\$351 \times 11.49\% \div 12$ ). Staff recommends approval of its proposed \$12.40 monthly Customer Charge.

### Experimental One-Year Pilot Period

Staff believes that TOU rates approved in this docket should be offered to Graham County's residential customers as an experimental, optional TOU rate alternative. This approach gives the Applicant and Commission more flexibility to adjust rates, terms and conditions during

a transition period from non-TOU rates to optional TOU rates. Staff believes that a one-year "pilot" period would be sufficient to identify such things as, but not be limited to, the pros and cons of TOU rates for Graham County's residential and non-residential customers, level of customer participation, customer savings or losses, impact on GCEC demand costs, operations and revenues; and, make potentially useful comparisons between the TOU and net-metering programs.

At the end of the pilot period, estimated by Staff to be approximately 14 months after the Commission's Decision in this matter, Staff recommends that GCEC present its summary findings and recommendations to the Commission for review. If Graham County files a rate case during the pilot period, Staff recommends that existing TOU rate options be incorporated into the rate case for consideration by the Commission. Under either scenario, Staff recommends that Schedule A-TOU would remain in effect until acted upon by the Commission.

### **Fair Value Considerations**

Staff has considered the proposed equipment charges (included in the proposed \$12.40 monthly customer charge) in terms of fair value implications. In Decision No. 70289, issued on April 24, 2008, the Commission determined the fair value of Graham County's property to be \$19,076,282. Although Staff considered this information, the proposed equipment charges on Schedule A-TOU would have no significant impact on the Cooperative's revenue, fair value rate base, or rate of return, because these charges are cost-based and relatively limited in scope.

### **Summary of Recommendations**

Based on information contained in the Application and developed through discovery, Staff makes the following recommendations in this docket:

- A. Staff recommends that Schedule A-TOU be approved as an experimental pilot with Staff's proposed rates, until further order of the Commission.
- B. Staff recommends the adoption of the currently approved Trico Electric's TOU hours, days, months and holidays as approved in Decision No. 71253, and as summarized in Table I, Column D.
- C. Staff recommends that Graham County be granted a temporary waiver at this time of the requirement to have time-based rate schedules for non-residential customers while Graham County gathers information and determines the feasibility of TOU options for non-residential customers.
- D. Staff recommends that within 14 months of the Decision in this matter Graham County should docket its summary findings and recommendations regarding the pilot program for consideration by the Commission.

- E. Within 90 days of the Commission's Decision in this matter, Staff recommends that Graham County be required to docket empirical data that support its decision to not install an advanced metering infrastructure at this time as required by Decision No. 69736.
- F. Within 30 days of the Commission's Decision in this matter, Staff recommends that Graham County be required to docket data that identify its 2009 monthly coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of the peaks.
- G. Staff recommends that Graham County be ordered to file a revised Schedule A-TOU in compliance with the Decision in this matter within 15 days of the effective date of the Decision.



Steven M. Olea  
Director  
Utilities Division

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ORIGINATOR: William Musgrove

