E&U 2020 – 2 - Consultation

Proposed Renewable Energy Capacity Reallocation and Tariff Setting

UTILITY REGULATION AND COMPETITION OFFICE
THE CAYMAN ISLANDS

Launch Date: 20 April 2020

Closing Date for Comments: 20 May 2020

Contents

A. Introduction

1. The Utility Regulation and Competition Office (the 'Office') is the independent regulator for the electricity, information and communications technology, water, wastewater and fuel sectors in the Cayman Islands. The Office also regulates the use of electromagnetic spectrum and manages the .ky Internet domain.

2. Different decisions by the Office will affect persons and organisations throughout the country in different ways. It is therefore important that the Office makes regulatory decisions with the appropriate input from persons with sufficient interest or who are likely to be affected by the outcome of such decisions. Consultation is an essential aspect of regulatory accountability and transparency and provides the formal mechanism for these persons to express their views in this manner. The requirement for the Office to consult is mandated in its enabling legislation.

3. Under its enabling and foundational legislation, the Office has several principal functions. One of these principal functions is to protect the short and long-term interests of consumers in relation to utility services. The Office may do so by making administrative determinations, decisions, orders and regulations.

4. The purpose of this consultation paper is to seek the views of operators, the general public, and other interested parties, on the Proposed Renewable Energy ("RE") Capacity Reallocation and Tariff Setting ("RECRTS") in relation to the Electricity sector in the Cayman Islands.

5. This is a consultative document which describes, and invites comments, on the Proposed RECRTS, that should be applied to existing Distributed Energy Resources (DER) capacity in the Cayman Islands' electricity sector. This proposed reallocation and tariff setting is in keeping with the provisions of the Electricity Sector Regulation Law (as revised) (the "ESR Law") and the Electricity Licences, under which licensees operate.

6. The RECRTS proposal outlines the legal basis for the capacity reallocation and tariff setting, identifies the approach and principles applicable. In developing this proposal, OfReg has sought to avoid unnecessarily increasing the regulatory burden on stakeholders. OfReg envisages that the Draft RECRTS contained in this consultation paper would achieve that aim.

7. Stakeholders and other individuals with an interest in contributing to the content of the RECRTS may do so by providing feedback on this document.

B. Legal Framework

8. The Office is guided by its statutory remit in developing the RECRTS, notably the provisions which follow.

9. Pursuant to section 6(1) of the Utility Regulation and Competition Law (as revised) (***"***URC Law***"***), the Office regulates prescribed utility services in the Cayman Islands.

10. **Section 6(1)** of the URC Law provides, inter alia, that the principal functions of the Office in the markets and sectors for which it has responsibility, are:

a) "…;

b) to promote appropriate effective and fair competition;

c) to protect the short- and long-term interests of consumers in relation to utility services and in so doing

i. …;

ii. ensure that utility services are satisfactory and efficient and that charges imposed in respect of utility services are reasonable and reflect efficient costs of providing the services;"

11. In addition, specific to the electricity sector, sub-section 9(2)(q) of the ESR Law states inter alia, that without prejudice to subsection (1), the principal functions of the Office shall include:

> "q) to authorise a T&D licensee to purchase renewable or alternative forms of energy from consumers who generate electricity for self-supply subject to the requirements of the *Electricity Law* (*2008 Revision*) and regulations made thereunder."

12. **Sub-section 9(5)(i)** of the Law reads inter alia:

"the need to permit and promote the use of renewable or alternative forms of energy by consumers so as to reduce the load on any T&D system.";

13. **Sub-section 6(2)(d)** of the URC Law states that the Office, in performing its functions and exercising its powers under the URC Law or any other Law, may "*make administrative determinations, decisions, orders and regulations*", and may "*take any other action, not expressly prohibited by Law, that is necessary and proper to perform its duties under this Law and sectoral legislation.*"

14. **Sub-section 7(1)** of the URC Law requires the Office, before issuing an administrative determination which in the reasonable opinion of the Office is of public significance, "*… to allow persons with sufficient interest or who are likely to be affected a reasonable opportunity to comment on the draft administrative determination*."

