



REGULATORY
AUTHORITY

Bermuda

Regulatory Authority (Renewable Energy Metering Scheme) General Determination

Final Report

Final Decision and Order

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1 EXECUTIVE SUMMARY

1. On 2nd March 2017, the Regulatory Authority of Bermuda (the “Authority”) issued an Emergency General Determination (the “EGD”) relating to the former small scale renewable energy ‘net metering’ scheme administered by the Bermuda Electric Light Company Limited (“BELCO”). This intervention followed communication by BELCO of 13th February 2017 to renewable energy installation companies, notifying them of BELCO’s termination of support for new renewable energy system installs.

2. The Authority has, as per the requirements of the Regulatory Authority Act 2011 (“RAA”), issued and completed two rounds of consultations on the EGD and the General Determination set forth in Appendix B (the “GD”). It has carefully considered the consultation responses and carried out analysis and assessment on various points raised during the consultation. The final consultation on the Preliminary Report, Decision and Order concluded on 2nd August 2017. In accordance with section 66(6) of the RAA, the Authority issued a notice on 2nd September 2017 extending the EGD until 2nd March 2018. This extension allowed the Authority to further review the analysis and assessment, as well as to respond to a request for information from the Minister, pursuant to section 6 of the RAA, for information in relation to the EGD.

3. The Authority has numerous duties and responsibilities in the regulation of electricity, as specified in the Electricity Act 2016 (“EA”).

4. In the Preliminary Report, the Authority noted that there are specific purposes for the EA in the regulation of electricity, as stipulated in Section 6 of the EA, which place increased responsibilities on the Authority. These purposes are also specifically the objectives of, and the principles that apply to, the foundation of the Authority’s regulation of the electricity sector generally and, in this instance, the continued implementation of the approach set forth in the EGD. This approach is summarized as follows:

1.1 The role of the GD and the implementation of licensing for the electricity sector

5. The Authority notes that as of 11th August 2017, and further to Ministerial consent, the Authority has implemented a licensing regime for electricity, which includes Bulk Generation licences (both standard and renewable) and a Transmission, Distribution and Retail (TD&R) licence. These licences include a range of conditions that relate to accounting separation, net benefit tests, retail tariffs and feed-in tariffs.

6. On 27th October 2017, the Authority issued a TD&R license to BELCO and Bulk Generation licences to both BELCO and Tynes Bay Waste to Energy Facility.

7. The EGD implemented a transitional feed-in tariff based on the Energy Commission’s recommendation of October 2016. Although BELCO is currently operating with a TD&R and Bulk Generation license, the full range of statutory requirements that may impact feed-in tariffs have not been fully implemented, including accounting separation and retail tariff methodologies.

8. The transitional rate will apply until the Authority completes a tariff review pursuant to section 37 of the EA in accordance with the transitional methodology set forth in the GD. The Authority intends to undertake a further consultation process to refine the transitional methodology, including the factors related to economic benefit.

1.2 The transitional feed-in tariff methodology will remain in place until further consultation, as it reflects the Authority's responsibilities under the EA.

9. The GD and the related implementation of a transitional methodology, as well as the related termination of the prior net metering scheme, is appropriate given the Authority's responsibilities under the EA. In particular, Section 6 ('Purposes') states:

- (a) 6(d) to provide sectoral participants and end users with non-discriminatory interconnection to transmission and distribution systems;
- (b) 6(e) to protect the interests of end users with respect to prices and affordability, and the adequacy, reliability and quality of electricity service;
- (c) 6(f) to promote economic efficiency and sustainability in the generation, transmission, distribution and sale of electricity.

10. After reviewing the outcome of two rounds of consultation the Authority's conclusion is that the GD is consistent with all the above provisions of the EA as the transitional GD feed-in tariff methodology:

- (a) Ensures non-discriminatory access to the grid for all BELCO customers with renewable energy installations; and
- (b) Removes cross-subsidies that existed due to the prior net metering scheme where non-renewable energy BELCO customers were subsidizing BELCO renewable energy customers under the prior net metering rates. This 'cross-subsidy' is the difference between the net metering rate versus the transitional avoided cost rate for all exported electricity.

11. By removing artificial economic returns from renewable energy installations, the GD promotes economic efficiency, among other things.

1.3 Overview of the Authority's assessment of the responses made to the second round of consultation

12. There were a range of responses submitted to the second round of consultation. The content of this report provides the detail of the Authority's assessment of these responses. The following is a summary of the Authority's view:

The accuracy of the Authority's analysis of the financial aspects of the EGD with regards to payback on solar installations

13. The Authority has assessed the comments from the industry and the public with regards to its analysis of the financial aspects of the EGD regarding payback on solar

installations. The Authority notes that the Preliminary Report, Preliminary Decision and Order, inaccurately stated that the solar industry had not provided any data or analysis in response to the Consultation Document to support its claims as to the financial impact of the EGD. The Authority clarifies this initial statement. The Authority received one response to the first round consultation that provided financial analysis on the impact of the EGD changes, which the Authority has analysed in comparison to its own modelling. The Authority's conclusion is that its analysis is appropriate, given various constraints, and that the data and analysis provided by various respondents during the two rounds of consultation is consistent with the Authority's own modelling, calculations and conclusions.

14. In addition, the Authority's conclusion is that solar photovoltaic ("PV") installations and investment which are focused on covering self-consumption, are not significantly affected by the EGD. On the contrary, investment in solar installations with substantial exports of electricity is significantly affected by the EGD, with regards to investment payback period. The Authority also notes that although such installations are affected, there is still a positive payback on the related investment, albeit over a longer period and a return on investment comparable or greater than alternate investment options.

The Authority's role is not one of creating and delivering subsidy

15. The Authority has noted that it is not the role of the Authority to devise and implement any subsidy for any particular type of electricity generation or to create subsidies to benefit any particular type of business or group in Bermuda. Instead, section 6 of the EA requires the Authority to promote a variety of purposes, including prices and affordability, economic efficiency and energy conservation.

The issue of subsidisation is a matter for Government to address

16. The Authority notes that in its response, the Department of Energy did not respond directly to the Authority's assertion that it is for the Government to decide whether renewable energy installation companies, and renewable energy systems generally, should be subsidized. Government introduced a limited subsidization regime in September 2009 that was subsequently terminated in 2014. On 26th October 2016, the Minister of Economic Development (the "Minister") endorsed the Energy Commission's recommendation on 'net metering', as stated in the Energy Commission's Net Metering Inquiry Response presented to the Minister on 11th October 2016.

The Authority emphasizes that within its rate setting responsibilities for feed-in tariffs, the Authority cannot introduce subsidisation for a specific type of consumer and/or provider of electricity within feed-in tariffs. This is stipulated by the EA, as described above.

The proposal for 'dual tariff' structures

17. The Authority notes that some respondents have proposed a system of 'dual' feed-in tariffs for solar installations. This would, in effect, establish one feed-in tariff for those who enrolled in BELCO's prior net metering program and another feed-in tariff for those who enrolled after a specific cut-off date.