2009 RESIDENTIAL/SINGLE PHASE RATE SCHEDULE COMPARISON\*\*

	Graham Current Rate Schedule	Graham-Proposed 70% Off-Peak TOU Rate	Savings in \$	Savings in %	Graham Current Rate Schedule	Staff-Proposed 70% Off-Peak TOU Rate	Savings in \$	Savings in %	
Off-Peak Usage		70%				70%			
On-Peak Usage		30%				30%			
Monthly Service Charge	\$9.00	\$15.00	\$9.00		\$9.00	\$12.40	\$3.40		
Per kWh Rate	\$0.11038	\$0.06000	\$0.11038		\$0.11038	\$0.07651	\$0.03387		
Per kWh Rate On-Peak		\$0.21000				\$0.17499	\$0.03501		
PPAM Rates as of 8-09 to 9-09	0	0	0	0	0	0	0	0	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Monthly kWh	kWh								
Residential Bill Using kWh of	250	36.60	41.25	(4.66)	-12.72%	36.60	38.91	(2.32)	-6.34%
Residential Bill Using kWh of	500	64.19	67.50	(3.31)	-5.16%	64.19	65.43	(1.24)	-1.93%
Residential Bill Using kWh of	750	91.79	93.75	(1.96)	-2.14%	91.79	91.94	(0.16)	-0.17%
Residential Bill @ Average kWh of	785	95.65	97.43	(1.78)	-1.86%	95.65	95.65	(0.00)	0.00%
Residential Bill Using kWh of	1000	119.38	120.00	(0.62)	-0.52%	119.38	118.45	0.93	0.78%
Residential Bill Using kWh of	1250	146.98	146.25	0.72	0.49%	146.98	144.97	2.01	1.37%
Residential Bill Using kWh of	1500	174.57	172.50	2.07	1.19%	174.57	171.48	3.09	1.77%
Residential Bill Using kWh of	1750	202.17	198.75	3.42	1.69%	202.17	197.99	4.17	2.06%
Median of Given Bill Court Range	1875	215.96	211.88	4.09	1.89%	215.96	211.25	4.71	2.18%
Residential Bill Using kWh of	2000	229.76	225.00	4.76	2.07%	229.76	224.51	5.25	2.29%
Residential Bill Using kWh of	2250	257.36	251.25	6.11	2.37%	257.36	251.02	6.33	2.46%
Residential Bill Using kWh of	2500	284.95	277.50	7.45	2.61%	284.95	277.54	7.42	2.60%
Residential Bill Using kWh of	2750	312.55	303.75	8.80	2.81%	312.55	304.05	8.50	2.72%
Residential Bill Using kWh of	3000	340.14	330.00	10.14	2.98%	340.14	330.56	9.58	2.82%
Residential Bill Using kWh of	3250	367.74	356.25	11.49	3.12%	367.74	357.08	10.66	2.90%
Residential Bill Using kWh of	3500	395.33	382.50	12.83	3.25%	395.33	383.59	11.74	2.97%

\* Time-of-Use

\*\* NOTE: These rates do not include sales taxes, REST Surcharges and PPAM rates.

**Staff Recommended Rates, Rate Correlations and Reward/Penalty Values**

**Part I: Staff Recommended TOU Rates and Resultant Rate Ratio**

	<u>Input Ratios</u>	<u>Input Rates</u>		<u>Input Cust Chg</u>		<u>Input Total Bill \$ *</u>
	↓	↓		↓		↓
Off-Peak	70%	0.07651		\$12.40		
On-Peak	30%	0.17499				
Rate Ratio		2.29				
				<u>Cust Chg</u>		
				& Energy		
<u>kWh</u>			<u>Energy</u>		<u>Target</u>	<u>Savings</u>
250			\$ 26.51	\$ 38.91	\$ 36.60	\$ (2.31)
500			\$ 53.03	\$ 65.43	\$ 64.19	\$ (1.24)
785			\$ 83.25	\$ 95.65	\$ 95.65	\$ (0.00)
1000			\$ 106.05	\$ 118.45	\$ 119.38	\$ 0.93
1875			\$ 198.85	\$ 211.25	\$ 215.96	\$ 4.71
3500			\$ 371.18	\$ 383.58	\$ 395.33	\$ 11.75

\* from Attachment 1, Column (B)

**Part II: Correlation Of Rate Ratios and Resultant Rates**

	<u>Given</u>		<u>Energy Rates**</u>	<u>Energy Rates**</u>
<u>Parameters For Rate Ratios</u>	<u>Rate Ratios</u>		<u>Off-Peak \$/kWh</u>	<u>On-Peak \$/kWh</u>
Staff Recommended (Part I above)	2.29		0.07651	0.17499
Trico (Table II)	2.64		0.07109	0.18763
Graham County (Proposed)	3.50		0.06000	0.21000
Correlation		-99.91%		99.69%
Correlation Squared		99.83%		99.39%