15. It is the position of the Office that it retains the right to make administrative determinations when appropriate but not so frequent so as to render the electricity sector licensing framework arbitrary, but in any event, only after consultation.

16. This Consultation Paper outlines how the Office is considering the appropriateness of transferring 1MW of RE capacity from the DER programme to the CORE programme, setting the tariff to be paid to producers/suppliers of renewable energy to the grid, and how the Office will prepare an administrative Determination setting forth the instructions for the electricity sector.

C. Background

17. The Cayman Islands have a history of capitalising on local RE resources, having harnessed solar energy for electricity production. Technological evolutions have produced a significant reduction in the costs associated with the use of this resource. Solar PV costs have fallen 77 per cent[2] between 2010 and 2018, and Battery storage costs have fallen 85 per cent[3] between 2010 and 2018. These evolutions provide significant benefits to the Cayman Islands, particularly in light of the country's National Energy Policy's (NEP) aspirational goal to move to 70% of energy being produced by RE by 2037.

18. Currently, the Cayman Islands' electricity demand is being met by both Caribbean Utilities Co. Ltd., (CUC) on Grand Cayman, and the Cayman Brac Power & Light Co. Ltd. (CBP&L) on Cayman Brac and Little Cayman. These vertically integrated utilities provide generation, transmission and distribution services. This power is generated primarily from conventional fossil fuel, with a current installed capacity of 160.95 MW in Grand Cayman and 15.3 MW on Cayman Brac and Little Cayman.

19. Local households and small business premises with an electricity generating system connected to the transmission and distribution network (solar, wind or waterpower) can get considerable savings through a subsidised CORE rate, and via the CORE programme, consumers receive the rate for 100% of their production. Through the DER programme, consumers get paid for whatever excess they do not consume and export to the grid. These consumers still receive savings through the DER programme although not as significant as through subsidised CORE rates.

20. A FITS may be defined as a pricing mechanism whereby an electric utility pays a customer for the electricity generated by the customer's distributed generation systems and exported (i.e. 'fed-in') to the grid, usually over a guaranteed period. Historically, FITS have been based on a price being paid to the customer that is in excess of the normal wholesale cost of electricity generation, and sometimes in excess of the retail price of electricity. It has been used as a policy instrument to promote RE objectives. Accordingly, it is usually set at a level which incentivises investment in RE projects. In Grand Cayman this feature was aligned with the policy goal to promote and incentivise early adoption of the local distributed RE generation sector. Globally, many FITS programmes are now being ceased or completely revamped.

21. These 'distributed generators' are connected to the network through import/export meters which record the amount of electricity imported from, and exported to, the network.

Current Situation

22. Recently, there has been a drive towards RE generation, and BMR Energy now owns the Bodden Town Solar I - 5 MW utility-scale solar photovoltaic (PV) plant that supplies RE to CUC. Additionally, CUC purchases RE from 432 customers who, as of 31 December 2019, supply 5.611 MW of the 8 MW of distributed solar PV allocated to CORE. The remaining 2.389 MW has been allocated to approved systems that are in the works. The estimated cost of fossil fuel generated electricity fluctuates with the price of oil on the international market.

23. There are two RE programmes and three FIT rates available to Grand Cayman's electricity consumers:

- The CORE programme which was piloted in 2009 by CUC and the former ERA designed to promote and incentivise the adoption of RE. It offered 1 Megawatt (MW) of capacity that paid the utility's avoided cost as the very first CORE FIT rate. However, uptake was slow to start due to the anticipation of net metering as opposed to FITS. In February 2011, the ERA approved revisions to the CORE programme and introduced the subsidised CORE rate of CI$0.37/kWh. In September 2012, the ERA approved rates of CI$0.385/kWh and CI$0.375/kWh for residential and commercial consumers respectively. Commercial installations dominated the adoption, so the ERA reduced rates and allocated capacity limits to both residential and commercial systems. Rates were dependent on the size of the system (tiered rates) to incentivise consumers to install efficient and productive systems. System sizes were also capped to ensure everyone was afforded the chance to participate (0-5 kW – CI$0.30/kWh, 5-10 kW – CI$0.26/ kWh and, 20-100 kW – CI$0.21/kWh for the Cayman Islands' Government (CIG). These premium rates obtain for the life of the contract with CUC. CORE capacity was also increased over the 2010 to 2018 period, with current caps at 8 MW for private sector and 1 MW reserved for CIG. Press releases were issued each time additional tranches of capacity were made available to ensure that stakeholders were aware of what was being done; and