18. The Authority notes that not only is such a proposal contrary to the provisions of the EA, but that also such regulatory discrimination is contrary to the broad responsibilities of the Authority to create and sustain economic efficiency e.g. one section of the consumer segment would be subsidising some forms of solar installs by other parties, leading to an increase in costs incurred by the former.

Department of Energy assertion that feed-in tariffs with in-built subsidy are covered by BELCO

19. The Authority notes that the Department of Energy has asserted that BELCO (and not consumers) would cover any subsidy in-built into feed-in tariffs, as it has in the past, according to the Department of Energy. The Authority notes that this is incorrect. BELCO has historically, and would continue to, recover any such 'subsidy' cost via retail prices charged to consumers.

Due process and analysis

20. The Authority notes that some respondents have asserted that the Authority has not followed due process in the area of consultation and analysis. The Authority refutes such claims. It would emphasise the following:

- A. The Authority implemented the EGD due to concerns as to BELCO's actions and the need for a transitional feed-in tariff.
- B. The Authority carried out two consultations on the EGD and GD, as required under the RAA. In both instances, on request, it extended the period for the public to respond to such consultations.
- C. The Authority carried out detailed analysis of the financial aspects of the GD, as well as the responses to two rounds of consultation, to ensure that the GD was consistent with the Authority's duties.

21. The Authority confirms that all necessary due process has been followed with the EGD and the finalisation of the same into a General Determination.

1.4 The GD delivers regulation and associated clarity into an environment where none previously existed

22. The Authority is aware that the EGD has been implemented in a legacy environment defined by particular characteristics, including:

- i. A period of Government subsidization of small scale solar PV installs;
- ii. BELCO unilaterally implementing feed-in tariffs and a net metering scheme for small scale renewable energy systems;
- iii. BELCO entering into contracts providing for net metering (the "SSRG") with a 30-day modification due to changes in applicable law provision; and

iv. There was no prior regulator, nor regulation of feed-in tariffs for small scale renewable energy installation.

23. From both rounds of consultation, it is clear this legacy environment led to a certain level of assumption and expectation that there would be no fundamental changes, and in particular, no change to feed-in tariffs.

24. The Authority has a remit and duty to act in accordance with its regulatory obligations, including as set forth in the EA. As such, the GD introduces a transitional methodology based on the Authority's regulatory and legislative framework.

2 INTRODUCTION

25. The purpose of this Final Report, Final Decision and Order is for the Authority to present a summary of the responses to (i) the initial Consultation Document; and (ii) the Authority's Proposed General Determination and Order and to enact the General Determination setting forth the transitional renewable energy tariff and methodology for assessing the level of the feed-in tariff, pursuant to section 36 of the EA.

26. The Authority is responsible for the regulation of the electricity sector and its overarching responsibilities are to:

- regulate tariffs and the quality of service provision to end users;
- ensure that access to electricity infrastructure by current and prospective generators is transparent, fair, reasonable, and non-discriminatory; and
- investigate and respond to complaints from end users as regards the provision of electricity.

27. The Authority issued the EGD on 2nd March 2017, mandating that BELCO pay a feed-in tariff for electricity produced by renewable energy systems because of the urgent nature of the issue and the potential impact on the economy of Bermuda.

28. The Authority recognises the importance of renewable energy Distributed Generation systems, which may include solar, wind, biomass, landfill gas, municipal solid waste, ocean (including tidal, wave, current, and thermal), geothermal and hydro resources. In particular, the Authority acknowledges solar PV generating facilities as one of the most important renewable technologies available in Bermuda and that efforts are required by both the Authority, as the regulator, and the Bermuda electricity industry as a whole, to ensure that solar PV will comprise an increased component of the Bermuda electricity generation mix in the future.

29. The Authority further considers that a degree of uncertainty amongst the Bermuda public in respect of future investment in solar PV has resulted from:

- (a) the closure of the net metering scheme operated by BELCO to new customers; and
- (b) the subsequent issuance of the EGD pursuant to Section 66(2) of the RAA concerning the "Transitional Measures for Bermuda Electric Light Company Limited Solar Net Metering Scheme" by the Authority (both as outlined below).

30. Prior to the EGD, BELCO had proposed to grandfather the previous net metering scheme to all solar PV participants who had begun construction (i.e. submitted their development application to the Dept. of Planning) prior to 26 August 2016, and to develop a new feed-in tariff based on avoided costs. However, since that date BELCO halted the program to new participants, pending an inquiry by the Minister of Economic Development. In response to this, the Authority issued the EGD.

31. This GD includes both a transitional tariff rate and a transitional methodology for assessing the level of the feed-in tariff, pursuant to section 36 of the EA. The transitional rate will apply until the Authority completes a feed-in tariff review pursuant to section 37 of the EA. The Authority also intends to commence further public consultation on the feed-in tariff methodology.

32. The EA requires the feed-in tariff to apply to all Distributed Generation produced by renewable energy. Therefore, this GD applies to all forms of these renewable generation technologies, as set forth in the EA.

3 BACKGROUND AND PROCEDURAL HISTORY

3.1 Background

33. In 2010, BELCO introduced its own small scale renewable generation scheme which was aimed at incentivizing residential electricity customers to install renewable energy systems at their properties in return for a payment in respect of any excess electricity generated and not consumed by such customers in any calendar month which was sold to BELCO (hereinafter referred to as the “BELCO Scheme” and/or “Scheme”).

34. On 15 August 2016, BELCO notified the Energy Commission of the following:

- (a) it was unilaterally closing the BELCO Scheme to new customers who wished to participate in the Scheme;
- (b) it proposed a new feed-in tariff based on an avoided cost methodology for new customers who wished to participate in the BELCO Scheme; and
- (c) it would continue to pay existing BELCO Scheme participants and those persons who had received planning and building control permission for their solar photovoltaic installations as at 15 August 2016 at the original net metering rate of payment.

35. While the Energy Commission was engaged in discussions with BELCO and the Minister in respect of BELCO’s decision to close the Scheme, the Electricity Act 2016 came into force, on 28 October 2016, and the Energy Commission was consequently terminated. Responsibility for electricity regulation was transferred to the Authority (whose responsibility included, for avoidance of doubt, responding to BELCO’s decision to close the Scheme). Prior to its termination, the Energy Commission made a number of recommendations to the Minister regarding BELCO’s decision to close the Scheme.

36. The Authority responded to BELCO’s decision to close the Scheme to new entrants on 2 March 2017 with the issue of the EGD. The EGD stated, amongst other things, that pending the issuance by the Authority of an Administrative Determination on BELCO’s proposed changes to the BELCO Scheme, BELCO should pay Scheme participants for any excess energy generated and not consumed by them in any calendar month and which they sold to BELCO:

- (a) from 15 August 2016 until 31 December, the original net metering rate of payment; and
- (b) from 1 January 2017 until the issuance by the Authority of an Administrative Determination, a rate of \$0.1736 per KWh.

