



# FAIR TRADING COMMISSION

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## DECISION

On

### Feed-in-Tariffs for Renewable Energy Technologies above 1MW and up to 10 MW

**DOCUMENT NUMBER: FTCUR/DECFIT/2020-01**

**DOCUMENT TITLE: Decision on Feed in Tariffs for Renewable Energy Technologies between 1MW and 10MW**

**ANTECEDENT DOCUMENTS**

<b>Document Number</b>	<b>Description</b>	<b>Issue Date</b>
<b>FTC/URD/CONFIT - 2019-03</b>	Consultation Paper on Feed-in-Tariffs for Renewable Energy Sources	29 May, 2019
<b>FTCUR/DECFIT/2019-04</b>	Decision on Feed in Tariffs for Renewable Energy Technologies up to and Including 1MW.	24 August, 2019

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## LIST OF ABBREVIATIONS

AC	Alternating Current
BL&P	Barbados Light & Power Company Limited
BNEP	Barbados National Energy Policy
COD	Commercial Operation Date
ELPA	Electric Light and Power Act, 2013-21
FIT	Feed-in-Tariff
FTCA	The Fair Trading Commission Act CAP. 326B
GoB	Government of Barbados
IDB	Inter-American Development Bank
IRENA	International Renewable Energy Association
LCOE	Levelised Cost of Energy
MEWR	Ministry of Energy and Water Resources
PPA	Power Purchase Agreement
PV	Photovoltaic
RE	Renewable Energy
REC	Renewable Energy Credit
The Commission	The Fair Trading Commission
URA	Utilities Regulation Act CAP. 282
The Consultant	Ostrander Consulting
WACC	Weighted Average Cost of Capital

## **SECTION 1      DECISION SUMMARY**

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The GoB, through the BNEP, has plotted the course towards a goal of 100% RE by 2030. To facilitate this undertaking, a stable pricing framework is necessary. On August 24, 2019, the Commission issued its Decision on FITs for systems up to and including 1 MW. Given the urgent need to spur further economic activity in the RE sector the Commission has determined that for systems above 1 MW and up to and including 10 MW, a FIT mechanism shall be the accepted methodology employed for establishing stable prices, until otherwise determined. To this end, the Commission has established the following extension of the FIT mechanism, according to the guidelines outlined in the BNEP:

- I      The effective start date for this extension of the FIT programme shall be October 1, 2020. The applicable categories, rates and capacity allocations shall be as set out at paragraph IV hereof. The rates to be applied to all new projects sized over 1MW up to 5 MW shall remain applicable for eighteen (18) months until March 31, 2022. However, should there be a material change in the market, such as the exhaustion of capacity, a review may be undertaken earlier. The rates for all new projects sized over 5 MW up to 10 MW shall remain applicable for seven (7) months until March 31, 2021 or until such time as a competitive procurement framework is established.**
  
- II     All terms of all FITs procured under this decision shall remain constant for the duration of the 20-year contract.**
  
- III    The FIT shall be based on a 20-year fixed tariff with no front-loading and differentiated by technology and size. The tariff is based on the LCOE, using a multi-criteria approach according to the guidelines espoused in the BNEP. See Table below.**

*Fit Policy Design*

FIT Policy Element	RE Systems above 1 MW up to and including 10 MW
Proposed Effective Date	October 1, 2020
Rate: Fixed, Tiered or Variable Options	Fixed
Rate: Differentiated by Technology & Size	Yes
Tariff Duration	20 years
Administratively-Determined or Competitively-Bid	Administratively-Determined
Presumed Off-taker	BL&P
Quantity Covered by FIT	100% of output

**IV The applicable categories, rates and capacity allocation shall be as outlined below:**

Technology, Size Category	October 1, 2020 – March 31, 2022 FIT (BDS cents/kWh)	October 1, 2020 – March 31, 2022 Allocation (MW)
Solar PV, above 1 MW and up to 5 MW	23.25	30
Land-based Wind, above 1 MW and up to 5 MW	22.25	10
<b>Total Allocation</b>		40

Technology, Size Category	October 1, 2020 – March 31, 2021 (BDS cents/kWh)	October 1, 2020 – March 31, 2021 Allocation (MW)
Solar PV, above 5 MW and up to 10 MW	21.75	25
Land-based Wind, above 5 MW and up to 10 MW	20.25	10
<b>Total Allocation</b>		35