- The DER programme which was introduced in January 2018 with an initial allocation of 3 MW of capacity for customer participation in renewables. It also allows customers to generate and consume their own renewable energy and sell to CUC any excess electricity produced and exported to the grid at an avoided cost-of-generation credit rate. Guided by other jurisdiction experiences with early net-metering (NM) programmes, DER customers are billed via a demand rate structure. The demand rates align the fixed costs of implementing a grid interconnection and standby power to the

customer with demand charges, thus avoiding any potential cross-subsidisation between DER and non-producing customers. There are three (3) customers that account for approximately 500 kilowatts kW of this capacity. This programme aligns with the NEP's goals of the growth of customer-owned, distributed renewable generation, reduction of greenhouse gases (GHGs) and Cayman's carbon footprint, as well as lowering the cost of energy in the Cayman Islands.

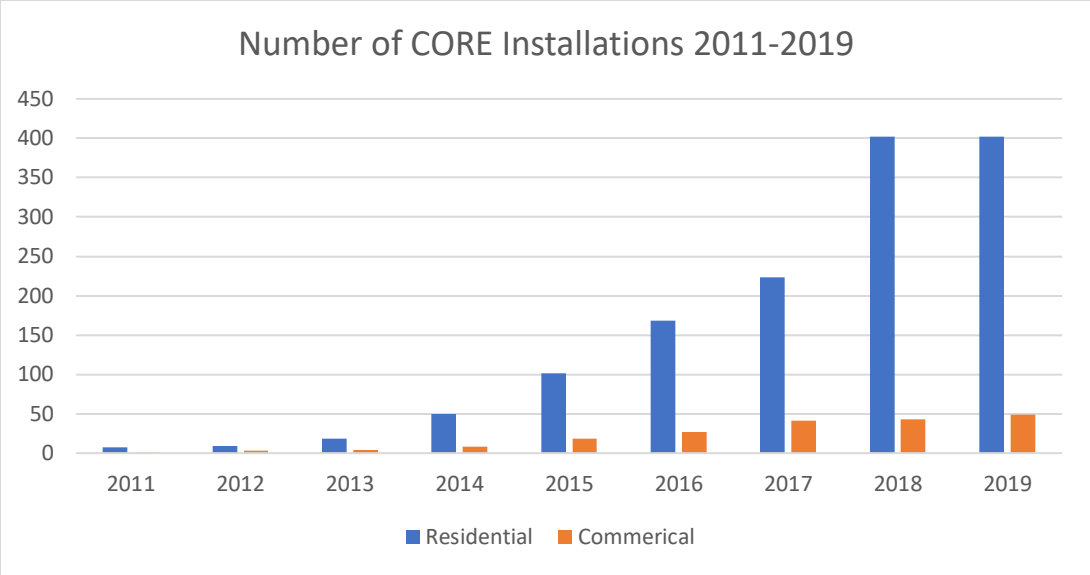
24. On review of the CORE programme uptake, the ERA approved CUC's request to conduct an Infusion Study and RE Capacity Study. This independent analysis concluded that 15 MW of RE capacity could be added to CUC's Transmission & Distribution (T&D) system based on its engines' historical economic dispatch levels of 75% maximum continuous rating (MCR), with no significant impact to fuel costs. The Infusion Study report was published on 4 March 2017. Following this, OfReg and CUC agreed to a 17 MW intermittent RE capacity limit without a need for additional investment in infrastructure.

25. The current allocation for RE on the CUC T&D system is thus:-

- 9 MW to CORE including 1 MW reserved for Cayman Islands Government (CIG);
- 5 MW to Bodden Town utility-scale solar PV generating plant; and
- 3 MW to the DER programme.