3.2 Procedural History

37. The Authority initiated this consultation by publishing a Consultation Document on 16th March 2017 that invited responses from members of the public, including electricity sectoral participants and sectoral providers, as well as other interested parties.

38. The purpose of the Authority's initial Consultation Document was to consult on the Emergency General Determination.

39. The Consultation Document asked the following questions:

- (i) What is your view of how solar PV has evolved in Bermuda? Please provide views on the uptake of this technology.
- (ii) Looking to the future, how important do you believe solar PV is for Bermuda? If a respondent views solar PV as important please provide your views on what its costs and benefits are, how these should be quantified, and how these should be reflected in the framework for electricity regulation.
- (iii) Should there be capacity limits on solar systems installed on individual customers' premises in Bermuda? Should this be included within a formal licensing framework?
 - (A) If so, who should be responsible for assessing the system sizes and their limits (BELCO, Department of Planning, Authority etc.)?
 - (B) Should solar PV system sizing for a customers' premises be limited to the prior 12-month consumption of a residence/business and/or should it be based on forecasted consumption?
- (iv) The Authority has, via the Emergency General Determination, and on a transitional basis, mandated that BELCO should pay for electricity received from solar PV systems on the basis of the Energy Commission recommendations of October 2016 (see the Determination for detail). What are your views on this transitional measure?
- (v) What level and type of cost transparency should be mandated on BELCO to facilitate the determination of an appropriate feed-in tariff for electricity provided by solar PV? In particular:
 - (A) The Authority intends to mandate full accounting separation between BELCO's (i) generating, and (ii) transmission, distribution and retail activities. Please provide your views on specific aspects of BELCO's operational activities that are relevant to the cost transparency and related determination of the feed-in tariff rate?
 - (B) What levels of cost element transparency would you expect within a BELCO feed-in tariff for solar PV?
- (vi) What do you believe should be the economic basis for solar PV in Bermuda, specifically in the context of feed-in tariffs? Alongside any general comments by respondents please provide responses to the following:
 - (A) Should BELCO's solar PV Metering Scheme reflect a cost-benefit methodology or an avoided cost methodology?

- (B) What cost rate design for solar PV participants is best suited to incentivizing greater utilization of cleaner energy sources and technologies in Bermuda?
- (C) What other factors should be considered in determining the cost rate design for feed-in tariffs?
- (vii) Should solar PV or other renewable energy programs be incentivized within a specific regulatory framework for renewables in Bermuda?
- (viii) In your view, are there any barriers to solar PV or other forms of renewable generation investment?
 - (A) If so, what are these barriers?
 - (B) How could they be removed to enable further investment?

40. The Consultation Document also invited respondents to raise any other matters that the Authority should consider in developing the electricity licenses.

41. Responses to the Consultation Document were solicited from the public electronically through the Authority's website at www.rab.bm.

42. The response period commenced on 16th March 2017 and concluded on 12th May 2017.

43. The Authority received eighty-three responses from the public, as discussed in section 6 below.

44. On 14th July 2017 the Authority issued its Preliminary Report, Preliminary Decision and Order. The Authority invited responses from members of the public, including electricity sectoral participants and sectoral providers, as well as other interested parties.

45. Public comments on the Preliminary Report, Preliminary Decision and Order were to be submitted by 2nd August 2017.

46. The Authority received eighteen responses from the public to the Preliminary Report, Preliminary Decision and Order.

47. In accordance with section 66(6) of the RAA, the Authority issued a notice on 2nd September 2017 extending the EGD until 2nd March 2018. This extension allowed the Authority to thoroughly review the analysis and assessment, as well as to respond to a request for information from the Minister, pursuant to section 6 of the RAA, for information in relation to the EGD.

3.3 Final Decision and Order

48. The Authority hereby adopts the Order in Appendix A and makes the General Determination out in Appendix B to this Final Report and Decision.

4 LEGISLATIVE CONTEXT

49. The Authority has the powers to supervise, monitor and regulate the electricity sector in accordance with the purposes of the EA. Such purposes, as set forth in Section 6 of the EA, include:

- (i.) “to promote the use of cleaner energy sources and technologies, including alternative energy sources and renewable energy sources”, Section 6(c); and
- (ii.) “to provide sectoral participants and end-users with non-discriminatory interconnection to transmission and distribution systems”, Section 6(d).

50. The principal functions of the Authority set forth in Section 12 of the RAA include:

- (i.) “to promote and preserve competition”, Section 12(a);
- (ii.) “to promote the interests of residents and consumers of Bermuda” (Section 12 (b); and
- (iii.) “to promote the development of the Bermudian economy [and] Bermudian employment”, Section 12 (c).

51. Pursuant to sections 65(2) and 68 of the EA (i) “any matters relating to the electricity sector . . . that are pending before the Minister or the Energy Commission as at the date of commencement of [the EA]” and (ii) “any notice of intention to vary a price or charge given to the Energy Commission and pending before the Minister or the Energy Commission immediately before the commencement date of [the EA] shall be transferred to the Authority for resolution in accordance with the procedures established by the [RAA], subject to any modifications that the Authority may deem appropriate and efficient, depending on the status of each case.”

52. Section 36 of the EA requires the Authority to set a method for determining the feed-in tariff via a general determination.

5 SUMMARY AND DISCUSSION OF RESPONSES TO THE INITIAL CONSULTATION DOCUMENT

5.1 Response Method

53. The Consultation Document allowed the public to submit responses commenting on the EGD and responding to the consultation questions. Eighty-three written responses were received from the general public.

5.2 Summary of Responses

54. This section provides an overview of the key themes from the responses to the Consultation Document and summarizes some of the main decisions that the Authority has made, taking into consideration the public responses.

55. Not all respondents chose to answer the questions specified in the Consultation Document. Some preferred to provide their views in more general terms and where possible the Authority has included information from these responses in the appropriate section. In addition, some responses addressed some of the questions but not all.

56. Eighty-three parties submitted comments in response to the Consultation Document, twelve of which directly responded to the questions in the Consultation Document. Of those twelve responses, one response was from BELCO, three responses were from solar industry representatives, eight were from scheme participants, and none were from the general public.

57. Of the seventy-one general comments submitted, fifty-three were from scheme participants, forty-four of which were duplicate responses, and eighteen were from the solar industry representatives and workers. In addition to the responses to the consultation questions and general comments received, thirty-nine responses were received and classified as ex parte communication, due to the submission not being received through the official means as described in the Consultation Document.

58. The concerns voiced in the responses generally fall into four categories:

- (a) concerns about the cost reflectivity of the transitional feed-in tariff, and how this tariff may be omitting some avoided costs;
- (b) impact of the transitional arrangement on customers who were either planning to invest, or already have made sunk investments in solar PV installations, based on the EGD's lack of grandfathering provisions;
- (c) concerns of the policy implications of closing the previous solar net metering scheme, and whether this would disrupt environmental policy objectives on the island; and
- (d) concerns about whether the EGD interfered with the scheme participants' contractual relationship with BELCO.