- V The capacity refers to AC current. Any unutilised capacity shall be transferred from one technology to the other, where applicable.**
  
- VI Under this extension of the FIT programme the billing arrangement shall be “Buy all/Sell all”.**
  
- VII. At the end of the 20-year FIT contract period, a new contract will need to be negotiated based on the existing value of the assets, the avoided cost of fuel or such other factors as may be determined by the Commission, in its sole discretion, at that time.**

### 2.1 INTRODUCTION

The GoB in its BNEP has initiated a move to a position where 100% of the island's electricity will be generated from RE by the year 2030. This is in an effort to reduce the country's dependency on fossil fuel; currently, 95% of electricity generation is from this source. On September 24, 2019, the Commission issued its Decision on Feed-in-Tariffs for Renewable Energy Technologies up to and including 1MW, document no. FTCUR/DECFIT/2019-04 (hereinafter referred to as "previous FIT Decision"). This decision is predicated on the assumptions as stated in the aforementioned previous FIT Decision. The intervenors' submissions made when determining the FIT rates for systems below 1 MW were also taken into consideration here as the consultation at that time considered the application of FITs generally. Given the current climate within the RE sector and the level of investment required to achieve the GoB's goal of 100% RE by 2030, there is need for rates to address systems beyond 1MW. These systems are considered utility scale projects in the Barbados context.

The term 'utility scale RE project' is qualified by the market that it operates in and the intended function of the project. These projects are connected to operate in parallel with the main utility grid (i.e. in front of the meter) and provides purchased electricity directly to the utility. The definition of utility scale varies across jurisdictions due to investment opportunities in their respective energy markets. As an example, the National Renewable Energy Association (NREL) defines utility scale as project 5 MW or greater<sup>1</sup>, the U.S. Energy Information Administration considers generation facilities 1 MW and greater as utility scale<sup>2</sup>, whereas projects 10 MW and up is also considered utility scale by the U.S. Energy Department<sup>3</sup>. Within the Barbados RE context, given the small size of the electricity market as a whole and the

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<sup>1</sup> National Renewable Energy Laboratory. (2012). Utility-Scale Concentrating Solar Power and Photovoltaics Projects: A Technology and Market Overview. Colorado: National Renewable Energy Laboratory.

<sup>2</sup> U.S. Energy Information Administration. (2019, February 7). Most U.S. utility-scale solar photovoltaic power plants are 5 megawatts or smaller. Retrieved from Today in Energy: <https://www.eia.gov/todayinenergy/detail.php?id=38272>

<sup>3</sup> U.S. Department of Energy. (n.d.). Renewable Energy: Utility-Scale Policies and Programs. Retrieved from Office of Energy Efficiency and Renewable Energy: <https://www.energy.gov/eere/slsc/renewable-energy-utility-scale-policies-and-programs>



impact that a single RE project, particularly a variable RE project is expected to have on the grid, projects above 1 MW capacity may be considered utility scale.

## **2.2 ROLE OF ECONOMIC REGULATOR**

As set out in Section 4(3) (a) and (b) of the FTCA and Section 24B(1)(a) and (c) of the URA, of the Laws of Barbados, the Commission is tasked with establishing principles for arriving at the rates to be charged by service providers and RE producers, as well as setting the maximum level of such rates. As was indicated in the previous FIT Decision, the Commission issued a public Consultation Paper dated 29 May, 2019, which solicited and received the views of stakeholders on the various pricing methodologies for RE technologies. The consultative process undertaken in arriving at the previous FIT Decision is the basis on which this determination was made.

This Decision outlines the Commission's determination to extend the FIT programme to RE systems above 1 MW and up to and including 10 MW, with a capacity of an additional 75 MW as advised by the Ministry responsible for energy. It is expected to provide a level of price certainty for investors with projects within this size category. Moreover, it is anticipated that this will advance the capacity requirements for meeting the 2030 target and assist in reducing the country's dependence on fossil fuel. This capacity refers to AC current. The Ministry responsible for energy has indicated that this 75 MW capacity allocation of the FIT programme will apply to RE systems above 1MW up to and including 10 MW. The FITs for RE systems above 1MW up to and including 5MW will apply up to March 31, 2022. Should there be a material change in the market, such as the exhaustion of capacity, a review may be undertaken earlier. RE systems above 5MW up to an including 10MW will be included in this 75 MW of the FIT programme up to March 31, 2021 or until a competitive procurement framework is established.

