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 11 **IN THE PUBLIC UTILITIES COMMISSION**
 12 **FOR THE**
 13 **COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS**

15 **Petition of the**)
 16 **Commonwealth Utilities Corporation**)
 17 **For rate relief in its Power Business**)

RATE CASE No. 13-01

) **CUC's Testimony of:**
) **Robert E. Young**
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) **Subject: Supplemental Testimony to**
) **a large commercial customer incentive**
) **rate Tariff Rider IR, to CUC's**
) **Commercial Rate to encourage**
) **customers that self-generate more**
) **than 90% of their annual electric use**
) **to purchase all of their power from CUC**

) **Transmittal Date: April 24, 2014**

43 **Prefiled Testimony of**
 44 **Economists.com LLC**
 45 **Robert E. Young, Managing Director**

Section I – Introduction and Summary of Rate Proposal

1
2
3 **Q. What is the purpose of this prefiled testimony?**

4 The purpose is to provide my analysis of and recommendations for the Tariff Rider IR to
5 CUC's Commercial Rate (Incentive Rate) which is intended to apply to large commercial
6 customers of CUC with a load of more than 400 kW and who self-generate more than 90%
7 of their annual electrical requirements. The Incentive Rate proposed is a per kWh charge of
8 \$0.04, plus the current monthly Levelized Energy Adjustment Clause (LEAC) or fuel
9 adjustment rate and the monthly customer charge. Based on rates in effect May 1, 2014, the
10 total cost of electricity to large commercial customers who agree to purchase power at the
11 Incentive Rate would be **\$0.34426 per kWh** plus the monthly customer charge of \$10. The
12 incentive rate would be in effect for three years from the date of approval by the CPUC and
13 would require eligible large commercial customers who want to purchase power at the
14 Incentive Rate to sign a three-year agreement to purchase power from CUC. Tariff Rider IR
15 to CUC's existing Commercial Rate is attached to this testimony as **Exhibit A**.

16
17 Based on information from CUC staff, I estimate that nine customers with a combined
18 connected load of 8,522 kW, or approximately 30% of CUC's annual peak demand, would be
19 eligible for the Incentive Rate.

20
21 This testimony is presented by Robert E. Young, Managing Director of Economists.com.
22 Therefore the use of "I", "my", refers to both of Economists.com and Robert E. Young, and
23 not to CUC, unless stated otherwise specifically. My professional resume has already been
24 submitted to the CPUC in this Docket.

25
26 **Q. Why does CUC propose to implement an Incentive Rate?**

27 **A.** Currently on the island of Saipan, CUC possesses a large amount of excess generating
28 capacity combined with a several large commercial customers who generate more than 90%
29 of their annual electrical requirements. CUC's Saipan generation capacity is approximately
30 78 MW with an average monthly peak demand of approximately 30 MW. One of the
31 measures used by utilities for electric capacity planning is the reserve margin. The reserve

1 margin is a simple calculation that measures the percentage amount that installed
2 generating resources are greater than the annual peak load. CUC's reserve margin on
3 Saipan is approximately 160%. By way of comparison, Hawaiian Electric Company's
4 reserve margin on Oahu is approximately 40% and on Singapore, while the planning reserve
5 margin is 30%, the actual reserve margin is approximately 48%.

6
7 Combined with CUC's substantial reserve margin, at least 9 of its large commercial
8 customers provide more than 90% of their annual electric requirements with their own
9 generation.

10
11 Based on review of data supplied by members of the Hotel Association of the Northern
12 Marianas Islands (HANMI) and the Saipan Facilities Management Association (SFMA), I
13 estimate the non-coincident peak demand of the 9 members of HANMI and SFMA who
14 expressed an interest in returning to CUC's grid under the Incentive Rate is approximately 6-
15 7 MW. Assuming all of those customers connect to CUC's grid and purchase all of their
16 electric requirements from CUC, CUC's revised peak demand would be approximately 37
17 MW and its reserve margin on Saipan would be 111%. This is more than adequate to meet
18 the electric requirements of CUC's customers.

19
20 **Exhibit Econ-1** presents CUC's 2014 peak demand, customer generated kWh, kWh
21 purchased from CUC and total customer kWh usage. Please note that because 5 of the 9
22 customers' information are based on estimates, the data in the table will be revised as
23 additional data is received.

