
FAIR TRADING COMMISSION

BARBADOS

FTCUR/MTNDEC2014-03

FAIR TRADING COMMISSION

IN THE MATTER of the Fair Trading Commission Act, CAP. 326B of the Laws of Barbados;

AND IN THE MATTER of the Utilities Regulation Act, CAP. 282 of the Laws of Barbados;

AND IN THE MATTER of the Utilities Regulation (Procedural) Rules, 2003 and the Utilities Regulation (Procedural) (Amendment) Rules, 2009;

AND IN THE MATTER of the Application by the Barbados Light & Power Company Limited for a Motion for review of the Renewable Energy Rider Decision of the Fair Trading Commission dated the 8th day of August, 2013.

BEFORE:

Sir Neville Nicholls
Dr. Philmore Alleyne
Mr. Andrew Brathwaite
Mr. Gregory Hazzard
Mr. Andrew Willoughby

Chairman
Commissioner
Commissioner
Commissioner
Commissioner

DECISION

PART ONE - BACKGROUND

1. In March 2010 the Fair Trading Commission (Commission), being satisfied with the conditions of the Renewable Energy Rider (RER) pilot programme as proposed by the Barbados Light & Power Company Limited (Applicant), granted approval for the use of the RER programme on a pilot basis for a period of two (2) years.
2. The RER programme was developed by the Applicant as a scheme to facilitate the sale to the grid of surplus electricity generated from customers' distributed Renewable Energy (RE) systems.
3. At the end of the pilot, the Applicant applied to the Commission for the permanent implementation of the RER programme with amended terms and conditions.
4. After a Public Consultation on the RER programme, the Commission issued its RER Decision dated August 8, 2013 (RER Decision).

Application for a Motion for review

5. The Applicant, by Notice of Motion dated and filed on December 3, 2013, applied for a review and variation of the RER Decision pursuant to Section 25 of the Utilities Regulation Act (URA) CAP. 282 of the Laws of Barbados and Section 36 of the Fair Trading Commission Act (FTCA) CAP. 326B of the Laws of Barbados.
6. The Applicant also sought an order staying the RER Decision until final determination of the Motion. A Stay of the RER Decision was granted by the Commission on January 24, 2014.
7. The Applicant in its Motion requested that the Commission review and vary the RER Decision as it relates to the requirement to use the "sale of excess"

billing arrangement for all RER customers and the disallowance of the Alternative Meter Configuration 2.

8. The Applicant stated that it considered the “buy all/sell all” arrangement to be the preferred option to the “sale of excess” arrangement. However, it invited the Commission when making its decision to consider two (2) Options.
9. The two (2) Options that the Applicant requested the Commission to consider in reviewing its RER Decision are:

Option 1

“... all customers with renewable generating systems up to 2kW should have the option to choose their preferred billing arrangement and all customers with renewable generating systems above 2kW will be billed under the “buy all/sell all” arrangement.”

Option 2

“... all customers should be given the flexibility to select their preferred billing arrangement (buy all/sell all or sale of excess).”

10. The Applicant further stated that should the Commission implement Option 2 or continue with its present decision to implement “sale of excess” for all customers, then the Applicant should be granted leave to apply for an adjusted customer charge for all customers that are to be billed under the “sale of excess” billing arrangement. The Applicant stated that the adjusted customer charge that is applicable to “sale of excess” customers will incorporate the costs to provide back-up service to these customers.

The Billing Arrangements and Metering Systems

11. The “sale of excess” and the “buy all/sell all” arrangements are billing mechanisms used by the Applicant for RER customers. Electricity generated

up to 1.5 times the customer's average monthly electricity consumption, is compensated on a kilowatt-hour (kWh) basis, and paid by the Applicant using the RER credit of 1.6 times the monthly Fuel Clause Adjustment (FCA) (hereinafter referred to as RER credit rate). Any electricity generated and fed to the grid in excess of this amount is compensated at the monthly FCA rate. **(see Appendix for further information on the billing and metering options)**

12. Under the "sale of excess" billing arrangement, an RER customer is billed at the normal rate for what he uses from the grid and is credited for the excess electricity that he sells to the grid (i.e. the electricity generated from his RE system that he did not use).
13. Under the "buy all/sell all" billing arrangement the customer is billed for all the energy consumed, regardless of the source, at the normal electricity rate, and credited for all the electricity generated from the RE system at the RER credit rate.
14. An RER customer that selects the "buy all/sell all" billing arrangement can use either Meter Configuration 1 or Meter Configuration 2. The term "buy all" relates to the total electricity consumed by the customer, that is, the electricity supplied from the grid in addition to the electricity that is supplied from the customer's RE system. The term "sell all" relates to the total amount of electricity generated from the customer's RE system.
15. With Meter Configuration 1, two (2) meters are installed on the RER customer's premises. One meter measures the output of the RER customer's generating system, while the other meter, a bi-directional meter, measures the electricity supplied from the grid to the customer and the electricity fed to the grid from the customer's RE system. A customer who selects the "sale of excess" billing arrangement must use Meter Configuration 1.

16. Meter Configuration 2 also has two meters, but neither of them is bi-directional. One meter measures the total electricity generated from the customer's RE generating system. The other measures the total electricity consumed by the customer, whether from the customer's RE system or the grid. Meter Configuration 2 cannot be used with the "sale of excess" arrangement because the readings from the meters in this configuration do not allow the calculation of the excess electricity that is fed to the grid from the RE system.

The Parties to the Hearing

17. The persons involved in the 2012 RER Public Consultation were invited to participate in the Motion for review of the RER Decision.
18. These persons were invited to inform the Commission whether they were interested in participating in the review hearing on the billing and metering arrangements of the RER Decision only, as these were the two (2) issues raised in the Motion filed by the Applicant.
19. The Commission received letters of interest from the following persons: CARITEL; Sir Allan Fields; Mr. Dick Stoute; Williams Industries Inc; the Barbados Renewable Energy Association (BREA); Mr. Aidan Rogers; Solar Watt Systems Inc. and Mr. John Hayward (all hereinafter referred to as the Parties).
20. On March 31st 2014, the Commission received written submissions from: CARITEL; Sir Allan Fields; Mr. Dick Stoute; Williams Industries Inc; BREA and Mr. Aidan Rogers.
21. No written submissions were received from Solar Watt Systems Inc. or Mr. John Hayward.