The Commission has determined the rates herein using the model outlined in the previous FIT Decision i.e. the FTC FIT Model 2019.

### **2.3 Submission of RE Project Information to the Commission**

The Utilities Regulation Act, CAP 282 (URA) was recently amended to confirm the Commission's authority to set RE rates. The determination of appropriate RE rates is influenced by the level of incentive needed to stimulate investment in the sector. The provision of technical and financial project data is expected to play a critical role in price discovery. Under Sections 3 (2A) and 24B (5) of the URA, the Commission is empowered to request information from service providers and RE producers, on their operational, financial, or any information which advances the function of the Commission. During the May 2019 consultation, information was received from a number of local RE installers and project investors.

## 2.4 Legislative Framework

**Section 2** of the FTCA and URA of the Laws of Barbados provides that “principles” means the formula, methodology or framework for determining a rate for a utility service, and stipulates that “rates” include

- (a) every rate, fare, toll, charge, rental or other compensation of a service provider or renewable energy producer;*
- (b) a rule, practice, measurement, classification or contract of a service provider or renewable energy producer relating to a rate; and*
- (c) a schedule or tariff respecting a rate.*

Under Section 3(2A) of the URA, “the Commission may request a service provider to provide the Commission with information relating to its operations, finances or such other information as the Commission may consider necessary to perform its functions.”

Pursuant to **Section 4(3)** of the FTCA, the Commission has responsibility to:

- (a) establish principles for arriving at rates to be charged by service providers and renewable energy producers;*
- (b) set the maximum rates to be charged by service providers and renewable energy producers;*
- (c) monitor the rates charged by service providers and renewable energy providers to ensure compliance; “*

The Commission also has this duty under **Section 3(1)** of the URA of the Laws of Barbados, which states:

- “The functions of the Commission under this Act are, in relation to service providers, to*
- (a) Establish principles for arriving at the rates to be charged;*
  - (b) Set the maximum rates to be charged;*
  - (c) Monitor the rates charged to ensure compliance”.*

Section 24B(1) of the URA establishes the functions of the Commission as it pertains to an interconnection agreement or any agreement in respect of the supply of electricity entered into by a RE producer. These are to:

- (a) establish principles for arriving at the rates to be charged;*
- (b) set the terms and conditions of the agreements;*
- (c) set the maximum rates to be charged under the agreements; and*

*(d) direct renewable energy producers to submit the proposals for the rates and terms and conditions relating to their agreements.*

Section 24B(2) states that:

“the Commission shall consult with renewable energy producers, representatives of consumer interest groups and other interested parties and shall have regard to

- (a) the national energy policy;*
- (b) the national environmental policy;*
- (c) the requirement to promote renewable energy and to enhance the security, affordability, safety and reliability of the supply of electricity.”*

Additionally, subsection (3) outlines the Commission’s functions with as it pertains to subsection (1) (a); this states that the Commission shall have regard to:

- (a) the promotion of efficiency on the part of renewable energy producers;*
- (b) ensuring that an efficient renewable energy producer will be able to finance its functions by earning a reasonable return on capital;*
- (c) such other matters as the Commission may consider appropriate.*

In relation to the energy stored from RE plants, subsection (4) stipulates that the Commission is required to:

- (a) set the maximum rates to be charged; and*
- (b) establish guidelines for interconnection.*

Subsection (5) stipulates that “the Commission shall request a renewable energy producer to provide the Commission with information relating to its operations, finances or such other information as the Commission may consider necessary to perform its functions.”

**Section 13(2) (a) (ii) and (iii)** of the ELPA stipulates that,

“Interconnection services referred to in subsection (1) shall be (a) offered at points along the public grid subject to

- (ii) such agreement between the parties as may be approved by the Commission for the purpose; and*
- (iii) the payment of such fee as may be specified by the public utility and approved by the Commission in respect of interconnection; “*

Further, **Section 13(3)** of the ELPA states that “The public utility shall purchase electricity from a licensee or other person referred to in subsection (1) at such rate as may be agreed by the parties and approved by the Commission.”