\*\*Derived using given rate ratios

**Part III: TOU Rate (\$/kWh) Rewards And Penalties**

	(A)	<u>Off-Peak</u>	<u>Off-Peak</u>	<u>Off-Peak</u>	<u>On-Peak</u>	<u>On-Peak</u>	<u>On-Peak</u>
		<u>\$/kWh</u>	<u>\$/kWh</u>	<u>\$/kWh</u>	<u>\$/kWh</u>	<u>\$/kWh</u>	<u>\$/kWh</u>
Existing Non-TOU Rate =	\$0.11038	(B)=(C)/(A)	(C)=(A)-(D)	(D)=Part II	(E)=(F)/(A)	(F)=(G)-(A)	(G)=Part II
		<u>% Reward</u>	<u>\$ Reward</u>	<u>Rates</u>	<u>% Penalty</u>	<u>\$ Penalty</u>	<u>Rates</u>
Staff Recommended (Part II Rates)		30.7%	\$0.03387	0.07651	58.5%	\$0.06461	0.17499
Graham County (Proposed)		45.6%	\$0.05038	0.06000	90.3%	\$0.09962	0.21000

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES  
Chairman

GARY PIERCE  
Commissioner

PAUL NEWMAN  
Commissioner

SANDRA D. KENNEDY  
Commissioner

BOB STUMP  
Commissioner

IN THE MATTER OF THE APPLICATION )  
OF GRAHAM COUNTY ELECTRIC )  
COOPERATIVE, INC. FOR APPROVAL OF )  
A TARIFF FOR RESIDENTIAL TOU )  
SERVICE )

DOCKET NO. E-01749A-09-0041  
DECISION NO. \_\_\_\_\_  
ORDER

Open Meeting  
May 13, 2010  
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

1. Graham County Electric Cooperative, Inc. (“Graham County”, “GCEC”, “Applicant” or “Cooperative”) is certificated to provide electric service as a non-profit corporation and public service corporation to its member-customers in Graham County, Arizona.

2. On February 2, 2009, Graham County filed an Application (“Application”) for authorization to provide Time-of-Use (“TOU”) service to its residential customers. The Decision, in part, requires that “Within 18 months of Commission adoption of this standard, each electric distribution utility shall offer to appropriate customer classes, and provide individual customers upon customer request, a time-based rate schedule under which the rate charged by the electric utility varies during different time periods and reflects the variance, if any, in the utility’s costs of generating and purchasing electricity at the wholesale level.”<sup>1</sup> In addition, the Cooperative was

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<sup>1</sup> Docket No. E-00000A-06-0038, p. 7, lines 6-9

1 required to "... investigate the feasibility and cost-effectiveness of implementing advanced  
2 metering infrastructure for its service territory and shall begin implementing the technology if  
3 feasible and cost-effective.<sup>2</sup>

4 3. The Cooperative's TOU rates, as proposed, would initially only be available to its  
5 residential customers. The Applicant has requested a waiver from the time-based rate schedule  
6 requirement for its non-residential customers. Graham County's primary reason for initially  
7 limiting its proposed TOU rates to residential members is that the Cooperative has not determined  
8 the costs or feasibility of offering TOU rate options to its non-residential customers.

9 **Staff's Findings**

10 4. The Application indicates that GCEC serves approximately 6,100 members, of  
11 which approximately 5,800 (95 percent) are residential customers. At this time, Graham is not  
12 recommending TOU tariffs for its non-residential customers. Based on responses to Staff's data  
13 requests, Staff determined the following:

- 14 a) Graham County has not conducted cost of service or feasibility studies in support of  
15 its proposed Rate Schedule A-TOU tariff;
- 16 b) the Cooperative relied on its existing rate structure and power costs, as well as TOU  
17 filings by similar cooperatives, such as Trico Electric Cooperative ("Trico"), to  
develop its proposed TOU rates and time periods;
- 18 c) Graham County believes that the usage patterns of Trico's members are similar to  
19 GCEC's customers' usage patterns, and as such, recommends a 70 percent off-peak  
and 30 percent on-peak usage ratio;
- 20 d) the majority of Graham County's customers do not have meters that register and  
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- 22 e) the Cooperative has concluded that the variation in non-residential customers'  
23 usage is significantly higher than residential customers' usage variations, and has  
24 therefore recommended excluding non-residential customers from TOU options at  
this time;
- 25 f) Graham County's purchase power rates are not time differentiated at the wholesale  
26 level, consequently there are no energy-related cost savings available to pass on to  
its retail members; and,

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28 <sup>2</sup>Decision No. 69736, p. 7, lines 11-12

g) load and coincident peak data were not filed in support of the proposed on-peak and off-peak hours, because the Cooperative believes that it is appropriate to use Trico's peak periods and days as models to develop their respective TOU periods. Staff notes that both GCEC and Trico, at the time of filing this Application, buy all of their power from Arizona Electric Power Cooperative ("AEPCO"), and pay a demand charge based on their demands at the time of AEPCO's monthly coincident peak.