22. All written submissions received were circulated among the Parties and the Applicant. The Applicant was given an opportunity to respond to these submissions and the Commission's interrogatories. The Commission's interrogatories and the Applicant's responses to the same were also circulated among the Parties.

Legislative Framework

23. By virtue of Section 36 of the FTCA and Rule 53 of the Utilities Regulation (Procedural) Rules (URPR) Statutory Instrument 2003 No. 104 of the Laws of Barbados, the Commission has jurisdiction on an application from a party or on its own motion to review, vary or rescind any decision given by it. In instances where the Commission allows a review, the process is prescribed by the Rules. The Commission's power to review and vary or rescind a decision or order is exercised in accordance with due process.
24. Under the FTCA, the authority of the Commission to allow a review is discretionary. An applicant must first demonstrate, on a *prima facie* basis, the existence of the permissible grounds of review - the *threshold question*.
25. Rule 54 (1) of the URPR sets out specific grounds on which the Commission can review a decision made in a utility regulation proceeding. Rule 54 (1) of the URPR states that:
- "(1) Every Notice of Motion made under Rule 53 (2), in addition to the requirements of Rule 8 shall*
- (a) Set out the grounds upon which the motion is made sufficient to justify a review or raise a question as to the correctness of the order or decision and the grounds may include*
 - (i) error of law or jurisdiction;*
 - (ii) error of fact;*
 - (iii) a change in circumstances;*
 - (iv) new facts that have arisen;*

- (v) *facts that were not previously placed in evidence in the proceedings and could not have been discovered by reasonable diligence at the time;*
- (vi) *an important matter of principle that has been raised by the order or decision;"*

26. In the Motion for review, the Applicant relied on Rule 54 (1) (a) (vi) *"an important matter of principle that has been raised by the order or decision"* as the ground for review.

27. The URPR further stipulates that the Commission must determine the threshold question with a hearing. Rule 55 (1) of the URPR states that:

"(1) The Commission shall determine with a hearing, in respect of a motion brought under rule 53 the threshold question of whether the matter should be reviewed or whether there is reason to believe the order should be rescinded or varied."

28. In accordance with Rule 55 (3) of the URPR the Commission decided that it would hold a consolidated hearing by combining the consideration of the threshold question and the review on the merits. Rule 55 (3) of the URPR states that:

"(3) The Commission may adopt whatever procedures it deems to be just and expeditious in the individual circumstances of each motion including providing for the combining of consideration of the threshold question and the review on the merits."

29. Pursuant to Rule 37 (1) and (2) of the URPR, the Commission further determined that the review proceeding should be disposed of by way of a written hearing. Rule 37 (1) and (2) of the URPR state that:

(1) The Commission may hold a written hearing.

(2) Where the Commission holds a written hearing, it may dispose of the proceeding on the basis of the written documentation filed by the parties.

Burden of Proof

30. By virtue of section 133 of the Evidence Act, CAP. 121 the onus rests on the Applicant to prove its case in this review proceeding.

The Doctrine of “Res Judicata”

31. The issue of *res judicata* was raised by Mr. Aidan Rogers and BREA in their written submissions on the Motion for review. The doctrine of *res judicata* prohibits the re-litigation of an issue that has already been conclusively determined by a judicial or quasi-judicial body as well as an issue which could and/or should have been included in the earlier matter but was not included.
32. Under the Commission’s legislative framework an Applicant may apply for a review of a Decision on the ground of Rule 54 (1) (a) (vi) of the URPR “*an important matter of principle that has been raised by the order or decision*”. In effect, this rule allows a party to request that the Commission reconsider its Decision where an important matter of principle arose although it may concern an issue which was previously determined by the Commission.
33. **Therefore, the Commission disagreed with the arguments raised by Mr. Rogers and BREA and determined that the doctrine of *res judicata* does not apply.**

PART TWO - THE THRESHOLD QUESTION

34. In determining the threshold question, the Commission considered whether the Applicant demonstrated on a *prima facie* basis that an important matter of principle had been raised by the RER Decision. Therefore the burden of proving a *prima facie* case rests on the Applicant who must set out the grounds in its Notice of Motion to justify a review of the RER Decision.
35. The Commission, in determining whether the threshold question had been answered, considered the five (5) reasons submitted by the Applicant in support of its ground for review, Rule 54 (1) (a) (vi) - *“an important matter of principle that has been raised by the order or decision”*.
36. These reasons are as follows, that:
- a) *“The recommendation by the Applicant that customers be allowed to install systems that would produce up to 1.5 times their total usage and up to a maximum size of 150kW was made on the basis that the Commission would accept the “buy all/sell all” billing arrangement to replace the “sale of excess” arrangement;*
 - b) *The “sale of excess” billing arrangement will disadvantage the Company, its non-RER customers and RER customers who are billed on the Secondary Voltage Power and Large Power tariffs;*
 - c) *Under the “sale of excess” arrangement, the Applicant loses base revenue required to adequately cover the cost of serving RER customers;*
 - d) *Customers on the Secondary Voltage Power and Large Power tariffs will obtain reduced benefits under the “sale of excess” compared to the “buy all/sell all” billing arrangement.*
 - e) *The Commission’s determination to disallow the Alternate Meter Configuration 2 may result in a substantial increase in the installation cost to some RER customers”.*

37. The Commission further examined the submissions of Mr. Aidan Rogers and BREAs, which indicated that the Applicant did not meet the threshold question. The Commission also analysed CARITEL's submissions which stated that it saw no "new" important matter of principle being raised by the Applicant.
38. On examination of the issue of the threshold question and the Applicant's reasons set out above, the Commission notes that the Applicant applied for a review under Rule 54 (1) (a) (vi) of the URPR stating that "*an important matter of principle*" was raised by the RER Decision. The URPR does not require this matter of principle to be "new" only that it is "important". In fact Rule 54 (1) (a) (vi) of the URPR gives the Commission wide powers to review decisions where an Applicant raises an issue or matter of principle which was considered previously once the issue or matter of principle is of a material or important nature.
39. The reasons set out by the Applicant and the arguments used to support the same were analysed by the Commission. The Commission is of the view that the potential impact on the Secondary Voltage Power (SVP), Large Power (LP) RER customers and non-RER customers as a result of the implementation of the "sale of excess" billing arrangement is an important matter of principle raised by the RER Decision which must be considered and addressed by the Commission in this Motion for review.
40. **As a result of the foregoing, the Commission determined that the Applicant met the threshold question and that a *prima facie* case exists.**