Additionally, subsection (4) states that:

“Where parties fail to agree on the terms and conditions of an agreement referred to in this section or a dispute arises in respect of such an agreement, any party may, in writing, refer the matter to the Commission for determination.”

The Commission considers that the provisions of the ELPA, URA and FTCA, when read together, empower the Commission to set rates for the supply and distribution of electricity in the RE sector of Barbados as set out in this Decision.

## SECTION 3 FEED-IN-TARIFF DESIGN AND ASSUMPTIONS

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### 3.1 Conceptualization of Tariffs

The Commission utilised an empirical model that comprised a number of assumptions for a resource cost-based FIT in Barbados. In the determination of rates for systems sized above 1 MW up to 10 MW, the same general assumptions used in the previous FIT Decision have been applied. It is based primarily on LCOE, which is a measure of the price required for RE projects to cover costs, meet debt obligations and furnish a reasonable rate of return to investors.

The FITs established in the previous FIT Decision took into account a balanced multi-criteria approach as outlined in the BNEP. Some of the factors under consideration are:

- Technology, size and application diversity;
- Maximizing local participation;
- Affordable energy for consumers;
- Sufficient deployment to meet the 100% RE by 2030 goal; and
- Facilitating effective competition in the market.

The FTC FIT Model 2019 facilitated the derivation of rates for solar PV and land-based wind systems in the capacity range above 1 MW up to and including 10 MW. A number of considerations were built into these rates. Principal among these were the falling prices of RE generation<sup>4,5</sup> worldwide, the Commission's regard for balancing the interest of the investor with the welfare of the customer and the economies of scale associated with the subject capacity range. Consequently, the following rates have been determined as given in Table 1:

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<sup>4</sup> IRENA (2019), Renewable Power Generation Costs in 2018, International Renewable Energy Agency, Abu Dhabi.

<sup>5</sup> Reve, Renewable Electricity Generation Costs, June 2019 <https://www.evwind.es/2019/06/21/renewable-electricity-generation-costs/67672> Accessed 11/21/2019.

**Table 1: Derived FIT**

<b>Technology, Size Category</b>	<b>FIT BDS cents/kWh</b>	<b>Term</b>
Solar PV, above 1 MW and up to 5 MW	23.25	20 Years
Solar PV, above 5 MW and up to 10 MW	21.75	20 Years
Land-based Wind, above 1 MW and up to 5 MW	22.25	20 Years
Land-based Wind, above 5 MW and up to 10 MW	20.25	20 Years
<b>Cumulative Cash Flow turns positive for all above systems (payback year) in</b>	Year 7	

### **3.2 FIT Policy Design Features**

The following section outlines the specific characteristics of the FIT design.

#### Official Commencement and Duration

It is determined that the FITs for systems above 1 MW and up to 10 MW shall take effect from October 1, 2020. These rates shall be applicable to all eligible projects receiving licences subsequent to the effective date of this decision as follows:

- RE systems above 1 MW up to and including 5 MW for a period of eighteen (18) months until March 31, 2022. Should there be a material change to the market, such as the exhaustion of capacity, an earlier review of rates may be undertaken by the Commission, and
- RE systems above 5MW up to an including 10 MW for a period of seven (7) months until March 31, 2021 or until such time as a competitive procurement framework is established.

The provision of rates for RE technologies in this specific capacity band seeks to stimulate the immediate interest of investors while moderating any potential impact on the consumer for these size projects; this arrangement is considered a proactive measure which will incentivise RE deployment at the utility scale, thus providing benefits of economies of scale through lower rates.

### Eligibility Parameters

In order to be eligible for the FIT, project developers must submit the relevant licence application to the Ministry responsible for energy. Eligible RE technologies are solar PV and land-based wind. As advised by the Ministry responsible for energy, capacity shall be allocated on a first come first served basis, out of a total capacity of 75 MW in this particular iteration. The submission of the complete licence application secures a spot in the queue of eligible projects. The time between the issuance of a licence and the COD shall be determined by the Ministry responsible for energy. Where extensions for RE projects are required, these timelines shall be determined by the Ministry with oversight on such matters.