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Exhibit Econ-1

COMMONWEALTH UTILITIES CORPORATION				
The CNMI's Not for Profit Utility				
Incentive Rate Analysis				
Calendar Year 2013				
E.1	E.2	E.3	E.4	E.5
Month	Peak Demand kW	Customer Generated kWh	Purchased from CUC kWh	Total Customer kWh
All or Substantially Self- Generating				
DFS				
Aqua Resort				
Laolao				
Hyatt				
Coral Ocean Point *				
World Resort*				
Rota Resort*				
Marianas Resort				
Kingfisher*				
Total	7,093	36,914,904	1,615,774	38,508,628

* indicates estimated value. Waiting for usage information from customer.

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- Q. If the Incentive Rate is adopted by the CPUC, how much additional revenue is forecast to be generated?**
- A. Assuming all nine of the customers agree to purchase power at the standby rate, CUC's Base Rate and Customer Charge revenue is forecast to increase by approximately \$1.5 million annually. Total revenue increase including the LEAC will be approximately \$12.7 million. **Exhibit Econ-2** presents summary information for CUC's test year 2013 usage and revenue for the Residential, Commercial, Government and Incentive customers.

Exhibit Econ-2

COMMONWEALTH UTILITIES CORPORATION									
The CNMI's Not for Profit Utility									
Large Commercial Customer Revenue Analysis									
Revenue from Rates in Effect with Jan 2014 LEAC									
E.1	E.2	E.3		E.4	E.5	E.6	E.7	E.8	E.9
Customer Class	Annual Bills	Cust. Charge	Cust. Chg. Revenue	kWh Sales	Base Rate	Base Rate Revenue	LEAC	LEAC Revenue	Total Rate Revenue
Residential	127,980	\$7.00	\$895,860	49,211,014	(Varies)	\$2,681,971	0.30426	\$14,972,943	\$18,550,774
Commercial	43,237	\$10.00	\$432,370	112,125,275	0.1130	\$12,670,156	0.30426	\$34,115,236	\$47,217,762
Government	14,878	\$10.00	\$148,780	37,271,164	0.1240	\$4,621,624	0.30426	\$11,340,124	\$16,110,529
Total	186,095		\$1,477,010	198,607,453		\$19,973,751		\$60,428,304	\$81,879,065

13

1 **Exhibit Econ-3** presents the same information with Incentive Rate usage and revenue information
 2 added. Note that total kWh sales are projected to increase by approximately 18% if all nine
 3 customers identified in table Econ-1 participate in CUC's Incentive Rate.

4 Exhibit Econ-3

COMMONWEALTH UTILITIES CORPORATION									
The CNMI's Not for Profit Utility									
Large Commercial Customer Revenue Analysis									
Revenue from Rates in Effect with Jan 2014 LEAC and Incentive Base Rate of 5 cents/kWh									
E.1	E.2	E.3		E.4	E.5	E.6	E.7	E.8	E.9
Customer Class	Annual Bills	Cust. Charge	Cust. Chg. Revenue	kWh Sales	Base Rate	Base Rate Revenue	LEAC	LEAC Revenue	Total Rate Revenue
Residential	127,980	\$7.00	\$895,860	49,211,014	(Varies)	\$2,681,971	0.30426	\$14,972,943	\$18,550,774
Commercial	43,237	\$10.00	\$432,370	112,125,275	0.1130	\$12,670,156	0.30426	\$34,115,236	\$47,217,762
Incentive Rate	108	\$10.00	\$1,080	36,914,904	0.0400	\$1,476,596	0.30426	\$11,231,729	\$12,709,405
Government	14,878	\$10.00	\$148,780	37,271,164	0.1240	\$4,621,624	0.30426	\$11,340,124	\$16,110,529
Total	186,203		\$1,478,090	235,522,357		\$21,450,348		\$71,660,032	\$94,588,470

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7 **Q. Will rates to Other CUC customers increase if the CPUC adopts CUC's proposed**
8 **Incentive Rate?**

9 A. No they will not. CUC's proposed Incentive Rate will not increase the rates of other
10 customers. Base Rate and Customer Charge revenue will help offset the loss of \$2.5 million
11 in projected revenue from CUC's proposed Standby Charge, which CUC withdrew from
12 consideration on April 15, 2014. CUC has chosen to forego asking its customers for a rate
13 increase to cover the Standby Charge revenue shortfall at this time.