PART THREE - ANALYSIS OF THE APPLICANT'S SUBMISSIONS

41. In its analysis, the Commission took into consideration the submissions received from the Applicant (which included its Motion for review and responses to questions) and the submissions of the Parties.
42. The Applicant proposed a change in the principle determined in the RER Decision as it relates to the billing and metering arrangement for RER customers. In determining whether to vary the RER Decision, the Commission examined and analysed the factors highlighted at paragraph 23(a) - (l) as well as the considerations of the Options set out at paragraphs 21, 22 and 24 (v) of the Applicant's Motion for review.

Applicant's Submission at paragraph 23 (a)

- a) *Customers' consumption from the grid will be the same under both the "buy all/sell all" and the "sale of excess" arrangements Alternative for Meter Configuration 1. The "buy all/sell all" arrangement will still allow customers to benefit from reduced direct consumption from the grid. Customers will also obtain a benefit of a credit for all the RE generation they consume internally.*

Commission's Comment

43. With both billing arrangements, the customer's internal demand is typically satisfied before electricity is sent to the grid. Any additional demand, not supplied by his RE system, is then obtained from the grid. Regardless of the billing arrangement selected by a customer, the usage is the same but the amount billed is different.
44. The Commission notes that under the "buy all/sell all" arrangement Domestic RER customers will be billed for a greater amount of electricity than those customers that use the "sale of excess" arrangement. However, when

the credit from the sale of electricity generated by the RE system is taken into consideration the difference in the net amount billed is marginal.

Table 1: Financial Impact on Residential RER Customers

	Example 1		Example 2		Example 3	
	Sale of Excess	Buy All, Sell All	Sale of Excess	Buy All, Sell All	Sale of Excess	Buy All, Sell All
Renewable Capacity	1 kW	1kW	2kW	2kW	4kW	4kW
RE Generator Production	150 kWh	150 kWh	300 kWh	300 kWh	600 kWh	600 kWh
Internal Usage from RE Generator	40 kWh	40 kWh	140 kWh	140 kWh	280 kWh	280 kWh
Internal Consumption from Grid	60 kWh	60 kWh	210 kWh	210 kWh	360 kWh	360 kWh
Usage Billed	60 kWh	100 kWh	210 kWh	350 kWh	420 kWh	700 kWh
Sale of Energy Credited at RER	110 kWh	150 kWh	160 kWh	300 kWh	320 kWh	600 kWh
*Customer's Net Bill	(\$26.20)	(\$26.21)	\$46.75	\$50.99	\$86.34	\$105.15

Source: Barbados Light & Power Company Limited Responses received on May 23, 2014

*Customer's Net Bill Calculated at the Fuel Clause Adjustment for April 2014.

Applicant's Submission at Paragraph 23 (b) (c) and (i)

- b) *The "sale of excess" does offer the possible benefit of reclassification into a lower tariff tier. However, that benefit comes at a cost to the Applicant and to non-RER customers because under the "sale of excess" arrangement the RER customer will not contribute their fair share of the cost of being a customer on the grid.*

- c) *The base revenue, obtained through the customer charge and energy charge components of the bill, is established to cover the costs associated with being a customer on the grid. These costs are not reduced when a customer installs a grid-tied RE system, but rather increase given the higher administrative cost associated with the RER programme. The reduced base revenue under the "sale of excess" arrangement represents a further subsidy to RER customers at the expense of non-participating customers.*

- i) *Most of the costs associated with providing the electric service (metering, billing, customer service, poles, wires, etc.) are fixed in nature but are largely recovered through volumetric charges. The “sale of excess” arrangement allows customers to curtail their consumption from the grid but provides no mechanism for the Applicant to recover the fixed costs associated with having the RER customer connected to the grid;*

Commission’s Comment

45. It is agreed that with the “sale of excess” arrangement the RER customer may not make a full contribution to base revenue. This is because base revenue is recovered through volumetric charges¹, which are based on the amount of kWh used. Under the “sale of excess” arrangement, customers in the Domestic/General Service classes will show lower usage and benefit by being afforded lower charges. This may be considered a subsidy to customers who are on the “sale of excess” billing arrangement.
46. In the above situation, the customer’s contribution to the fixed cost is reduced because of the lower usage, but the company is still required to maintain facilities to service these customers and continues to incur costs in doing so. This reduction in contribution to base revenue from RER customers therefore impacts the amount the Applicant recovers and eventually the Applicant may seek to recover the same from non-RER customers and/or directly from RER customers. The Applicant can seek to recover base revenue only by making an application to the Commission for a rate review.
47. In addition to the loss in base revenue the Commission agrees that neither of the billing options recover the increased administrative costs associated with the RER programme.

¹ Volumetric Charges include the following: energy charges (operation and maintenance costs) and demand charges (costs associated with generation, transmission and distribution, substations, transformers etc. required to meet peak demand).

Applicant's Submission at Paragraph 23 (d)

d) Customers under both the "buy all/sell all" and the "sale of excess" arrangements will enjoy the same level of independence from the national grid. The typical grid-tied system which customers are presently installing is designed to shut down when the power fails, resulting in a total loss of supply to the customer's premises irrespective of the billing arrangement. Customers can install a bimodal inverter or batteries to increase their independence from the national grid with both billing arrangements.

Commission's Comment

48. Some of the Parties contend that the "buy all/sell all" arrangement denies customers the right to use their investment in the way they prefer and view the insistence on "buy all/sell all" as a method of reducing competition.
49. The Commission notes that by investing in RE systems customers may expect a level of independence from the grid, that is, being able to have electricity when there is failure at the grid.
50. The Commission is satisfied that the level of independence is however unrelated to the billing or metering arrangement since either would facilitate independence from the grid with the use of a bimodal inverter and batteries.