26. Exceeding this power mix introduces several conditions that challenge grid reliability and stability while degrading CUC fuel efficiency and increasing fuel costs to consumers.

27. As of the fourth (4th) quarter of 2019 the total grid-connected installed capacity of solar photovoltaic ("PV") is approximately 10.6 MW and represents approximately 6% of the island's total generation capacity. About 50% of the total solar PV capacity was installed as utility-scale generation, while the remaining were installed on commercial and residential premises. Figure 1 shows the growth of distributed solar PV capacity in Grand Cayman since 2011. For residential consumers who install solar panels on their roofs, the typical size is less than 5 kW.



28. As aforementioned, the former ERA approved the existing FITS programme in 2011. The following table shows the history of the programme to date. Capacity tranches at reduced rates have been progressively issued based on demand and CUC's systems' technical constraints. Typically, the tariff is reduced as economies of scale develop. However, it is difficult to set the reductions in the tariff levels in a measured way that doesn't either crater the market or drive demand too fast.

Launch date	Capacity	Rate paid	System Cap	Result
2009	1MW	'avoided cost'	50kW – large commercial systems	1 customer
Feb. 2011	1MW	$0.37/kWh	20kW & 50kW	1 customer
Sep. 2012		$0.385/kWh/Residential $0.375/kWh/Commercial	100kW commercial systems	Significant uptake beginning in 2013 and accelerating in 2014. Previous 2MW allocation used up requiring additional capacity.
Feb. 2015	1MW Interim increase	Ditto	Ditto	
Mar. 2015	2MW	$0.28/kWh/Residential $0.32/kWh/Commercial	Ditto	Uptake decreased – CREA attempted to have ERA reverse changes. Uptake accelerated in Dec 2015 and CUC reported 4 MW of capacity nearly exhausted.
May. 2017	2MW	$0.30/kWh	Up to 5kW	Uptake continued
		$0.26/kWh	From 5kW – 10kW	
Feb. 2019	1MW	$0.28/kWh	Up to 5kW	Uptake continued
		$0.24/kWh	From 5kW – 10kW	
Previously issued	1MW	$0.21/kWh	20kw – 100kW	Reserved for CIG

Table 1 CORE Programme Rollout

29. On 6 December 2019, the Board's approval of the final 1 MW tranche placed the CORE programme at its ***maximum capacity of 9 MW*** and this was publicly announced. The press release alerted solar system vendors that there was no more CORE capacity available to install systems. OfReg's board acknowledged that the programme would come to a natural end once all of the existing capacity was used.

30. OfReg and CUC have subsequently been exploring ways to increase RE capacity deployment and OfReg's board recently approved CUC's 20 MW energy storage project which when implemented, will allow another 12 MW of capacity for RE. This increases the current and not so distant future intermittent RE capacity limit from 17 MW to 29 MW without degrading CUC's fuel efficiency and reliability which are other metrics and costs that OfReg regulates. This additional 12 MW of capacity provides both certainty and sufficient leeway for CREA and other solar systems providers to continue their operations.

31. CREA has stated that the cessation of the CORE programme has dramatically affected their businesses and has asked OfReg to reallocate some capacity from the DER programme and also asked CIG to surrender a portion of its 1 MW capacity to enable solar system vendors to continue doing business. CREA proposed this reallocation as an interim measure pending the implementation of the CUC 20 MW energy storage project.

The Objectives

32. The objective of the RE capacity reallocation and tariff setting proposal is to ensure fairness in the attribution of cost, transparency in the allocation process, and consistency in the application of the methodology established.