5.3 Discussion of Responses

59. The first category of responses (paragraph 43 (a)) included concerns about the cost reflectivity of the tariff, primarily focusing on the methodology used to derive the avoided fuel cost. The tariff rate is inclusive of avoided fuel costs, avoided lubricating oil, avoided capital construction, and avoided transmission line losses. The transitional arrangement's avoided fuel cost component is calculated on a weighted annual average avoided fuel cost basis. The rate is set and evaluated on a periodic basis (via tariff review) to provide greater certainty to the industry.

60. The second category of responses (paragraph 43 (b)) include concerns about the impact of the transitional arrangement on both completed and future investments. For consumers who have not yet invested in renewable energy systems, there is no risk of any impact as investments should no longer be made on the basis of a net metering arrangement. For renewable energy system producers with agreements prior to the introduction of the transitional arrangement, it is possible that the transitional arrangement will have a financial impact and this is discussed below. That said, it is the Authority's understanding that at no point was there any policy commitment or 'guaranteed' level of remuneration for renewable energy systems installations.

61. In the third category (paragraph 43 (c)), many respondents were concerned about the implications of the transitional arrangement for the future of renewables adoption in Bermuda. The Authority is required to strike a balance between affordability and other environmental objectives. Therefore, the fact that the transitional arrangements do not actively disincentivise the adoption of renewable energy installations in future, but do prevent overcompensation in the case of electricity sold by owners of existing facilities, ensures that the transitional measures are consistent with a balanced assessment required under the EA. The new transitional rate and methodology incentivises the efficient level of renewable generation investment, without leading to undue changes in retail tariffs.

62. Lastly, the final category of responses (paragraph 43 (d)) claim that the EGD has legally interfered with their contractual relationship with BELCO. However, the Authority is required to regulate the entire electricity sector in accordance with the EA and the RAA, not any single contract. BELCO's SSRG is subject to applicable laws, including the EA and the RAA, as explicitly set forth in the SSRG.

6 SUMMARY AND DISCUSSION OF RESPONSES TO THE PRELIMINARY DECISION

6.1 Response Method

63. The Preliminary Report, Preliminary Decision and Order allowed the public to submit responses commenting on the Preliminary Report, Preliminary Decision and Order. Eighteen parties submitted comments in response to the Preliminary Report, Preliminary Decision and Order. Of the eighteen responses, one response was from BELCO, two responses were from solar industry representatives, fifteen were from scheme participants or prospective scheme participants, and zero were from non-scheme participants.

6.2 Summary of Responses

64. This section provides an overview of the key themes from the responses to the Preliminary Report, Preliminary Decision and Order and summarizes some of the main decisions that the Authority has made, taking into consideration the public responses.

65. The Authority provides a high-level reply to the second round of consultation. Individual replies to the submitted responses are detailed in the [Response to the Renewable Energy Metering Second Round Consultation Document](#). Given that the consultation responses received in the second round were similar to the issues and concerns raised in the first round, the themes in response to both rounds are similar.

66. The following issues raised in the second-round consultation, are discussed in turn:

- (i) The Authority has disregarded its duty to promote cleaner energy;
- (ii) The new tariff arrangements renege on the terms of existing investments;
- (iii) The new tariff arrangements transfer benefits to the TD&R licensee;
- (iv) The Authority's analysis is incorrect.

6.3 Discussion of Responses

67. Central to the Authority's views on the Renewable Energy Metering Scheme are the requirements set out in the EA which states that the feed-in tariff can only allow compensation for, at most, the cost of generation that BELCO (as the TD&R Licensee) avoids by purchasing power from distributed generators (including Solar PV).¹

68. This is consistent with the National Electricity Sector Policy ('Bermuda's electricity policy'), which states that the reformed electricity sector in Bermuda will introduce competition between existing generation facilities, prospective third-party bulk generators

¹ See section 36 of the EA

(i.e., IPPs), distributed generators (DGs), and other demand-side resources.² In order to ensure that the benefits of such competition are realised it is necessary that all electricity resources have access to the electricity network on fair, reasonable, and non-discriminatory terms. In turn, this requires that the feed-in tariff for renewable energy systems reflect the system-wide costs and benefits of this technology—in this case, principally BELCO’s avoided costs and avoided network losses.

Consistency of EGD with the Authority’s duties

69. A number of submissions imply that the Authority has disregarded, or de-emphasised, its duty to promote the use of cleaner energy in Bermuda. In particular, in its response to the second round of consultation, the Department of Energy has questioned whether the Authority has duly considered all of its relevant duties as per the EA. Specifically, the Department of Energy cites the following duties:³

- (a) 6(c) to promote the use of cleaner energy sources and technologies, including alternative energy sources and renewable energy sources;
- (b) 6(d) to provide sectoral participants and end-users with non-discriminatory interconnection to transmission and distribution systems;
- (c) 6(e) to protect the interests of end-users with respect to prices and affordability, and the adequacy, reliability and quality of electricity service;
- (d) 6(f) to promote economic efficiency and sustainability in the generation, transmission, distribution and sale of electricity.

70. The Authority considers that the transitional arrangements as per the GD are consistent with these duties. In particular, the Department of Energy suggests that only 6(d), (e) and (f) have been considered ‘in part’, suggesting that 6(c) has been wholly disregarded.

Authority’s response

71. The Authority disagrees that it has failed to duly consider its duties, as the Department of Energy has suggested. In response to the requirements cited by the Department of Energy, the Authority considers that its transitional arrangements achieve an appropriate balance of the following:

72. **6(d), (e), (f)**—the GD appropriately balances relevant duties relating to non-discrimination (6(d)), affordability and quality (6(e)) and efficiency/sustainability (6(f)). In particular, the use of an avoided cost methodology seeks to ensure that distributed solar PV

² In June 2015, the Ministry of Economic Development of Bermuda (the “Ministry”) published the National Electricity Sector Policy. This Policy Document set out the groundwork for the institution of the subsequent EA and the desired structure of the Bermuda electricity sector.

³ Government of Bermuda, Ministry of Transport and Regulatory Affairs, Department of Energy (2017), Letter, August 2nd.

producers pay an efficient share of system costs, promoting the objectives of non-discrimination, affordability across the consumer base and efficiency/sustainability.

73. **6(c)**—contrary to the Department of Energy’s implication that 6(c) has been disregarded, the Authority considers that it is not acting in a manner that is contrary to promoting cleaner energy sources. The Authority is required to balance issues of affordability and fairness with wider policy objectives like distributed solar PV targets (i.e. 1% by 2020 and 6% by 2035, nationally⁴). Even if the rate of solar uptake slows down with the GD arrangements, to the extent that there is any positive payoff to investing in solar PV, there will be incentives for increased solar penetration. This is discussed further below.