Applicant's Submission at Paragraph 23 (e)

e) The Applicant recommended that customers be allowed to install systems that would produce up to 1.5 times their total usage and up to a maximum size of 150kW, on the basis that the Commission would accept the "buy all, sell all" billing arrangement;

Commission's Comment

51. Having reviewed the original submissions made by the Applicant in 2012, the Commission finds that the Applicant did not link its proposed increased capacity that consumers were allowed to install with the “buy all/sell all” billing arrangement.

Applicant’s Submission at Paragraph 23 (f) and (g)

- f) *The “buy all/sell all” arrangement removes any adverse impact the RER programme will have on the Applicant and the non-participating customers. The Applicant has determined that the Decision to allow the “sale of excess” billing arrangement will not only disadvantage the Applicant but its non-RER customers and the RER customers who are on the Secondary Voltage Power and Large Power tariffs;*
- g) *The Applicant acknowledges that the benefits obtained from the “buy all/sell all” arrangement are slightly less for residential customers than under the “sale of excess” arrangement. However, for every kWh produced by the renewable systems that is consumed internally under the “sale of excess” arrangement, the Applicant loses the base revenue required to adequately cover the cost of serving these RER customers. Consequently, there will be a loss to the Applicant in the short term and, in the longer term, will be subsidized by non-RER customers as additional revenues will be required through a future rate adjustment to cover the cost of the Applicant providing a back-up service to these customers;*

In supplemental submissions, the Applicant projected that if all 7MW were billed using the “sale of excess” arrangement, and assuming Domestic, Employees and General Service class customers internally consume 60% of the electricity generated from their RE systems, whereas LP and SVP consume 100% internally, the Applicant would lose base revenue of \$2.3 million per year.

Commission’s Comment

52. It is acknowledged that under the “sale of excess” arrangement the customer is billed for less electricity than under the “buy all/sell all” arrangement. As a result, the Applicant’s sales volume is reduced and the recovery of fixed cost through the Energy Charge, as set in the Rate Review Decision dated January 25, 2010, would be reduced. This is because the Energy Charge is a per kWh tariff so a reduction in the amount of electricity billed would result in a reduction in base revenue collected. However, the Applicant’s fixed costs of supplying the service, including back-up facilities, are the same under both billing arrangements.

Applicant’s Submission at Paragraph 23 (h)

- h) Electric regulation principles dictate that customers should pay for the cost of the services they receive from the electricity grid and not pay to provide services to other customers. This principle applies to the services provided to all customers including RER customers. The “sale of excess” arrangement however violates this principle because it does not ensure that RER customers contribute their fair share towards the maintenance of a reliable national grid;*

Commission’s Comment

53. The Commission notes that in general, regulatory principles hold that customers should pay the full cost for the services they receive. In practice, many jurisdictions, including Barbados, do not strictly adhere to these principles. In Barbados a cross subsidy exists between Domestic and SVP/LP customers.
54. Therefore the Commission is of the view that there are circumstances where reasonable cross subsidies may be justified.

Applicant’s Submission at Paragraph 23 (j)

- j) *The ability of RER customers to utilize the grid to buy and sell power increases the value these customers derive from being connected to the grid, however, under the “sale of excess” arrangement these customers do not make a fair contribution towards the fixed costs associated with being a grid-tied customer;*

Commission’s Comment

55. The Commission agrees that the “sale of excess” customers do not make a full contribution towards the fixed cost associated with being a grid-tied customer.

Applicant’s Submission at Paragraph 23 (k)

- k) *Under the “sale of excess” arrangement, participants in the Secondary Voltage Power and Large Power tariffs will obtain reduced benefits compared to the “buy all/sell all” arrangement and therefore will be disadvantaged by the Decision;*

Commission’s Comment

56. As stated previously SVP and LP customers with the same demand, system capacity and kWh production will benefit more financially from the RER programme under the “buy all/sell all” billing arrangement. This benefit accrues when SVP and LP RER customers are credited for all electricity produced by their RE systems at 1.6 times the FCA. These classes of customers reduce their consumption from the grid; however they are unlikely to produce sufficient on-site electricity from their renewable systems to meet or exceed their needs. This is because the SVP/LP customers typically use 100% of their electricity generated from their RE systems internally. Therefore, they will not typically receive any credit under the “sale of excess” billing arrangement.

Applicant's Submission at Paragraph 23 (l)

- l) *The determination in the Decision to disallow the Meter Configuration 2 arrangement may result in a substantial increase in the installation cost to those customers who desire to place a renewable system at a location on their property that is some distance away from their main supply but closer to an existing pole.*

Commission's Comment

57. The Commission agrees that the "sale of excess" arrangement can only be associated with Alternative Meter Configuration 1. However the decision to place an RE system some distance away from the main supply is discretionary and is not applicable to all RER customers.

Applicant's Submission at Paragraphs 21, 22 and 24 (v)

21 Option 1

"..... all customers with renewable generating systems up to 2kW should have the option to choose their preferred billing arrangement and all customers with renewable generating systems above 2kW will be billed under the "buy all/sell all" arrangement."

22 Option 2

"..... all customers should be given the flexibility to select their preferred billing arrangement (buy all/sell all or sale of excess)."

- 24 (v) *"In the event the Option 2 is chosen by the Commission or if the Commission continues to allow its present Decision of "sale of excess" arrangement to stand, that the Applicant respectfully is granted leave by the Commission to apply for an adjusted customer charge to be charged to all customers that select "sale of excess" as their preferred billing arrangement."*

Commission's Comment

58. The Commission notes that twenty-five percent (25%) of current Domestic RER customers have systems with capacity of 2kW or less. By allowing these customers to select their preferred billing arrangement as suggested in Option 1, the base revenue loss to the Applicant would be contained.
59. Option 2, as suggested by the Applicant offers customers the flexibility to select their preferred billing arrangement. However, at the time of issuance of the RER Decision more than seventy-five (75%) of RER customers opted for the "sale of excess" arrangement. Therefore, should this trend continue as the RER programme expands, it is envisaged that base revenue loss would be further compounded.
60. The Commission also considered another Option - allowing customers with RE system capacity up to 5kW to select their billing arrangement. The Commission notes that ninety-six percent (96%) of Domestic RER customers fall into this category. This means that should these customers select "sale of excess" over "buy all/sell all" arrangement the Applicant's base revenue loss would be substantially greater. Table 2 provides a schedule of the probable impact of the RER billing arrangement options on the Applicant's base revenue annually.