33. There are several key issues which must inform the Regulatory Impact Analysis (RIA) of this proposal.

These include:

a. *The problem that exists;*
b. *The rationale for intervention; and*
c. *Policy objectives.*

Problem

34. The Cayman Islands electricity market is relatively small and isolated. It is therefore important that the design elements of any FITS programme are

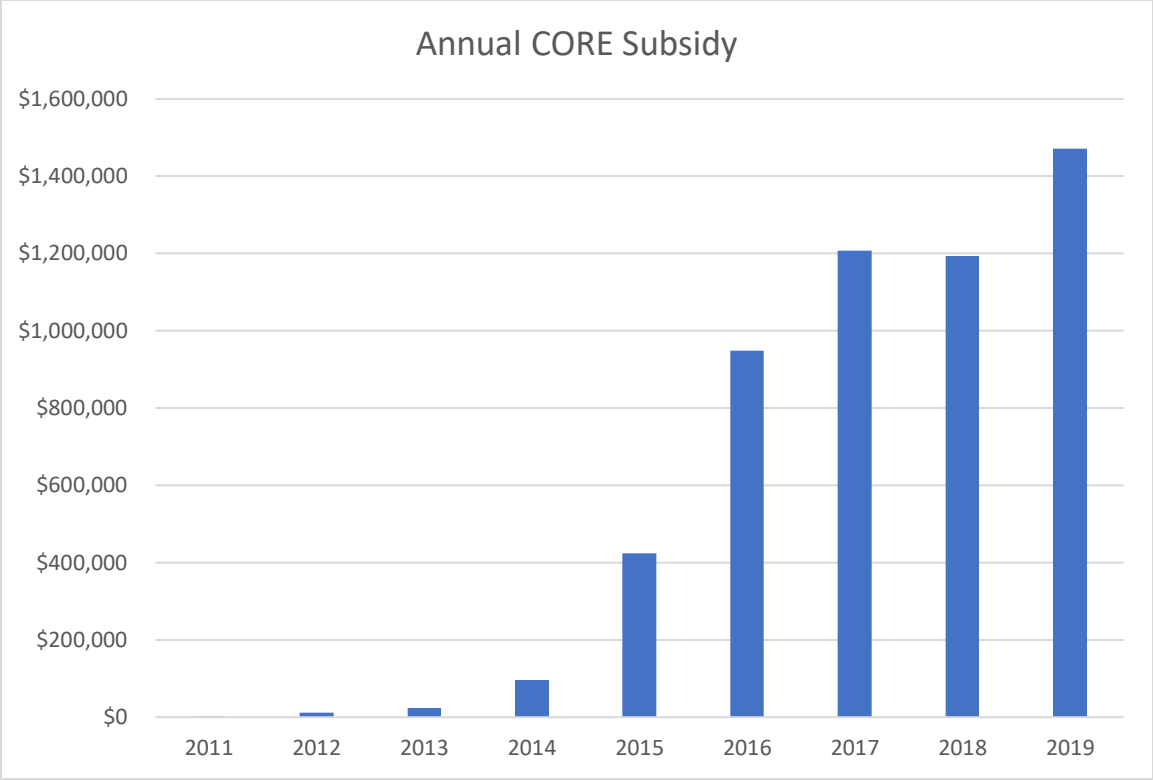
appropriate for the local context. These elements should balance the expectations of the investor, the Licensee CUC, with the needs of the consumer, in order to ensure that the programme leads to technically, financially and environmentally sustainable outcomes.

35. The CORE programme is fully subscribed i.e. the 8 MW of capacity that was allocated for private installations has been assigned. As there is a technical limit on the amount of renewables that can be connected to the grid the point has been reached where no further intermittent generation capacity can be allowed into the system without the need for additional investment. Consequently, CREA's members and other solar systems providers have requested that OfReg reallocate 1.4 MW of capacity apportioned from the existing 3 MW DER programme and the 1 MW CIG CORE allocation as an interim measure until the CUC 20 MW Energy Storage System (ESS) is completed, as their industry has grinded to a halt. CREA claims that the DER programme "does not work" as it is not "bankable" but have provided no empirical or quantitative evidence to verify these assertions, and that the CIG capacity is not being fully used in the short to medium term.

36. The CORE/FITS was introduced to support the widespread adoption of proven small-scale (up to 100kW) low-carbon electricity generating technologies. The scheme was intended to give the wider public a stake in the transition to a low-carbon economy and in turn foster behavioural change that would support the development of local supply chains and reductions in energy costs. However, the incentives to support the distributed solar energy programme primarily benefit wealthier customers who can afford solar PV systems, which can develop into a regressive policy if it results in higher electricity costs for those customers who cannot afford solar.