5. The following summary table was developed by Staff to compare Graham County's existing and proposed rates; and GCEC's proposed TOU time periods with time periods recently approved for Trico in Decision No. 71253:

**RESIDENTIAL RATE CLASS**

<b>Table I</b>	<b>Existing</b>	<b>Proposed</b>	<b>Existing</b>
[A]	[B]	[C]	[D]
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Off-Peak per kWh	\$0.11038	\$0.06000	
Summer Months	April-October	April-October	April-October
Summer On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	1 p.m. to 8 p.m. (Every Day)	1 p.m. to 9 p.m. (Monday-Friday)
Winter Months	November-March	November-March	November-March
Winter On-Peak Hours (Remaining hours are Off-Peak hours)	All kWh (Every Day)	6 a.m. to 9 a.m. and 5 p.m. to 9 p.m. (Every Day)	6 a.m. to 10 a.m. and 6 p.m. to 10 p.m. (Monday-Friday)
Estimated Annual On-Peak Hours		2,555	2,032

\*Decision No. 71253 issued September 2, 2009. Off-Peak hours include the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Based on information contained in Table I, Staff concluded that: 1) Graham County's proposed annual on-peak hours exceed Trico's annual on-peak hours by 523 hours (2,555 – 2,032); and, 2) GCEC's proposed on-peak hours would include all weekends and holidays.

**Staff's Recommendations**

**Commission Decision No. 69736**

6. As discussed above, Decision No. 69736 requires distribution utilities to offer time-based rate schedules to appropriate customer classes and investigate the feasibility of implementing an advanced metering infrastructure. The Applicant has requested a waiver from the

1 time-based rate schedule requirement for its non-residential customers and does not address the  
2 “infrastructure” requirement in the Application.

3 7. Staff recommends granting a temporary waiver from the time-based non-residential  
4 rate schedule requirement. Staff recommends an experimental one-year pilot period for Graham  
5 County’s proposed residential Rate Schedule A-TOU. The pilot proposal will be discussed in  
6 more detail below. During the pilot period for the residential TOU rate schedule, Graham County  
7 should also gather information on non-residential customers to determine the feasibility of  
8 developing appropriate TOU rate options for non-residential customers.

9 8. Regarding advanced metering infrastructures, Staff recommended that Graham  
10 County be required to docket within 90 days of the Commission’s Decision in this matter,  
11 empirical data that support its decision to implement or not implement an advanced metering  
12 infrastructure.

### 13 **Energy Rates**

14 9. Although Graham County opted to rely on TOU rates filed by other cooperatives  
15 having similar usage patterns, Graham County did not recommend TOU energy rates that have  
16 similar on-peak to off-peak rate ratios. Table II illustrates the derivation of rate ratios.

17 **Table II TOU RATES PER KWH AND RESULTANT RATE RATIOS**

	<u>Graham County Proposed</u>	<u>Trico Existing</u>	<u>Staff Proposed*</u>
18 A) On-Peak	\$0.21000/kWh	\$0.19320/kWh	\$0.17499/kWh
19 B) Off-Peak	\$0.06000/kWh	\$0.07320/kWh	\$0.07651/kWh
20 C) Ratios = A/B	3.50	2.64	2.29

21 \*Attachment 2, Part I

22 10. Graham County’s proposed TOU energy rates would create a rate ratio of 3.50,  
23 compared to Trico’s rate ratio of approximately 2.64 and Staff’s proposed rate ratio of  
24 approximately 2.29. GCEC’s proposed ratio is nearly 33 percent higher than Trico’s existing rate  
25 ratio and approximately 53 percent above Staff’s proposed rate ratio.