Table 2: Projected Base Revenue Loss

Tariff Groups	(BL&P's Preference) All "buy all/sell all"	(Option 1) Under 2kW open choice/Over 2kW "buy all/sell all"	(Option 2) Open choice to all	(Alternative Option) Under 5kW open choice/Over 5kW "buy all/sell all"
	\$			

		\$	\$	\$
Domestic Service	0	104,643	418,572	393,458
Employees	0	0	7,029	7,029
General Service	0	11,770	33,500	26,256
Large Power	0	0	0	0
Secondary Voltage Power	0	0	0	0
Total	\$0	\$116,413	\$459,101	\$426,743

Source: Barbados Light & Power Company Limited Responses received on May 16, 2014.

PART FOUR - CONSIDERATIONS

61. The two billing arrangements under review are the “sale of excess” and the “buy all/sell all” arrangements. These two arrangements differ primarily in the way that the electricity generated from the distributed RE system is billed to the RER customer. In the “sale of excess” arrangement, the amount of electricity (kWh) for which the customer is credited is less as only the portion that is fed to the grid is considered by the Applicant. However, under the “buy all/ sell all” approach the RER customer is credited for all the electricity generated by his RE system.

62. In coming to its Decision the Commission considered all the submissions made by the Applicant as well as the parties to this Motion and placed particular emphasis on the following key issues:

Financial Impact on RER Customers

63. Residential RER customers are expected to realize a marginally greater financial benefit under the “sale of excess” arrangement as reductions are expected in the customer charge, energy charge and fuel charge components of their bills. This is so, even though the total RER credit received is less as evidenced in Table 1.

64. Secondary Voltage Power and Large Power customers realise a greater financial benefit under the “buy all/sell all” billing arrangement because such customers are credited for their entire RE generation at 1.6 times the FCA. Therefore, the application of the “sale of excess” billing arrangement across all customer groups restricts the financial benefit that could be achieved by SVP and LP customers. The use of the “sale of excess” billing arrangement among these categories of customers would mean that their RE systems would be used only to offset their electricity consumption from the grid as these customers typically use all their on-site RE generated electricity internally. Whereas, “buy all/sell all” offers the benefit of compensating for

all kWh generated at 1.6 times the FCA. Table 3 provides examples demonstrating the impact of the billing arrangements on the Applicant and on LP tariff customers.

Table 3: Large Power Tariff Customers Monthly Bill Examples

Assumptions	Example 1		Example 2		Example 3		Example 4	
KVA Demand	150		300		350		400	
PV Capacity	150		150		150		150	
PV kWh Production	22,500		22,500		22,500		22,500	
	Buy All/Sell All	Sale of Excess	Buy All/Sell All	Sale of Excess	Buy All/Sell All	Sale of Excess	Buy All/Sell All	Sale of Excess
kWh Purchased from Grid	90,000	67,500	190,000	167,500	200,000	177,500	290,000	267,500
kWh Sold to Grid	22,500	-	22,500	-	22,500	-	22,500	-
Customer's Gross Bill	\$51,930.00	\$39,847.50	\$108,930.00	\$96,847.50	\$115,400.00	\$103,317.50	\$164,830.00	\$152,747.50
RER Credit	\$15,120.00	-	\$15,120.00	-	\$15,120.00	-	\$15,120.00	-
Customer's Net Payment	<u>\$36,810.00</u>	<u>\$39,847.50</u>	<u>\$93,810.00</u>	<u>\$96,847.50</u>	<u>\$100,280.00</u>	<u>\$103,317.50</u>	<u>\$149,710.00</u>	<u>\$152,747.50</u>
Contribution to Utility's Base Revenue	<u>\$14,130.00</u>	<u>\$11,497.50</u>	<u>\$29,130.00</u>	<u>\$26,497.50</u>	<u>\$31,400.00</u>	<u>\$28,767.50</u>	<u>\$43,030.00</u>	<u>\$40,397.50</u>

Note: Calculations based on a FCA of \$0.42 and the RER Credit Factor of 1.6 times FCA

Source: Barbados Light & Power Company Limited Responses received on February 27, 2014

Loss in base revenue

65. The projected loss in base revenue to the Applicant, if all 7MW of installed capacity (which was the limit set in the RER Decision) is billed using the "sale of excess" arrangement, is approximately \$2.3 million (Table 4). This is because under the "sale of excess" arrangement not all of the fixed costs associated with generation and distribution are recovered due to reduced energy sales. However, under the "buy all/sell all" billing arrangement, the Applicant's sales volume is unaffected and its base revenue is not compromised.

Table 4: Revenue Loss Calculation

	Distribution Capacity (KW)	RE kWh consumed internally	Average Tariff (\$)	Estimated base revenue loss under Sale of excess (\$)
Domestic	2,013	2,174,311	0.1925	(418,572)
Employee	54	58,090	0.1210	(7,029)
GS	119	128,485	0.2607	(33,500)
LP	2,394	4,309,957	0.1808	(779,066)
SVP	2,420	4,355,233	0.2381	(1,036,915)
Totals	7,000	11,026,076		(2,275,082)

Source: Barbados Light & Power Company Limited Responses received on February 27, 2014.

66. The Commission considers that it is appropriate to seek to facilitate the uptake of RE by all classes of customers, where reasonable, while not compromising the Applicant's opportunity to recover its base revenue.

The Applicant's obligation to provide service to all of Barbados

67. The Commission considered the financial implications of the Applicant's obligation to provide service to all of Barbados.
68. This obligation requires the Applicant to have enough generating capacity and other necessary infrastructure to ensure that it is capable of supplying electricity to all of its customers when demanded. There is a cost associated with the provision and maintenance of such infrastructure. This cost is a legitimate cost and thus the Commission must provide the opportunity for the Applicant to recover it. This obligation requires the Applicant to have available back-up generation facilities in the event of a failure of its own generating plant as well as the distributed RE systems that are grid tied. "Sale of excess" RER customers do not fully contribute to the costs of having the Applicant's back-up facilities available but are however entitled to the benefit of continuous electricity service.