37.The FITS programme allows CUC to purchase energy from CORE generators and to pass this cost through the fuel factor, ultimately to consumers, regardless of whether or not they directly participate in the scheme. Essentially, the programme is subsidised by the non-CORE customers as the rate paid to CORE customers for their electricity production is higher than the cost CUC would normally incur and charge to customers for the same unit of energy. That is why controlling costs was paramount in the reviews of the scheme in 2011/12, 2015, 2016, 2017, 2018 and 2019, the latter of which provided consumers and industry with clarity on levels of small-scale low-carbon electricity support until December 2019.

38. The following figure shows the annual subsidy consumers have been paying for CORE since its inception that is, the added cost of consumer-subsidised CORE FIT rates compared to having unsubsidised CORE rates.



39. Over time, the cost of RE technologies has decreased and is likely to continue to do so in line with technological advances. Therefore, a flexible pricing methodology is required such that changing costs are more accurately and easily reflected.

Rationale

40. A RE capacity reallocation and tariff setting potentially helps to increase the opportunities for consumers to produce their own RE and to deploy more solar energy to the grid.

41. This consultation investigates rationale for the RE capacity reallocations and tariff setting for Roof Mounted Solar PV and Ground Mounted Solar PV, including small scale wind generators. It is proposed that any new FITS tariff be set at rates that provide for the following features, which the Office proposes to consider:

a) The minimisation of investor and financing risks to allow for low risk debt financing and low risk returns on investment;

b) Establishing a tariff, if done, to avoid any further cross-subsidation by consumers;

c) A degression schedule to reflect the declining cost of production over time and to incentivise innovation. As costs decline and new, smart technologies

become accessible, market incentives are beginning to align with government's NEP objectives meaning that it is important that OfReg's interventions reflect such development and do not place an undue burden on consumer bills;

d) Capacity cap regulations for grid sub-sections to ensure grid stability and reliability and to ensure enough capacity available to all consumers;

Policy

42. The policy objective regarding the RE capacity reallocation and tariff setting is to continue to encourage more installation of solar systems and also ensure that no further subsidy support and limit the impact of future deployment on consumer bills.

43. Energy security is an important consideration for the Cayman Islands and has recently been the subject of critical national infrastructure (CNI) protection discussions. Therefore, it is important to ensure that the future development of solar is consistent with the need to provide reliable and affordable electricity.

44. Given the intermittent nature of RE generation systems, both frequency and voltage regulation and spinning reserves are required to ensure system stability. For example, cloud cover or shadows may cause solar PV output to drop quickly, which requires the need for regulation and/or spinning reserves to make up for the shortfall. Without the corresponding reserves capacity as back-up, consumers are exposed to the risk of power disruptions and brownouts, which has happened in other countries with large amounts of intermittent sources.

45. OfReg notes that utility-scale facilities are more reliable — they are maintained with much more rigour and attention than the average rooftop system, and are more flexible, being able to switch on and off rapidly in response to demand signals. It's also more economical to add battery storage to a large solar plant than to each individual household.

46. In other jurisdictions the 'fair and reasonable' FIT rate is determined by the Economic Regulator. Accordingly, OfReg has committed to reduce the solar FIT rate for any additional CORE capacity, and opines that the FIT will suitably reward those who look to incentivise further installation of solar. With the new levelised cost of energy rate as a successor to current CORE rates, solar customers will be credited at the utility's avoided cost for any excess electricity delivered to the grid. It is proposed that with the reallocation of the 1 MW of capacity, all new CORE consumers will earn this rate to address the inequality in CORE and Non-CORE customer costs.

47. The Office is therefore considering whether it is prudent to reallocate a portion of the DER programme to the CORE programme in the interim and also set a new FIT rate for the reallocated capacity. The proposed changes identified in this

consultation paper will facilitate the integration of additional intermittent generation, while safeguarding system stability and reliability of electricity supply to consumers. OfReg also seeks to ensure that all consumers can fully benefit from innovation and that their interests are adequately protected.