Returns and incentives for solar PV installation

74. A number of submissions suggest that the new tariff arrangements renege on the terms of existing investments by increasing the payback period or decreasing the returns on investment. For example:

75. “Bermudian investors require a payback on their initial investment in a maximum of 7 years or less, some require a payback of less than 5 years. Subsequently the Authority’s current EGD rate is completely out of touch with the reality of business in Bermuda.”⁵

76. “This is extremely unfair to those individuals including myself that have invested in PV systems on the assumption of net metering. To renege on that agreement is unfair and flawed long term policy.”⁶

77. “[...] this is clearly a breach of contract between the primary parties, (BELCO and ourselves) and the assumed secondary party, the Bermuda Government who stated on many occasions what the terms of the agreement would be.”⁷

78. “I understand that situations change and decisions must alter with them. But with so few domestic solar producers, to go against an earlier promise of net metering seems dishonest.”⁸

79. “[...] I would wager that as a direct result of your determinations (interference), the rate of solar PV installation in Bermuda will slow down significantly or cease altogether”⁹

Authority’s response

⁴ Government of Bermuda, Ministry of Economic Development (2015), ‘The National Electricity Sector Policy of Bermuda’, 26 May, Table 4.1.

⁵ BE Solar (2017), ‘Response to the Regulatory Authority of Bermuda’, RE: Consultation on the Renewable Energy Metering Scheme, 1 August, p.4.

⁶ Jansma, C. (2017), ‘Response to Consultation Document 16-0819: Comments on Regulatory Authority and Government Fees Process’, May 12.

⁷ Heslop, C. (2017), ‘Net metering submission’, Email, 1 August.

⁸ Mallon, D. (2017), ‘Solar Power Net Metering’, Email, 2 August.

⁹ Weisberg, E. A. (2017), ‘Response to Preliminary Report, Preliminary Decision and Order: Renewable Energy Metering’, 28 July, p.2.

80. The Authority agrees that under the revised feed-in tariff arrangements as per the GD, the payback period of investment would increase, and the return on investment would decrease, for existing distributed solar PV producers. However, in response to the concerns raised in relation to this:

81. Firstly, the Authority disagrees that a longer payback period, or lower return on investment is inconsistent with its duty to promote the use of cleaner energy. As long as there is positive payoff to investing in solar PV, there will be incentives for future solar uptake, even if the rate of uptake slows down.

82. Secondly, the Authority disagrees that it is reneging on a long-term agreement. The Authority notes that BELCO's SSRG with its former net metering customers contained a change of law provision allowing BELCO to amend the contract upon 30 days notice if necessary due to a change in law. This provision recognizes that changes in law can and do impact private contracts and such contracts must therefore be modified to be in compliance with the law. The Authority has a responsibility to act in compliance with its enabling and sectoral legislation, specifically the RAA and EA, and not private contracts. Instead, private contracts are required to act in accordance with applicable law, as set forth in BELCO's SSRG. It is also important to state for context, that the Authority does not have a duty to provide guaranteed returns, or payback periods, as envisaged by existing solar PV producers at the time of investment.

83. Thirdly, it should be noted that the Authority has to balance its duties including promotion of renewable energy sources with system-wide affordability. It is not the Authority's role to decide on levels of subsidy for the installation or remuneration of distributed solar PV. However the Authority intends to conduct a comprehensive review of the wider economic benefits which will feed into the redesign of the feed-in tariff methodology. This would be to the extent that the redesign of the feed-in tariff methodology allows for more cost-reflective pricing signals (i.e. avoided cost rather than net metering) and reduces incentives for solar PV penetration. Any decision to provide a greater incentive than is conferred by avoided cost and the Authority's analysis of economic benefit is a matter for government policy on subsidisation of renewable energy.

Transfer of benefits to TD&R licensee

84. A number of submissions suggest that the EGD methodology leads to a transfer of benefits or wealth from existing distributed solar PV producers, to the TD&R licensee (BELCO).

85. "Hence, based on your emergency determination and on the methodology that you propose to implement now, the excess generation that goes from my roof on a sunny day is free to BELCO and they then charge other, non-solar BELCO customers at their own production rates to use it. This is nothing other than a gift to BELCO shareholders. [sic] You are allowing them the ability to sell power to their customers that they have not paid to

generate...you don't mention this windfall to BELCO shareholders, which is in direct contradiction to the stated socialist aims of your determinations.”¹⁰

86. “Finally, as it appears that the Authority has created a bias decision that benefits Belco over solar users, I wish to ask the following question. Are any Authority employee’s shareholders of the Ascendant group / Belco that worked on, consulted for advice, or aided or influenced the decision of the Authority for solar energy pricing and this decision? [sic]”¹¹

87. “However, Belco will always claim that this idea is on achievable [sic]. Mostly because it reduces the amount of electricity that they have to produce to sell to customers.”¹²

Authority’s response

88. The Authority notes that the current GD approach does not lead to a benefit to BELCO, as it is revenue neutral for BELCO. Any inclusion of costs above avoided costs in the feed-in tariff will instead have a direct impact on the retail tariff, as such costs are passed directly through to BELCO’s customers through the retail tariff rate.

89. BELCO’s previous Solar Net Metering Scheme operated on a net export basis—that is, any generation exported to the grid by PV producers, net of total energy consumed (and supplied by BELCO), would be remunerated at the retail tariff rate. The effect of this scheme was that the costs of consumption (i.e. BELCO’s average production costs) and the benefits of generation (i.e., BELCO’s *avoided* costs) at a customer’s premises were assumed to be equal. However, this is not the case given BELCO’s fixed costs are largely *unavoidable* at current levels of solar PV penetration. These fixed costs relate to BELCO’s existing generation plants, its network infrastructure, as well as some of its retailing activities (e.g., maintaining customer records, metering, and billing). Setting a feed-in tariff at a level significantly higher than BELCO’s avoided costs would increase the risk of overcompensating existing customers with Solar PV installed and thereby increase the average retail tariff to all customers without any benefit in terms of system reliability.

90. Moreover, given that the costs of BELCO’s bulk generation and Solar PV generation are *different*, applying the *same* ‘price’ (i.e., the retail tariff) to both of these generation resources would be discriminatory and inconsistent with both Bermuda’s electricity policy and the EA. In the long-term this has the potential to raise overall consumer bills still further since it increases the risk that future Solar PV investments are inefficient from an electricity system perspective. For example, if customers install larger Solar PV systems under the previous net metering scheme than under the transitional measures, then the direct costs of the scheme to BELCO would increase *and* the system-wide net demand (in kWh terms) would decrease. This would imply a double effect for consumers since the retail tariff is, in essence, calculated by dividing total system costs by net demand.

¹⁰ Weisberg, E. A. (2017), ‘Response to Preliminary Report, Preliminary Decision and Order: Renewable Energy Metering’, 28 July, p.2.

¹¹ Masters, G. (2017), ‘RAB Questions and Response’.

¹² Card, T. (2017), ‘Comments on Response to Preliminary Report, Preliminary Decision and Order: Renewable Energy Metering’, Email, 28 July.

91. The transitional measures have the effect of transitioning PV producers to a charging system based on *gross* demand and export as opposed to *net* imports or exports. The avoided cost rate and methodology for new Solar PV gross exports would therefore make the overall system of electricity tariffs substantially more cost-reflective given that exports and imports will be metered, and charged or credited, separately. In turn, the average tariff would be lower than if the previous net metering regime were to continue into the future.