Facilitation of Distributed RE uptake

69. The Commission recognises that customers install RE systems in an effort to obtain some level of independence from grid supplied electricity and its attendant charges. Given this objective, the Commission is satisfied that none of the billing or metering options restricts the customer's ability to use their grid tied RE systems independent of the grid. Such independence in the event of a grid failure could be achieved, in either case, with the installation of a bimodal inverter and batteries.
70. The Commission considered the impact on customers of the Applicant's proposed capacity limit as expressed in Option 1 versus that of Option 2. Option 1 limits customers with RE system capacities over 2kW to the "buy all/sell all" billing arrangement. It also gives those customers with RE system capacities up to this 2kW threshold, the choice between the two billing arrangements. Option 2 offers all RER customers the flexibility to choose their billing arrangement regardless of their installed capacities. The Applicant's loss in base revenue, as shown in Table 2, is less under Option 1 than under Option 2.
71. The Commission notes that under the pilot programme, where customers were given the flexibility to choose their billing option, most chose "sale of excess". A continuation of this trend would disadvantage the Applicant and possibly non-RER customers.
72. In seeking to facilitate distributed RE generation the Commission has to be cognizant of the financial implications on both the customer and the Applicant. Some financial stimulus should be afforded customers particularly those satisfying basic energy needs while simultaneously ensuring that the Applicant is not financially disadvantaged, especially in light of the requirement to continue to provide back-up service.
73. Of the Options considered, this balance is best achieved under Option 1. Option 1 is more likely to contain the financial risk to the Applicant while concurrently offering customers with smaller RE systems (up to 2kW) the

flexibility to choose and the opportunity to enhance the financial benefit of their systems, albeit only marginally so, under the “sale of excess” billing arrangement.

PART FIVE - THE DECISION

74. In view of the preceding analysis and considerations, the Commission has determined that the terms and conditions relating to the billing arrangement and metering system in the RER Decision shall be varied as follows:

a. Billing Arrangement

- (i) All new Domestic/General Service and Employee RER customers with renewable generating systems with a capacity of 2kW and below will have the option to choose either the “sale of excess” or “buy all/sell all” billing arrangement. This choice of the selected billing arrangement will remain in place for the duration of the contract;
- (ii) All new Domestic/General Service and Employee RER customers with renewable generating systems above 2kW will be billed under the “buy all/sell all” billing arrangement;
- (iii) All new SVP and LP RER customers will be billed under the “buy all/sell all” billing arrangement;
- (iv) All existing RER customers may remain with their current billing arrangement or exercise the option, within three (3) months of the effective date of this Decision, to change from “sale of excess” to the “buy all/sell all” billing arrangement.

The term “*existing*” refers to RER customers who, before the effective date of this Decision, were connected to the Applicant’s Grid under an agreed billing arrangement.

b. Metering System

Meter Configurations 1 and 2 are both permitted. Meter Configuration 2 is however not available if the “sale of excess” billing arrangement is chosen.

75. The following terms and conditions of the RER Decision will remain applicable.

a. Value of Permanent RER Credit -

“The Commission has approved the RER credit of 1.6 times the FCA”;

b. Minimum Credit -

“The Commission has determined that no predetermined minimum credit shall apply”;

c. Capacity Limit -

“The national intermittent RE capacity should remain at 10% of peak demand, but the capacity limit for distributed intermittent RE generation should be increased to 7MW (from the proposed 5MW) as this will have minimal effect on the value of the RER credit but would provide for greater participation in the programme. The Commission is also of the view that 1MW of this additional intermittent RE capacity should be reserved for Domestic, Employee and General Service customers.

The individual customer capacity limit of 1.5 times the customer’s current average usage up to a maximum capacity of 150kW is accepted in view of the fact that the RER programme is intended for customers who have purchased the systems for their private use. This average usage is normally calculated based on the most recent 12 months that the customer relied on the grid. It must be noted that the RER credit at 1.6 times the FCA will only

be applicable to a maximum of 1.5 times the customer's average usage, thereafter RER customers will be reimbursed at 1 times the FCA";

d. RER Customer Reimbursement of Credit -

"The Applicant shall reimburse RER customers on a quarterly basis where the applicable credit is greater than or equal to \$100.00";

e. Contract Period -

"That RER customers shall be offered a contract for access to the grid for a minimum of 10 years. The value of the RER [credit] shall be subject to review every three years from the date of implementation of this Decision".

76. The Applicant is required to amend its RE Interconnection Agreement and the RE Power Purchase Agreement in accordance with the terms and conditions set out in the RER Decision as varied by this Decision on the Motion for review. The Applicant is also required to submit these amended Agreements to the Commission for approval on or before WEDNESDAY AUGUST 27th 2014.

77. This Decision shall be effective from MONDAY SEPTEMBER 1st, 2014.

OTHER MATTERS

Electric Light And Power Act 2013-21 - Licensing Requirements

78. Renewable Energy Rider customers are advised that the Electric Light & Power Act 2013-21, which is to be proclaimed, contains licensing requirements based on the capacity of RE installations.

APPENDIX

RER BILLING AND METERING OPTIONS EXPLAINED

1. Meter Configurations

The diagrams below show the physical connection of a grid-tied Renewable Energy system with the two Meter Configuration options.