26 11. Staff is concerned about energy ratios because the higher they are compared to the  
27 rate ratio of a referenced model, the more unlikely such rates will encourage customers to sign-up  
28 for TOU rates as a way to reduce their monthly electric bills. One reason for this likelihood is that

1 prospective TOU customers are seeking balanced TOU rates that provide “reasonable incentives”  
 2 to move kWh usage to off-peak hours. Although it is nearly impossible to draft a definition that  
 3 nearly everyone will agree to, most ratepayers agree that rewards (i.e., lower off-peak rates) should  
 4 be reasonably balanced with potential penalties (i.e., reasonably higher on-peak rates). If a TOU  
 5 on-peak rate is too severe compared to existing non-TOU rates, customers will opt out rather than  
 6 expose themselves to a perceived severe financial risk.

7 12. Attachment 2, Part III illustrates the \$/kWh impact on Graham County’s and Staff’s  
 8 proposed TOU rates. A general summary of TOU rates is that an increasing rate ratio is highly  
 9 correlated (99+ percent; Attachment 2, Part II) with higher on-peak rates (penalties) that are  
 10 skewed upward more than off-peak rates (rewards) have been lowered. The following excerpt  
 11 from Attachment 1 illustrates this point from a different perspective.

12  
 13 **Table III RESIDENTIAL BILL COMPARISONS\***

14 kWh Monthly Usage Level	15 Monthly kWh	16 Graham County Current Rates	17 Graham County Proposed TOU Rates	18 Graham County Monthly Savings	19 Staff Proposed TOU Rates	20 Staff Monthly Savings
Low Usage	250	\$36.60	\$41.25	(\$4.65)	\$38.91	(\$2.31)
Average Usage	785	\$95.65	\$97.43	(\$1.78)	\$95.65	\$0.00
Median Usage	1,875	\$215.96	\$211.88	\$4.08	\$211.25	\$4.71
High Usage	3,500	\$395.33	\$382.50	\$12.83	\$383.59	\$11.74

21 \*Based on 70 percent usage being off-peak

22 13. Although the monthly dollar difference between Graham County’s proposed rates  
 23 and Staff’s proposed rates is small, Staff’s proposed rates produce a revenue neutral result at the  
 24 monthly average 785 kWh usage level. In addition, Staff’s proposed rates would be more  
 25 beneficial to at least 94 percent of the Cooperative’s residential customers (Docket No. E-01749A-  
 26 07-0236, Schedule H-5) compared to Graham County’s proposed rates.

27 14. Regarding the 70 percent off-peak usage parameter, Staff believes that a 70 percent  
 28 off-peak and 30 percent on-peak kWh usage ratio is a reasonable rate design parameter for Graham

1 County's residential customers. For example, Trico's actual residential TOU kWh usage as filed  
 2 in its latest rate case was 71 percent off-peak and 29 percent on-peak (Docket No. E-01461A-08-  
 3 0430, Schedule F-5.2, p. 4).

4 15. The following table summarizes the sensitivity of rates proposed by Staff under  
 5 different off and on-peak kWh usage ratios. The impact on customers' monthly billings is fairly  
 6 modest at less than 4.5 percent at the given usage ratios.

7 **TABLE IV SENSITIVITY TO DIFFERENT OFF AND ON-PEAK USAGE RATIOS**

8 kWh Monthly Usage Level	Monthly kWh	+/- Deviation From Base Case Monthly Bill	Monthly Bill Under Staff's Proposed Rates @ 75/25	Monthly Bill Under Staff's Proposed Rates @ 70/30 *	Monthly Bill Under Staff's Proposed Rates @ 65/35
9 Low Usage	250	\$1.23/3.16%	37.68	\$38.91	\$40.14
10 Average Usage	785	\$3.87/4.04%	\$91.79	\$95.65	\$99.52
11 Median Usage	1,875	\$9.23/4.37%	\$202.02	\$211.25	\$220.48
12 High Usage	3,500	\$17.23/4.49%	\$366.36	\$383.59	\$400.82