92. The new transitional arrangement therefore incentivises an efficient level of renewable generation investment, without leading to higher retail tariffs, or a transfer of benefits to the TD&R licensee.

Comments on Authority's analysis

93. A number of submissions suggest that the Authority's analysis of the impact of moving to an avoided cost methodology is misleading or incorrect. For example:

94. "[...] we agree in principle with the avoided cost concept - however we disagree with the calculation of the avoided cost as presented. It is far too narrow and doesn't factor in additional avoided cost in terms of (i) environmental costs (greenhouse gases, using carbon equivalent and carbon pricing; but also public health costs in terms of particulate matter); (ii) transmission & distribution capacity savings (in terms of reducing peak loading on the system - delaying the need for capital investments); (iii) fuel price hedge value (PV generation has no fuel price uncertainty); (iv) fixed capital avoided costs (encouraging distributed PV generation reduces the need for investing massively in new fixed capital for the utility to meet increased demand). The avoided cost value estimated by BELCO (and proposed subsequently by the Authority) to us represents the absolute minimum or floor for the avoided cost value."¹³

95. "Your decision to maintain your preliminary position is based as much on faulty mechanics as on faulty rationale. For example, in the computation of the "avoided cost" it appears that you have accepted BELCO's computation of \$0.17 as fair and accurate. Belco has informed me of the elements they have considered in computing that value (and you also showed those components in the Report) and I submit that Belco (and the Authority) have grossly understated the avoided cost by failing to include some of the most important elements."¹⁴

96. "We have already spoken about some of the errors in your financial modelling in our response # 1, so we will now touch on some further ones. Your net capital cost per watt for your 10 kW system is higher than for your 5 kW version. As pricing generally decreases per watt as the systems get bigger, this is producing skewed results that make the 5 kW system look like it has a better ROI than it should, while the 10 kW's is perhaps worse... Since our initial response, we have done far more detailed financial modelling, which we will not share unless so requested, as you claimed we did not submit this information, when clearly we did. However, we did model what the FIT would need to be in order to have minimal financial

¹³ Greenrock (2017), 'Greenrock Press Release on Consultation (EGD) Deadline', Email, 2 August.

¹⁴ Parker, P. L. (2017), 'Response to Preliminary Report, Preliminary Decision and Order: Renewable Energy Metering', Email, 27 July.

impact on existing customers that are not net exporters per year. Our modelling showed that for 7.5 kW and 15 kW systems, a FIT of \$0.3300/kWh would have ROIs in the 5.65 to 6.7 year range for every type from a heavy user to a moderate net exporter respectively.”¹⁵

Authority’s response

97. The Authority considers that the analysis it has presented is fit-for-purpose in defining the transitional GD arrangements. With regard to this financial analysis, the Authority notes the following: The annual PV system production rate per installed capacity (i.e. annual kWh/kW) and the installed cost per watt (i.e. \$/watt) are identical in each scenario. The nominal capacities and annual kWh/kW of each system are set forth in Table 1 below. Although the Authority’s calculations were based on nameplate capacity, it rounded the nameplate capacities to the reported capacity in the “Technical Report on the Analysis of Net Metering and Transitional Avoided Cost Schemes” for ease of reporting.

Table 1		
Reported Capacity	Nominal Capacity	Annual PV System Production per kW
2kW	2.217kW	1503kWh/kW
5kW	4.989kW	1503kWh/kW
10kW	10.08kW	1503kWh/kW
15kW	14.966kW	1503kWh/kW

98. The Authority has undertaken limited primary analysis of the impact of the transitional avoided cost methodology at this stage. A full review will be undertaken according to section 37 (1)(b) of the EA, which states that within two years from the commencement date of this Part, the Authority shall conduct a feed-in tariff review in accordance with section 36 to establish the approved feed-in tariff.

99. The Authority has accepted the avoided cost estimate submitted by BELCO to the Energy Commission during the Solar Net Metering Inquiry. The tariff rate is inclusive of avoided fuel costs, avoided lubricating oil, avoided capital construction, and avoided transmission line losses. When the full review is undertaken, this cost estimate will be revised in line with any changes in costs.

100. The Authority agrees that the avoided cost methodology does not take into account categories of social benefit, like environmental benefits from increased solar PV penetration. However, the Authority considers that any quantification and tariff adjustment for such

¹⁵ Nash, C. E. (2017), ‘Re: Response to Preliminary Report, Preliminary Decision and Order: Renewable Energy Metering (2nd Consultation – 7-14-17, Original Document 17-0316.) (Response 2 of 2)’, BAE, 2 August, p. 2.

categories of external/social cost or benefit is a matter for policy decisions on carbon price.¹⁶ The Authority's further consultation on the feed-in tariff methodology will allow interested parties to provide further feedback on the Authority's proposed assessment of economic benefits.

Concluding remarks

101. In summary, the Authority considers that its transitional measures strike an appropriate balance between its duty under the EA to regulate the electricity sector in a manner that lowers the overall costs to consumers, and the need to promote renewable generation, while also ensuring reliable electricity services. Prioritising the interests of existing distributed solar PV producers, in allowing them to earn the level of returns that they originally envisaged, would not justify disregarding the Authority's duties in relation to system-wide affordability and efficiency and non-discriminatory access for generation to the network.

102. The wider economic benefit will be assessed pursuant to the forthcoming public consultation on the feed-in tariff methodology. The Authority expects to work with Government on appropriate policy trade-offs of the factors considered when assessing economic benefits.

103. Accordingly, the Authority's view remains that the renewable energy metering scheme—including an avoided cost rate and methodology—would increase cost-reflectivity compared to the previous scheme while still providing a positive payoff for customers who install Solar PV.

7 CONCLUSION

104. In furtherance of the proposals set forth above, the Authority hereby adopts the Order contained in Appendix A to this Final Report and Final Decision, and makes the Final General Determination contained in Appendix B.

¹⁶ Correspondingly, if the revision of the feed-in tariff arrangements leads to lower solar PV penetration than required to meet national targets by 2020 and 2035, then it will be a matter for government policy to consider whether to introduce direct subsidies for solar PV installation.

APPENDIX A: Order



BERMUDA
**REGULATORY
AUTHORITY**

**Order:
Renewable Energy Metering Scheme**

Order

Date: 28 February 2018

7.1 The Regulatory Authority, pursuant to Sections 12, 13 and 62 of the Regulatory Authority Act 2011 and Sections 6, 14, 36, 65(2) and 68 of the Electricity Act 2016, hereby:

- (a) Adopts the General Determination attached hereto, setting forth the renewable energy metering scheme;
- (b) Directs the Chief Executive of the Regulatory Authority to forward the General Determination to the Cabinet Secretary; and
- (c) Authorises the General Determination to be effected on the date of its publication in the Royal Gazette.