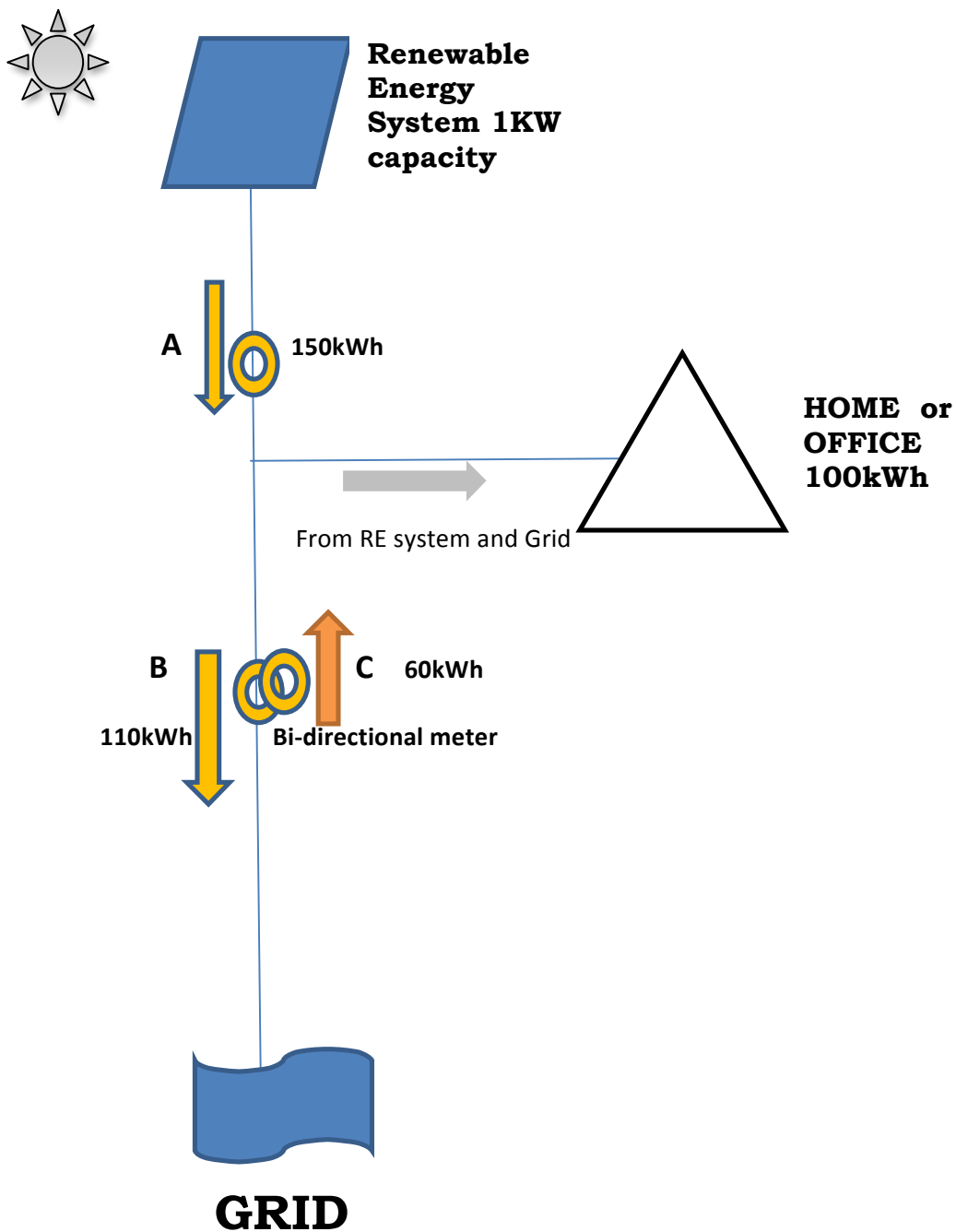


Figure 1: Meter Configuration 1

**Renewable
Energy
System 1KW
capacity**

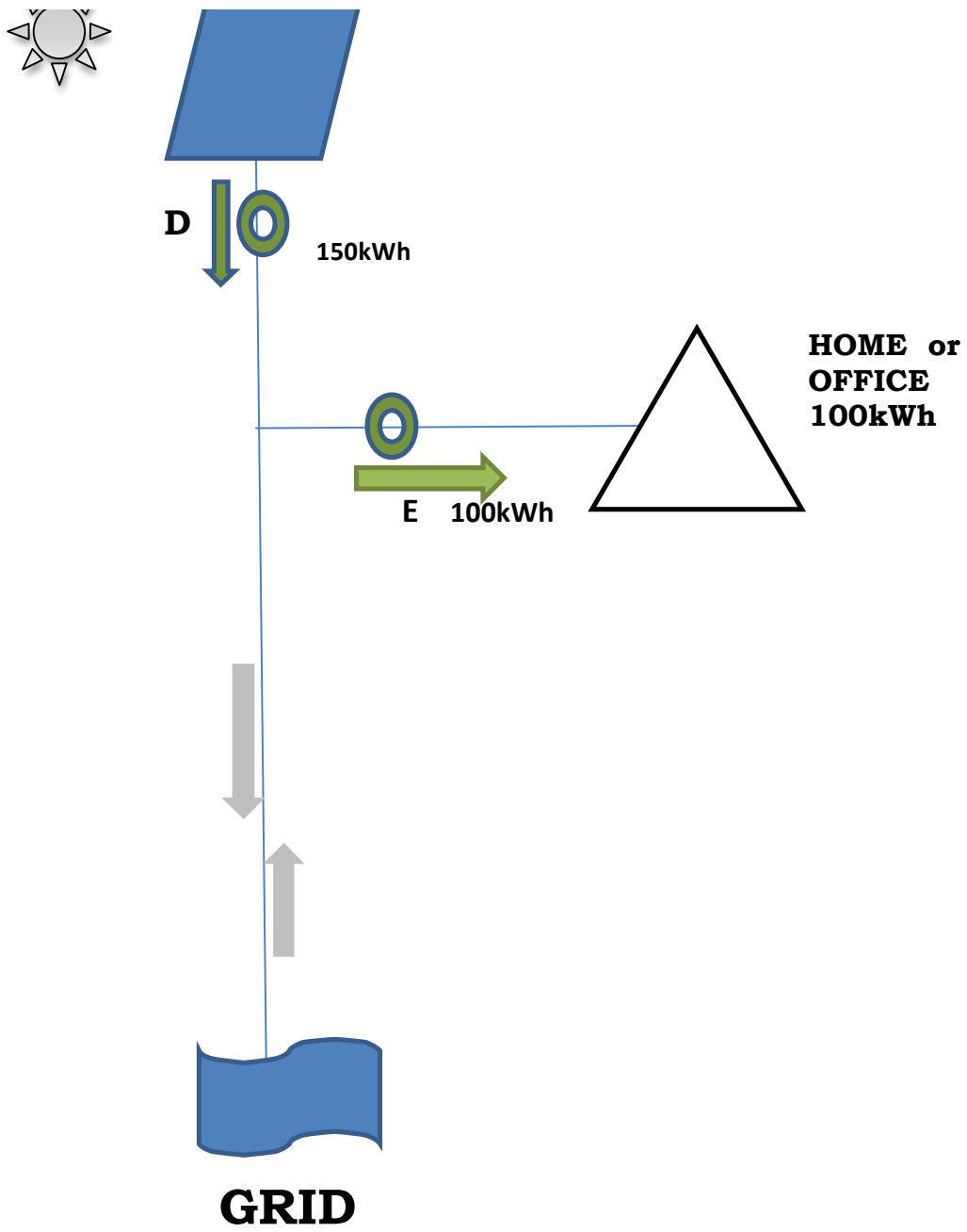


Figure 2: Meter Configuration 2

In both Meter Configuration options shown above the RE system feeds electricity to the customer and the Applicant's grid.

The meters used in Meter Configuration 1 give the following information:

- a. Electricity produced by RE system - meter A
- b. Electricity sent to the grid from the RE system - meter B
- c. Electricity obtained from the grid by the customer - meter C

The meters used in Meter Configuration 2 give the following information:

- d. Electricity produced by RE system - meter D
- e. Electricity consumed by the customer which comes from both the grid and the RE system - meter E

2. Billing Arrangements

2.1 *"Buy all/Sell all"*

The "buy all /sell all" billing option can be used with either Meter Configuration 1 or Meter Configuration 2.

Under Meter Configuration 1, the amount that is classified as "sell all" is the total amount of electricity generated from the customer's RE system and the RER credit is based on the electricity measured by meter A i.e. 150kWh. The amount that is classified as "buy all" is the total electricity consumed by the customer which is the electricity the customer gets from the grid (measured by meter C i.e. 60 kWh) plus the electricity that the customer gets from his RE system (this is based on the difference between the amount of electricity measured by meter A and the amount measured by meter B i.e. 110 kWh). So based on the example in Figure 1 the "buy all" figure would be $60 + (150 - 110)$ i.e. 100kWh.

Under Meter Configuration 2 in Figure 2, the amount that the customer buys from the grid - the "buy all" element - will be based on the electricity that is

measured by meter E (100kWh) and the amount that the customer sells to the grid at the RER credit – the “sell all” element - will be based on electricity that is measured by meter D (150kWh).

2.2 “Sale of Excess”

With Meter Configuration 1, under the “sale of excess” billing system, the electricity for which the customer receives the RER credit is measured by meter B (110kWh). The usage that the customer is billed for is based on the electricity passing through meter C (60kWh).

The reason that Meter Configuration 2 cannot be used for the billing option “sale of excess” is that the meters in that configuration only measure electricity produced by the RE system and electricity consumed by the customer. It is not possible, from these meter readings, to calculate the amount of excess electricity that is fed to the grid from the RE system.

In both Meter Configuration 1 and Meter Configuration 2 the customer receives electricity from his RE system. The billing options do not impact on how the electricity is fed to the customer.

3. Interpretation

The terms given to the two billing options may lead to the following incorrect interpretations.

- a. *Under “buy all/sell all” the customer is not consuming the RE electricity that he produces. **This is incorrect.*** The customer, as shown by the previous diagrams, is being fed by both his RE system and the grid.
- b. *Amount consumed by the customer does not always equal the amount billed by the Applicant- **This is correct.*** In the “sale of excess” billing option the amount billed as usage by the Applicant is what is purchased from the