13 \* Base Case

14  
 15 16. Attachment 2 contains the derivation of the \$0.07651 per kWh off-peak and  
 16 \$0.17499 per kWh on-peak rates. These rates create a rate ratio of 2.29. The proposed TOU rates  
 17 support the existing approved base cost of power rate of \$0.076509 per kWh. Attachment 2, Part I  
 18 begins with the existing base cost of power carried to five decimal places. Placing the off-peak  
 19 rate at this level allowed Staff to develop an on-peak rate that produces a revenue neutral on and  
 20 off-peak rate combination and a desirable rate ratio of 2.29. As discussed above, it is important to  
 21 send the right price signals by "right sizing" the perceived "penalty" for using on-peak energy.  
 22 Attachment 2, Part III illustrates the impact of different rate ratios on reward and penalty TOU  
 23 rates.

24 **Customer Charge**

25 17. Regarding the Cooperative's proposed monthly Customer Charge in the amount of  
 26 \$15.00, Staff elected to base its rate design on a proposed \$12.40 Customer Charge, which reflects  
 27 an increase of \$3.40 per month compared to the existing customer charge. The \$3.40 incremental  
 28 charge is designed to recover the incremental carrying costs associated with the purchase and

1 installation of a residential time-based meter and incremental billing-related costs. Staff received  
2 cost data that are supported by Form 7, 2009 entries that produce an approximate incremental cost  
3 in the amount of \$351 per meter. The annualized carrying costs (11.49 percent) produce an  
4 annualized, incremental monthly carrying cost in the amount of approximately \$3.40 ( $\$351 \times$   
5  $11.49\% \div 12$ ). Staff recommends approval of its proposed \$12.40 monthly Customer Charge.

#### 6 **Experimental One-Year Pilot Period**

7 18. Staff believes that TOU rates approved in this docket should be offered to Graham  
8 County's residential customers as an experimental, optional TOU rate alternative. This approach  
9 gives the Applicant and Commission more flexibility to adjust rates, terms and conditions during a  
10 transition period from non-TOU rates to optional TOU rates. Staff believes that a one-year "pilot"  
11 period would be sufficient to identify, but not be limited to, the pros and cons of TOU rates for  
12 Graham County's residential and non-residential customers, level of customer participation,  
13 customer savings or losses, impact on GCEC demand costs, operations and revenues; and, make  
14 potentially useful comparisons between the TOU and net-metering programs.

15 19. At the end of the pilot period, estimated by Staff to be approximately 14 months  
16 after the Commission's Decision in this matter, Staff recommends that GCEC present its summary  
17 findings and recommendations to the Commission for review. If Graham County files a rate case  
18 during the pilot period, Staff recommends that existing TOU rate options be incorporated into the  
19 rate case for consideration by the Commission. Under either scenario, Staff recommends that  
20 Schedule A-TOU would remain in effect until acted upon by the Commission.

#### 21 **Fair Value Considerations**

22 20. Staff has considered the proposed equipment charges (included in the proposed  
23 \$12.40 monthly customer charge) in terms of fair value implications. In Decision No. 70289,  
24 issued on April 24, 2008, the Commission determined the fair value of Graham County's property  
25 to be \$19,076,282. Although Staff considered this information, the proposed equipment charges  
26 on Schedule A-TOU would have no significant impact on the Cooperative's revenue, fair value  
27 rate base, or rate of return, because these charges are cost-based and relatively limited in scope.

28 . . .

**Summary of Recommendations**

Based on information contained in the Application and developed through discovery, Staff has made the following recommendations in this docket:

- A. Staff recommended that Schedule A-TOU be approved as an experimental pilot with Staff's proposed rates, until further order of the Commission.
- B. Staff recommended the adoption of the currently approved Trico Electric's TOU hours, days, months and holidays as approved in Decision No. 71253, and as summarized in Table I, Column D.
- C. Staff recommends that Graham County be granted a temporary waiver at this time of the requirement to have time-based rate schedules for non-residential customers while Graham County gathers information and determines the feasibility of TOU options for non-residential customers.
- D. Staff recommends that within 14 months of the Decision in this matter Graham County should docket its summary findings and recommendations regarding the pilot program for consideration by the Commission.
- E. Within 90 days of the Commission's Decision in this matter, Staff recommended that Graham County be required to docket empirical data that support its decision to not install an advanced metering infrastructure at this time as required by Decision No. 69736.
- F. Within 30 days of the Commission's Decision in this matter, Staff recommended that Graham County be required to docket data that identify its 2009 monthly coincident and non-coincident power peaks (kW), and identify the times, dates and weekdays of the peaks.
- G. Staff recommended that Graham County be ordered to file a revised Schedule A-TOU in compliance with the Decision in this matter within 15 days of the effective date of the Decision.