7.2 So Ordered this 28 day of February 2018

APPENDIX B: General Determination



**BERMUDA
REGULATORY AUTHORITY (RENEWABLE ENERGY METERING SCHEME)
GENERAL DETERMINATION 2018**

BR /2018

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The Regulatory Authority, in the exercise of the power conferred by section 62 of the Regulatory Authority Act 2011, as read with sections 12 and 13 of that Act and sections 6, 14, 36, 65(2) and 68 of the Electricity Act 2016, makes the following General Determination:

Citation

1 This General Determination may be cited as the Regulatory Authority (Renewable Energy Metering Scheme) General Determination 2018.

Interpretation

2 In this General Determination, unless the context otherwise requires, terms shall have the meaning given in the Regulatory Authority Act 2011, the Electricity Act 2016, and the Schedule to this General Determination.

General Purpose

3 This General Determination establishes the transitional renewable energy metering scheme, including a transitional rate and feed-in tariff methodology.

Determination

4 (1) This General Determination is made pursuant to the Consultation entitled “Consultation on the Regulatory Authority (Transitional Measures for Bermuda Electric Light Company Limited Solar Net Metering Scheme) Emergency General Determination” dated 16th March 2017 and the Regulatory Authority’s Decision on it.

(2) Taking into account the received responses to the Consultation and for the reasons given in the Decision, the Authority determines that the Renewable Energy Metering Scheme set forth in the Schedule is consistent with the purposes of the Electricity Act 2016, including to seek to:

- (a) ensure the adequacy, safety, sustainability and reliability of electricity supply in Bermuda;
- (b) encourage electricity conservation and the efficient use of electricity;
- (c) promote the use of cleaner energy solutions and technologies;
- (d) provide sectoral participants and end-users with non-discriminatory interconnection to transmission and distribution systems;
- (e) protect the interests of end-users with respect to prices and affordability, and the adequacy, reliability and quality of electricity service; and
- (f) promote economic efficiency and sustainability in the generation, transmission, distribution and sale of electricity.

Terms and conditions of General Determination

5 (1) The Schedule to this General Determination has effect.

(2) The Schedule is also published on the Regulatory Authority’s website (www.rab.bm), and is also available for inspection at the offices of the Authority [1st Floor, Craig Appin House, 8 Wesley Street, Hamilton HM 11) during ordinary business hours.

Effective Date of General Determination

6 This General Determination shall become effective on the day it is published in the Official Gazette.



BERMUDA

**REGULATORY
AUTHORITY**

**Schedule to Regulatory Authority
(Renewable Energy Metering Scheme)
General Determination 2018**

General Determination
Date: 28 February 2018

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4. Final Determination

This General Determination is made by the Authority pursuant to section 62 of the Regulatory Authority Act 2011 (“RAA”) and establishes the transitional scheme for renewable energy metering, including a transitional rate and feed-in tariff methodology. The adoption and implementation of this rate and methodology is in accordance with sections 6, 14, 36, 65(2) and 68 of the Electricity Act 2016 and the general powers granted to the Authority under section 13 of the RAA and in accordance with the procedures established for this purpose in sections 61 and 62 of the RAA.

1 Definitions

“Authority” means the Regulatory Authority of Bermuda;

“BELCO” means the Bermuda Electric Light Company Limited, as established pursuant to the Bermuda Electric Light Company Act 1951;

“Commencement Date” means 28 October 2016, the date on which the EA came into force;

“EA” means the Electricity Act 2016;

“EC Response” means the recommendations presented to the Minister by the EC in a paper entitled Net Metering Inquiry Response on 11 October 2016;

“EC” means Energy Commission, the body established under the Energy Act 2009 and which (i) advised the Minister in the discharge of his functions under that Act; and (ii) considered BELCO’s proposals to vary its prices or charges; and (iii) provide a recommendation to the Minister in relation to such proposed variations of its prices and charges; and which ceased to exist when the Energy Act 2009 was repealed pursuant to section 65(1) of the EA which came into effect on the Commencement Date;

“EGD” means the Regulatory Authority (Transitional Measures for Bermuda Electric Light Company Limited Solar Net Metering Scheme) Emergency General Determination (the “Emergency General Determination”) issued by the Authority on 2nd March 2017;

“Feed-in Tariff” means the pre-determined rate at which renewable energy is purchased by the TD&R Licensee from a distributed generator, for a pre-determined period, and under predetermined conditions in accordance with Part 6 of the EA;

“Fuel Adjustment Rate” means a mechanism that is designed to recover the cost of fuel used to produce electricity, calculated based on the cost of fuel per barrel and its projected usage;

“Minister” means the Minister responsible for the Electricity sector, which is currently the Minister of Transportation and Regulatory Affairs for Bermuda;

“Net Metering Scheme” or **“Scheme”** means the scheme introduced by BELCO in or about 2010 aimed at incentivizing residential electricity customers to install solar PV, wind and tidal energy and under which they would receive payment in respect of any excess energy generated and not consumed by such customers in any calendar month and which they sold to BELCO;

“RAA” means Regulatory Authority Act 2011;

“Renewable Energy Metering Payment” means a monthly payment by BELCO to Renewable Energy Participants in respect of Renewable Energy Participants’ net excess energy in any Month, and which is calculated by multiplying the amount of such energy exported to BELCO’s grid by a set rate;

“Renewable Energy Participants” means BELCO’s residential and commercial electricity customers who: (i) currently sell excess energy generated by solar PV or Wind Generation to BELCO and (ii) any new customers who wish to sell excess energy generated by Solar PV or Wind Generation to BELCO;

“Scheme Participants” means BELCO’s residential electricity customers who have participated in the Scheme;

“Solar Photovoltaic” or **“Solar PV”** means a technology in which sunlight is converted into electrical power;

“TD&R Licence” means the Transmission, Distribution and Retail Licence referenced in section 20(1)(a) of the EA;

“Tidal Generation” means a technology in which the ocean tides (or waves) are converted to electrical power; and

“Wind Generation” means a technology in which wind power is converted into electrical power.

2 Interpretation

- (1) For purposes of interpreting this General Determination:
 - (a) unless the context otherwise requires, words or expressions shall have the meaning assigned to them by the RAA and the EA;
 - (b) where there is any conflict between the provisions of this General Determination and the EA or RAA, the provisions of the EA or RAA, as the case may be (and subject to sections 3(2) and 3(3) of the EA), shall prevail;
 - (c) terms defined herein and in the EA and RAA have been capitalised;
 - (d) headings and titles used herein are for reference only and shall not affect the interpretation or construction of this General Determination;
 - (e) references to any law or statutory instrument include any modification, re-enactment or legislative provisions substituted for the same;
 - (f) a document referred to herein shall be incorporated into and form part of this General Determination and a reference to such document is to the document as modified from time to time;
 - (g) expressions cognate with those used herein shall be construed accordingly;
 - (h) use of the word "include" or "including" is to be construed as being without limitation; and
 - (i) words importing the singular shall include the plural and vice versa, and words importing the whole shall be treated as including a reference to any part unless explicitly limited.