14
15 **Incentive Rate Development Background**

16
17 **Q. Please explain the Development of CUC's proposed Incentive Rate.**

18 A. Shortly after March 13, 2014, when the SFMA filed their letter opposing CUC's proposed
19 Standby Charge, I began a series of meetings with members of SFMA and later HANMI both
20 in groups and individually. The purpose of these meetings was to discuss their opposition to
21 the Standby Charge and explore options that would lead to customers that self-generate all
22 or most of their electric requirements to purchase all of their electricity from CUC. The key
23 criteria in the discussions that any new rate would have to generate additional revenue for
24 CUC that would come close to offsetting the \$2.5 million reduction in Standby Charge
25 revenue. After numerous meetings exploring various rate options, the discussion focused on
26 development of a special incentive rate that would apply only to those customers who

1 generate 90% or more of their annual electrical requirements. The incentive rate would have
 2 to be low enough so that it would be close to self-generating customers' cost of generating
 3 power, yet still provide CUC with enough additional revenues to replace a significant portion
 4 of the projected revenue lost from the proposed Standby Charge. Because I did not have
 5 detailed usage information for all of the SFMA and HANMI members at the start of
 6 discussions, I sent them a form requesting detailed monthly usage information for the last
 7 two years. That request is shown as Exhibit Econ-4.

8 Exhibit Econ-4

COMMONWEALTH UTILITIES CORPORATION THE CNMI'S NOT FOR PROFIT UTILITY LARGE COMMERCIAL CUSTOMER DATA REQUEST					
E.1	E.2	E.3	E.4	E.5	E.6
Month	Facility Peak kW	Fuel Use Gallons	Facility kWh	CUC Purchased kWh	Total kWh
Jan-12					
Feb-12					
Mar-12					
Apr-12					
May-12					
Jun-12					
Jul-12					
Aug-12					
Sep-12					
Oct-12					
Nov-12					
Dec-12					
2012 Total					
Jan-13					
Feb-13					
Mar-13					
Apr-13					
May-13					
Jun-13					
Jul-13					
Aug-13					
Sep-13					
Oct-13					
Nov-13					
Dec-13					
2013 Total					

9
 10 To date, data was received from 7 customers. I am still waiting for data from the remaining 5
 11 customers.

12
 13 **Q. You mentioned above that the Incentive Rate needed to be close to the self-generating**
 14 **customers' cost of producing power. How did you determine the power costs of self-**
 15 **generating customers?**

16 **A.** Based on the information contained in the surveys returned by SFMA and HANMI members
 17 and general knowledge of diesel engines used typically by hotels and golf courses for power
 18 production, I estimate that the fuel efficiency of the SFMA and HANMI engines is between 12
 19 and 14.5 kWh per gallon of diesel fuel. Most of the SFMA and HANMI members purchase
 20 diesel where the cost varies monthly based on the Mean of Platts Singapore (MOPS) price
 21 plus transportation and taxes. SFMA and HANMI members indicated during my discussions

with them that \$4.25 per gallon is a represents a good proxy for their diesel cost. Some pay a lower amount due to the large quantities they purchase. The cost per kWh can be determined by dividing the cost of fuel by the engine efficiency.

Exhibit Econ-5 presents the cost of producing electricity for a range of engine efficiencies and fuel prices that provides a rough idea of their cost per kWh of generating electricity.

Exhibit Econ-5

COMMONWEALTH UTILITIES CORPORATION						
The CNMI's Not for Profit Utility						
Commercial Customer Cost of Generating Electricity						
E.1	E.2	E.3	E.4	E.5	E.6	E.7
Engine Efficiency	Fuel Cost	Electricity Production Cost	Fuel Cost	Electricity Production Cost	Fuel Cost	Electricity Production Cost
(kWh per gallon)	(\$ per gallon)	(cents per kWh)	(\$ per gallon)	(cents per kWh)	(\$ per gallon)	(cents per kWh)
12	4.00	33.3	4.25	35.4	4.50	37.5
12.5	4.00	32.0	4.25	34.0	4.50	36.0
13	4.00	30.8	4.25	32.7	4.50	34.6
13.5	4.00	29.6	4.25	31.5	4.50	33.3
14	4.00	28.6	4.25	30.4	4.50	32.1
14.5	4.00	27.6	4.25	29.3	4.50	31.0

The fuel cost per kWh of producing electricity for SFMA and HANMI members varies between 27.5 cents per kWh and 37.5 cents per kWh depending on the cost of fuel and the efficiency of the diesel engines. Other costs include the cost of labor to operate and maintain the engines and related facilities, engine and facility maintenance and capital recovery. However, a SFMA and HANMI member's marginal fuel cost is also influenced by their decisions regarding engine maintenance and keeping staff on hand for emergencies such as typhoons or CUC engine problems. Based on the information contained in **Exhibit Econ-4**, I realized during the discussions that any effective incentive rate would have to result in a total cost of power between 33 cents per kWh and 34 cents per kWh.