### Contract Tenure and Price Structure

The FIT shall apply to the relevant RE technologies on a fixed price 20-year basis. For solar PV and land-based wind projects above 1 MW up to 10 MW, the FITs shall be subject to review as previously outlined. It is considered that this approach provides clarity and certainty, and is intended to attract the requisite level of investment to support rapid deployment and the eventual attainment of the RE targets.

### **3.3 Land Use Policy and RE Projects**

The granting of permission and determination of criteria for the allocation of RE projects to lands is done by the Ministry responsible for Town Planning.

### **3.4 Counterparty and Obligation to Purchase**

The BL&P, as the sole electric utility responsible for transmission and distribution, shall serve as the counterparty under the FIT programme and will purchase 100% of the output of each licenced RE facility for a period of twenty (20) years from the facility's COD.

RECs are established tradable and legal instruments by which the environmental and non-power attributes of RE generation are claimed. RECs are distinct from RE electricity production and are sold separately. One (1) REC is equivalent to One (1) Megawatt-hour of RE generation and delivered to the grid. It is anticipated that in the foreseeable future with the institution of RECs in the local RE market, this can provide further support to the sustainability



of the sector. RECs are not currently functionally recognised, created, or traded in Barbados but may become a part of the process with respect to demonstrating compliance with RE objectives in the future. In purchasing the output of the RE facilities under contract which potentially would include the sale of RECs, the BL&P will also be acquiring some environmental attributes generated by the project. Similarly, customers who purchase RECs from the utility grid can also claim rights to the benefits of the RE purchased. In the absence of a market for RECs, if RECs are sold outside of the country, Barbados would lose the right to claim the associated RE production because that right was sold to an external party that now owns the descriptive characteristics of that power, which cannot be double counted. Barbadian policymakers would want to preserve the opportunity to utilise these rights. Although the Commission has purview over the rates associated with RE, a determination as to whether RECs can be sold rests with the Ministry responsible for energy.

### **3.5 Billing and Compensation Framework for RE Projects**

Under the FIT programme, the “Buy All/Sell All” billing mechanism will apply to all eligible RE systems above 1 MW and up to 10 MW capacity range. In the “Buy All/Sell All” billing arrangement the customer is billed for all the energy consumed, regardless of the source, at the normal electricity rate, and credited for all the electricity generated from the RE system at the applicable FIT.

The terms and conditions in the PPA, mutually agreed between the parties (the utility and IPP), and approved by the Commission, shall apply to the RE generator(s) for the energy exported to the grid, the mode of compensation for energy purchased, and the periodicity of remuneration.

### **3.6 Interconnection Agreement**

For projects at this scale, utility scale, it is expected that costs associated with interconnection will apply. These costs will be contingent on project size and site location from the nearest accessible connection point to the utility grid. The interconnection agreement establishes rights

and obligations of the RE owner and the utility as it relates to interconnection equipment and performance. The content of the agreement is binding on both parties.

### **3.7 The Impact of the FIT on Customer Rates**

The short term analysis, 2021–2025, of the FIT indicates an average RE rate of \$0.2672/kWh and this rate is expected to decline with increasing economies of scale as more utility scale projects connect to the grid. In particular, the inclusion of cheaper land-based wind energy resource utilization should be pursued. The average FCA expected to be realised over the five (5) year period is \$0.2745/kWh from a maximum of \$0.3066/kWh to a minimum of \$0.2511/kWh. The FCA trajectory based on the analysis trends towards a potential reduction beyond 2025 as more utility scale RE is deployed, and global crude oil prices stabilise below the 2019 West Texas Intermediate and Brent benchmarks.

### **3.8 FIT Model Assumptions**

The following general input assumptions were used in the FIT model to determine the appropriate rates. Local data was utilised in most instances, however, research on RE pricing regionally, and internationally was consulted for comparative purposes in the determination of the RE rates herein. The revised assumptions were based on discussions with a range of local and regional funding institutions including the local banking sector, discussions with the IDB and resource documents from IRENA along with other research based data, to name a few. Specifically, discussions on the interest rate applicable, and investigations on the annual degradation seen on the various installations by technology, as well as the capacity factor for the various installations by technology were carried out. This research led to a downward adjustment in some inputs to reflect cost movements associated with development trends in solar PV and land-based wind technologies.