3 Legislative and Procedural Background

- (1) This General Determination has been undertaken in accordance with section 62 of the RAA and the exercise by the Authority of its powers under sections 6, 14, 36, 65(2) and 68 of the EA.
- (2) The Authority initiated this consultation by publishing a Consultation Document on 16 March 2017 that invited responses from members of the public, including electricity sectoral participants and sectoral providers, as well as other interested parties. The purpose of the Authority’s initial Consultation Document was to consult on the transitional tariff set forth in the EGD.

- (3) The Consultation Document asked the following questions:
- What is your view of the how renewable energy, in particular solar PV has evolved in Bermuda? Please provide views on the uptake of this technology and other technologies which may be beneficial to Bermuda.
 - Looking to the future, how important do you believe solar PV is for Bermuda? If a respondent views solar PV as important please provide your views on what its costs and benefits are, how these should be quantified, and how these should be reflected in the framework for electricity regulation.
 - Should there be capacity limits on solar systems installed on individual customers' premises in Bermuda? Should this be included within a formal licensing framework?
 - If so, who should be responsible for assessing the system sizes and their limits (BELCO, Department of Planning, RAB, etc.)
 - Should solar PV system sizing for a customers' premises be limited to the prior 12-month consumption of a residence/business and/or should it be based on forecasted consumption?
 - The Authority has, via the Emergency General Determination, and on a transitional basis, mandated that BELCO should pay for electricity received from Solar PV systems on the basis of the Energy Commission recommendations of October 2016 (see the Determination for detail). What are your views on this transitional measure?
 - What level and type of cost transparency should be mandated on BELCO to facilitate the determination of an appropriate feed-in tariff for electricity provided by Solar PV? In particular:
 - The Authority intends to mandate full accounting separation between BELCO's (i) generating, and (ii) transmission, distribution and retail activities. Please provide your views on specific aspects of BELCO's operational activities that are relevant to the cost transparency and related determination of the feed-in tariff rate?
 - What levels of cost element transparency would you expect within a BELCO feed-in tariff for Solar PV?
 - What do you believe should be the economic basis for renewable energy systems in Bermuda, specifically in the context of feed-in tariffs? Alongside any general comments by respondents please provided responses to the following:
 - Should BELCO's renewable energy Metering Scheme reflect a cost-benefit methodology or an avoided cost methodology?
 - What cost rate design for renewable energy participants is best suited to incentivizing greater utilization of cleaner energy sources and technologies in Bermuda?
 - What other factors should be considered in determining the cost rate design for feed-in tariffs?
 - Should solar PV or other renewable energy programs be incentivized within a specific regulatory framework for renewables in Bermuda?
 - In your view, are there any barriers to solar PV or other forms of renewable generation investment?

- If so, what are these barriers?
 - How could they be removed to enable further investment?
- (4) The Consultation Document also invited respondents to raise any other matters that the Authority should consider regarding the transitional solar feed-in tariff.
 - (5) Responses to the Consultation Document were solicited from the public electronically through the Authority's website at rab.bm.
 - (6) The response period commenced on 16 March 2017 and concluded on 12 May 2017.
 - (7) The Authority received eighty-three responses from the public.
 - (8) The Authority issued a Preliminary Report, Preliminary Decision and Order on 14 July 2017. The Authority invited responses from members of the public, including electricity sectoral participants and sectoral providers, as well as other interested parties.
 - (9) The Authority received 18 written responses from the public.
 - (10) On 2 September 2017, the Authority issued a notice extending the EGD until 2nd March 2018, in accordance with section 66(6) of the RAA.

4 Final Determination

- (1) Pursuant to section 62 of the RAA and in accordance with sections 6, 14, 36, 65(2) and 68 of the EA using the general powers granted to the Authority under section 13 of the RAA and in accordance with the procedures established for this purpose in section 62 of the RAA, the Authority hereby determines that:
- (2) The adoption and implementation of the Transitional Measures for BELCO's Renewable Energy Metering Scheme as set forth in paragraph 5 of this Schedule below is in the public interest and would (i) provide certainty on this matter to sectoral providers; (ii) promote the use of cleaner energy sources and technologies; (iii) provide sectoral participants and end-users with non-discriminatory interconnection to transmission and distribution systems; (iv) promote the Bermuda economy; and (v) promote and preserve competition.

5 Transitional Renewable Energy Metering Scheme

- (1) BELCO shall continue to operate its Small Scale Residential Net Metering Scheme in accordance with the following recommendation set out in section 2 of the EC Response:

The transitional solar PV power purchase program should be adopted for both the residential and commercial solar PV producers with the BELCO avoided cost proposed rate of \$0.1736 per KWh for new renewable energy systems going forward, with no limit on the number of participants as proposed by BELCO.

For the avoidance of doubt, BELCO shall pay to Renewable Energy Participants a rate of \$0.1736 per KWh in respect of any energy exported to BELCO's grid in any calendar month and which they sell to BELCO, until the issuance by the Authority of any Administrative Determination pursuant to section 37 of the EA.

- (2) The transitional Feed-in Tariff methodology set pursuant to section 36 of the EA shall be based on the net avoided costs of generation, further described in paragraph 5(3) of this Schedule. This Feed-in Tariff methodology shall be

transitional pursuant to further public consultation and analysis on key issues, including economic benefit.

- (3) The following categories are relevant in estimating the net avoided costs of generation which would constitute a benefit from deployment of distributed renewable generation (section 36(a)(i) of the EA).
 - (a) Reduction in fuel costs and other variable operating costs of generation. Distributed renewable generation may permit the avoidance of some variable operating costs of overall system generation that would otherwise be incurred. For example, since distributed generators supply renewable energy to the network, the TD&R Licensee can purchase less energy from a bulk generation licensee. Consequently, the bulk generation licensee reduces its fuel costs and other variable operating costs. The reduction in fuel costs and other variable costs does not have to be estimated based on the costs of bulk generators currently connected to the network. For example, where data is available, it would be appropriate to consider the reduction in costs that would arise in a projected least-cost scenario within an integrated resource planning (“IRP”) process.
 - (b) Reduction in further generation capacity requirements. Distributed renewable generation may mitigate the need for further investment in centralised generation capacity. For example, if, according to the IRP, the existing bulk generation licensees’ capacity is not able to meet total demand, or is not able to maintain the required level of system reliability, a significant amount of distributed renewable generation capacity could allow the avoidance of some additional fixed costs of installing further centralised generation.
 - (c) Reduction in the TD&R Licensee’s network losses. Where there is a high correlation between a customer’s demand and on-site generation, the energy losses associated with transmission and distribution may decrease with connecting distributed generators to the network
- (4) BELCO shall continue to pay Renewable Energy Metering Payments to Renewable Energy Participants in accordance with paragraph 5(1) of this Schedule pending issuance by the Authority of any Administrative Determination setting the Feed-in Tariff pursuant to section 37 of the EA using the Feed-in Tariff methodology set forth paragraph 5(2) of this Schedule.