**CONCLUSIONS OF LAW**

1. Graham County Electric Cooperative, Inc. is a public service corporation within the meaning of Article XV, Section 2 of the Arizona Constitution.

2. The Commission has jurisdiction over the Graham County Electric Cooperative, Inc. and subject matter of the Application.

3. Approval of the Graham County Electric Cooperative's proposed Rate Schedule A-TOU in this Application does not constitute a rate increase as contemplated by A.R.S. Section 40-250.



1 IT IS FURTHER ORDERED that Graham County Electric Cooperative, Inc. shall docket,  
2 as a compliance item in this matter, tariff pages for the approved Schedule A-TOU within 15 days  
3 from the effective date of the Decision in this matter.

4 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

5  
6 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

7  
8 \_\_\_\_\_  
9 CHAIRMAN

COMMISSIONER

10  
11 \_\_\_\_\_  
12 COMMISSIONER

COMMISSIONER

COMMISSIONER

13 IN WITNESS WHEREOF, I, ERNEST G. JOHNSON,  
14 Executive Director of the Arizona Corporation Commission,  
15 have hereunto, set my hand and caused the official seal of  
16 this Commission to be affixed at the Capitol, in the City of  
17 Phoenix, this \_\_\_\_\_ day of \_\_\_\_\_, 2010.

18 \_\_\_\_\_  
19 ERNEST G. JOHNSON  
20 EXECUTIVE DIRECTOR

21 DISSENT: \_\_\_\_\_

22 DISSENT: \_\_\_\_\_

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26  
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28

1 SERVICE LIST FOR: Graham County Electric Cooperative, Inc.  
2 DOCKET NO. E-01749A-09-0041

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14 1200 West Washington Street  
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2009 RESIDENTIAL/SINGLE PHASE RATE SCHEDULE COMPARISON\*\*

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	Graham Current Rate Schedule	Graham Proposed 70% Off-Peak TOU Rate	Graham Current Rate Schedule	Graham Proposed 70% Off-Peak TOU Rate	Savings in %	Rate Schedule	Staff-Proposed 70% Off-Peak TOU Rate	Savings in \$	Savings in %
Off-Peak Usage									
On-Peak Usage									
Monthly Service Charge	\$9.00	\$15.00	\$9.00	\$15.00		\$9.00	\$12.40	\$3.40	30%
Per kWh Rate	\$0.11038	\$0.06000	\$0.11038	\$0.06000		\$0.11038	\$0.07651	\$0.03387	30%
Per kWh Rate On-Peak		\$0.21000		\$0.21000			\$0.17499	\$0.03501	17%
PPAM Rates as of 8-09 to 9-09	0	0	0	0		0		0	
Monthly kWh									
Residential Bill Using kWh of 250	36.60	41.25	36.60	41.25	-12.72%	36.60	38.91	(2.32)	-6.34%
Residential Bill Using kWh of 500	64.19	67.50	64.19	67.50	-5.16%	64.19	65.43	(1.24)	-1.93%
Residential Bill Using kWh of 750	91.79	93.75	91.79	93.75	-2.14%	91.79	91.94	(0.16)	-0.17%
Residential Bill @ Average kWh of 785	95.65	97.43	95.65	97.43	-1.86%	95.65	95.65	(0.00)	0.00%
Residential Bill Using kWh of 1000	119.38	120.00	119.38	120.00	-0.52%	119.38	118.45	0.93	0.78%
Residential Bill Using kWh of 1250	146.98	146.25	146.98	146.25	0.49%	146.98	144.97	2.01	1.37%
Residential Bill Using kWh of 1500	174.57	172.50	174.57	172.50	1.19%	174.57	171.48	3.09	1.77%
Residential Bill Using kWh of 1750	202.17	198.75	202.17	198.75	1.69%	202.17	197.99	4.17	2.06%
Median of Given Bill Count Range	215.96	211.88	215.96	211.88	1.89%	215.96	211.25	4.71	2.18%
Residential Bill Using kWh of 2000	229.76	225.00	229.76	225.00	2.07%	229.76	224.51	5.25	2.29%
Residential Bill Using kWh of 2250	257.36	251.25	257.36	251.25	2.37%	257.36	251.02	6.33	2.46%
Residential Bill Using kWh of 2500	284.95	277.50	284.95	277.50	2.61%	284.95	277.54	7.42	2.60%
Residential Bill Using kWh of 2750	312.55	303.75	312.55	303.75	2.81%	312.55	304.05	8.50	2.72%
Residential Bill Using kWh of 3000	340.14	330.00	340.14	330.00	2.98%	340.14	330.56	9.58	2.82%
Residential Bill Using kWh of 3250	367.74	356.25	367.74	356.25	3.12%	367.74	357.08	10.66	2.90%
Residential Bill Using kWh of 3500	395.33	382.50	395.33	382.50	3.25%	395.33	383.59	11.74	2.97%