I then had a series of discussions with SFMA and HANMI members individually and in groups to determine if a rate of 33 to 34 cents per kWh would encourage them to purchase all of their electricity from CUC. With the exception of one hotel that invested a significant amount of money to capture waste heat from the diesel engines to increase the effective

1 efficiency of the engines and lower the effective cost per kWh of producing electricity, all
2 either said yes or would consider strongly returning to CUC. Discussions continue with
3 SFMA and HANMI members and I hope to have a more definitive count of the customers
4 that would purchase power from CUC and better information on the estimated kWh
5 purchases before the May hearings.
6
7

8 **Q. Is this a 'good deal' for members of SFMA and HANMI that decide to purchase all of**
9 **electricity from CUC under the Incentive Rate?**

10 A. Based on the data contained in Exhibit Econ-5, and confirmed in discussions with individual
11 SMFA and HANMI members, I believe that it will result in savings for some members and a
12 cost increase for others, which tells me that the Incentive Rate is reasonable. I would like to
13 add that for most if not all of the self-generating members of the SFMA and HANMI, the
14 decision to purchase all of their electricity from CUC is difficult and risky.

15
16 They are taking a risk that CUC will be able to continue to provide reliable power when CUC
17 is suffering under severe cash flow problems due to high accounts receivable balances from
18 certain CNMI government entities and delays in approving rate adjustments by the CPUC.
19 However, they are willing to take this risk because a strong and well managed utility is a key
20 requirement to maintaining the tourist experience in the CNMI. The SMFA and HANMI
21 members are willing to make a commitment to help CUC return to financial health by
22 returning to the CUC grid.
23

24 **Q. Are Incentive rates common in US Mainland electric utilities?**

25 A. Yes they are. A simple internet search will reveal dozens of incentive rates or economic
26 development rates as they are also called. Some of the incentive rates are designed to
27 attract new customers, others to keep existing customers from leaving, still others to restart
28 production at factories where standard electric rates were too high to justify restarting.
29

30 **Q. Why do US Mainland Electric Utilities offer incentive rates?**

1 A. The reasons electric utilities propose incentive rates and their regulatory commissions
2 approve them are varied, but they all center on trying to maximize the economic value of
3 existing surplus generation capacity. CUC is in a similar situation. CUC has a large amount
4 of idle generation and as long as the incentive rate contributes to the fixed cost of operating
5 the system, it is an easy decision to offer an incentive rate.
6

7 **Q. Are there other reasons for CUC to offer the proposed Incentive Rate?**

8 A. Yes, it shows the companies that are considering building new hotels in the CNMI that
9 almost all of the existing hotels and other large businesses that serve the CNMI's tourism
10 industry made a choice to purchase from CUC for rational economic reasons. This sends a
11 strong signal to those customers to connect to CUC's grid.
12

13 Another reason to support adoption of the Incentive rate is that with a larger generation base,
14 CUC's IRP may find that new more efficient and lower cost generation alternatives are
15 economic with 235 million kWh in annual sales as opposed to the current 200 million kWh.
16

17 CUC also desperately needs the additional revenue from the incentive rate to help repair the
18 distribution which has taken the brunt of the cash shortfall caused by high government
19 accounts receivable balance and delays in approval of CUC rates by the CPUC.
20

21 **Q. In closing, we have a couple of housekeeping questions. Did you prepare this
22 testimony and exhibits, or were they prepared under your supervision and control?**

23 A. Yes.
24

25 **Q. Are the statements in your testimony true and correct to the best of your knowledge,
26 information and belief?**

27 A. Yes.
28

29 **Q. If you were testifying live, under oath, today, would you say what appears in this, your
30 prefiled testimony filing?**

31 A. Yes.

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Q. Does this conclude your prefiled testimony?

A. Yes it does. However, I reserve the right to make any necessary adjustments during the course of these proceedings.

DECLARATION

The proceeding prefiled testimony, and the exhibits referred to therein, are true and correct to the best of my knowledge, information and belief. Signed under penalty of perjury.



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April 24, 2014