grid only. In the “buy all /sell all” option the amount billed is what comes from the grid plus what is supplied from the customers RE system. In both cases the customer’s consumption is the same.

- c. *The amount of energy sold to the Applicant does not always equal the amount produced by the PV system. **This is correct.*** In the “sale of excess” billing option the amount sold to the Applicant is what is sent to the grid only. In the “buy all /sell all” option the amount sold to the Applicant is what is produced by the RE system. In both cases, the amount produced by the RE system is the same.

3.1 Residential customers

*If a residential customer has a system with capacity to produce 150kWh and he normally uses 100 kWh a month, the customer will be selling 50 kWh to the grid. **This would be correct for “buy all/sell all” but may be incorrect for “sale of excess”.*** The amount of electricity that goes specifically to the grid in “sale of excess” and the amount of electricity that goes specifically to the customer depends on a variety of factors including the time of day and the profile of the electricity demand of the customer. So, as shown by the following two examples, it is not a straight forward calculation:

- a. The Applicant estimates that, based on current information, residential customers consume about 60% of the electricity that their RE systems produce so a customer with a 150kWh system may be using 90 kWh, be billed for the extra 10kWh that he needs from the grid and selling 60 kWh to the grid.
- b. Using another scenario, if for example, 70 kWh of the 100 kWh consumed by this same customer is used at night, cooking, pressing air conditioner, etc., then the customer would get that electricity from the grid and be billed for the 70kWh. In this case the customer would only use 30 kWh

from his RE system and therefore get the RER credit for 120 kWh that he sells to the grid.

3.2 *Commercial customers*

Commercial customers differ from residential customers in the following ways:

- a. 100% of the electricity produced by the RE system is generally used by the customer so there is no excess electricity to sell to the grid.
- b. Under the “sale of excess” billing option, the commercial customer will not generally receive any RER credit but will pay a reduced electricity bill.
- c. With the “buy all /sell all” billing option, however, the customer will receive the RER credit based on the electricity that is produced by the RE system and will pay the Applicant for the electricity consumed (this would be the electricity produced by the RE system plus the electricity purchased from the grid).
- d. In most cases, all of the commercial customer’s demand is in the day and the capacity of the RE system (which has a limit of 150kW) is less than what would be required to supply the total electricity requirement for the business.

Dated this 8th day of August 2014

Original Signed by

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Neville V. Nicholls
Chairman

Original Signed by

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Philmore A. Alleyne
Commissioner

Original Signed by

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Andrew F. Brathwaite
Commissioner

Original Signed by

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Gregory F. M. Hazzard
Commissioner

Original Signed by

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Andrew W. Willoughby
Commissioner