\* Time-of-Use

\*\* NOTE: These rates do not include sales taxes, REST Surcharges and PPAM rates.

**Staff Recommended Rates, Rate Correlations and Reward/Penalty Values**

**Part I: Staff Recommended TOU Rates and Resultant Rate Ratio**

	<u>Input Ratios</u>	<u>Input Rates</u>		<u>Input Cust Chg</u>		<u>Input Total Bill \$ *</u>
	↓	↓		↓		↓
Off-Peak	70%	0.07651		\$12.40		
On-Peak	30%	0.17499				
Rate Ratio		2.29				
				<u>Cust Chg &amp; Energy</u>		<u>Target</u>
<u>kWh</u>			<u>Energy</u>			<u>Savings</u>
250			\$ 26.51	\$ 38.91	\$ 36.60	\$ (2.31)
500			\$ 53.03	\$ 65.43	\$ 64.19	\$ (1.24)
785			\$ 83.25	\$ 95.65	\$ 95.65	\$ (0.00)
1000			\$ 106.05	\$ 118.45	\$ 119.38	\$ 0.93
1875			\$ 198.85	\$ 211.25	\$ 215.96	\$ 4.71
3500			\$ 371.18	\$ 383.58	\$ 395.33	\$ 11.75

\* from Attachment 1, Column (B)

**Part II: Correlation Of Rate Ratios and Resultant Rates**

	<u>Given</u>		<u>Energy Rates**</u>	<u>Energy Rates**</u>
<u>Parameters For Rate Ratios</u>	<u>Rate Ratios</u>		<u>Off-Peak \$/kWh</u>	<u>On-Peak \$/kWh</u>
Staff Recommended (Part I above)	2.29		0.07651	0.17499
Trico (Table II)	2.64		0.07109	0.18763
Graham County (Proposed)	3.50		0.06000	0.21000
Correlation		-99.91%		99.69%
Correlation Squared		99.83%		99.39%

\*\*Derived using given rate ratios

**Part III: TOU Rate (\$/kWh) Rewards And Penalties**

	(A)	Off-Peak \$/Kwh	Off-Peak \$/Kwh	Off-Peak \$/Kwh	On-Peak \$/kWh	On-Peak \$/kWh	On-Peak \$/kWh
Existing Non-TOU Rate =	\$0.11038	(B)=(C)/(A)	(C)=(A)-(D)	(D)=Part II	(E)=(F)/(A)	(F)=(G)-(A)	(G)=Part II
		<u>% Reward</u>	<u>\$ Reward</u>	<u>Rates</u>	<u>% Penalty</u>	<u>\$ Penalty</u>	<u>Rates</u>
Staff Recommended (Part II Rates)		30.7%	\$0.03387	0.07651	58.5%	\$0.06461	0.17499
Graham County (Proposed)		45.6%	\$0.05038	0.06000	90.3%	\$0.09962	0.21000