48. This paper has described a situation that the Office wishes to obtain the views of the public and the industry on the following matters:

a. The reallocation of 1 MW of the DER programme capacity to the CORE programme to allow solar system vendors to continue their business operations until the CUC 20 MW battery storage project commences operation.

b. Setting the tariff for the reallocated capacity at the levelised cost of energy rates; and

c. Reviewing of the tariff paid with technological evolutions that reduce the cost of production of RE.

D. Consultation Questions

49. Interested parties are invited to comment on the RE Capacity Reallocation and Tariff setting proposal for the electricity sector.

50. In particular, the Office welcomes responses in relation to the questions outlined below.

1. What are your views on the appropriateness of the aforementioned reallocation? Are there any other criteria that you consider a priority? Please explain why.

2. State, giving reasons, whether you agree that 1 MW of the DER programme capacity should be transferred to the CORE programme?

3. What would the impact be of not allowing the RE 1 MW capacity reallocation to the CORE programme? Please provide evidence.

4. Do you agree that the new tariff should be the levelised cost of energy rates for this 1 MW of capacity?

5. Do you agree that capacity limits for RE systems, that are differentiated based on location and feeder capacity, should be implemented for the grid as a stability safeguard?

6. Are there alternative mechanisms (other than changes to FITS) that could be used to incentivise and reward the installation of rooftop solar generation?

7. Are the opportunities to benefit from rooftop solar available equitably across the community?

8. Do the costs of incentivising further solar installations outweigh the benefits to non-CORE consumers?

9. Any other relevant matters that the person or group submitting would like to raise for consideration.

E. How to Respond to This Consultation

51. This consultation is conducted in accordance with the Consultation Procedure Guidelines determined by the Office and found on the Office's website.[1]

52. The Office considers that because the proposed capacity reallocation and revised tariff are published as part of this consultation, it will be conducted as a single-phase consultation over a period of thirty (30) days. Where, upon review of the responses to the consultation, it becomes clear that a second phase of consultation is required, a further notice will be issued accordingly. Following the end of this consultation, a draft administrative determination will be prepared regarding the proposed RE capacity reallocation. As noted above, section 7(1) of the URC Law states that prior to issuing an administrative determination of public significance, the Office shall "issue the proposed determination in the form of a draft administrative determination."

53. All submissions on this consultation should be made in writing and must be received by the Office by 5 p.m. on 20 May 2020 at the latest.

54. The Office will post any comments received within the stated deadline on its website by 5 p.m. on 3 June 2020.

55. Submissions may be filed as follows:

By e-mail to:
consultations@ofreg.ky

Or by post to:
Utility Regulation and Competition Office
P.O. Box 10189
Grand Cayman KY1-1002
CAYMAN ISLANDS

Or by courier to:
Utility Regulation and Competition Office
3rd Floor, Alissta Towers
85 North Sound Rd.
Grand Cayman
CAYMAN ISLANDS

56. If a respondent chooses to file any information in confidence with OfReg, it should, at the time of making its filing, also file redacted versions for the public

[1] http://www.ofreg.ky/upimages/commonfiles/1507893545OF20171DeterminationandConsultationProcedureGuidelines.pdf

record along with the reasons for each confidentiality claim and the other requirements for confidentiality claims as specified in section 107 of the URC Law.

57. If a respondent chooses to apply to the Office for an extension of the time to file comments or reply comment, it must do so no less than four (4) days before the day of the existing deadline, include a complete and detailed justification for the request, and copy all other respondents (if known) at the same time as it applies to the Office. The other respondents (if applicable) may comment on the application for an extension within two (2) days of submission of the application, copying all other respondents at the same time. The Office reserves the right not to accept applications for extensions that do not satisfy these requirements. However, at no time will the Office accept an application for an extension submitted after the deadline in question has passed.

58. The Office expects to issue a Determination regarding the proposed capacity reallocation and revised tariff by the third (3rd) quarter, 2020.

59. Upon issuing a Determination, the Office will make a recommendation to the Board that the RECRTS be authorised, in accordance with sub-**section 9(5)(i)** of the ESR Law.

2 Renewable Power Generation Costs in 2018, IRENA, 2018.
3 Bloomberg New Energy Finance Survey, 2018.