The model input assumptions were based on the four (4) main categories:

- Installed costs and performance statistics;
- Operating costs inputs;
- Financing inputs; and
- Other inputs.

The adjustments to model inputs for installed and performance parameters are depicted in Table 2 following:

Table 2-Installed Costs & Performance Input Assumptions

Technology, Size Category	Installed Cost BDS cents/kW	Capacity Factor	Annual Degradation	Analysis Term
Solar PV, above 1 MW and up to 5 MW	\$1,900	22.00 %	0.25%	20 years
Solar PV, above 5 MW, and up to 10 MW	\$1,804	22.00%	0.25%	20 years
Land-based Wind, above 1 MW, and up to 5 MW	\$2,980	35.00%	0.20% <sup>6</sup>	20 years
Land - based Wind, above 5 MW, and up to 10 MW	\$2,725	35.00%	0.20%	20 years

#### *Interconnection Costs*

These costs reflect metering and interconnection equipment associated with the RE technology. This cost is variable and depends on a variety of factors. The model accounts for the change in cost by assuming a conservative value throughout the capacity range.

#### *VAT & Import Duties*

The model assumes that all RE projects are exempt from VAT and import duties as has been articulated by the Barbados Revenue Authority<sup>7</sup>.

#### *Interest during the Construction Phase*

Interest is expected to accrue on construction financing associated with RE technologies. The model assumes an annual rate of 7.75% during the construction phase of the project. For solar PV and land-based wind projects greater than 1 and up to 10 MW capacity band, this value is applied assuming a linear draw down schedule for solar PV of 6 months, and for land-based wind, 9 months.

<sup>6</sup> New Land Based wind technologies output decreases by less than 0.20% for the first ten (10) years of operation.

<sup>7</sup> Division of Energy and Telecommunications, 2017: Renewable Energy and Energy Efficiency Fiscal Incentives Booklet for Individuals and Companies

### *Analysis Term*

The FIT determined for solar PV and land-based wind were based on assessment over a 20 year contract period. This duration allows investor the opportunity to recover costs associated with the RE investment and achieve the assumed after tax return on equity by the end of the 20-year term.

## **Operating Cost Assumptions**

### *Inflation*

Inflation estimates are based on local data and are assumed at 2% per annum on all operating costs for the project during the contract 20 year period.

### *Site Lease*

A 2% escalation rate is assumed in the model over the contract period and are based on local data.

### *Insurance*

Insurance in the RE sector is still in its infancy. Associated insurance costs are relatively higher than insurance rates seen in international RE markets. Local insurance values however, are incorporated into the model. For solar PV and land-based wind technologies, \$10/thousand insured is assumed.

### *Land Taxes*

The model assumes land tax rate of 0.95% of the value generated by the RE generation system<sup>8</sup>.

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<sup>8</sup> <https://www.bra.gov.bb/News/Policy-Notes/Land-Tax-Changes.aspx> Accessed September 23, 2020

Table 3- Operating Cost Input Assumptions

Technology, Category	Size	Fixed O&M BDS cents/kW/Yr	Site Lease BDS cents/kW/Yr	Insurance (BDS\$/mille)	Project Management BDS cents/kW/Yr	Land Tax (% of rev)
Solar PV, above 1 MW and up to 5 MW		\$32.00	\$25	\$10/ mille	\$12.00	0.95%
Solar PV, above 5 MW and up to 10 MW		\$32.00	\$25	\$10/ mille	\$6.00	0.95%
Land-based Wind, above 1 MW and up to 5 MW		\$70.00	\$25	\$10/ mille	\$15.00	0.95%
Land-based Wind, above 5 MW and up to 10 MW		\$70.00	\$25.00	\$10/ mille	\$6.00	0.95%

### Financing Assumptions

The established financing institutions are currently not as actively involved as expected in the mobilization of the RE sector. However, interest has been growing at a slow pace and this trend will hopefully change as the demand for RE increases. With the emergence of energy cooperative societies to support the RE sector, greater financing opportunities for RE projects will be available. Table 4 highlights the financial inputs used in the model.

Table 4- Financing Input Assumptions

Technology, Category	Size	% Debt	Debt Term	Interest Rate	Cost of Equity
Solar PV,	above 1 MW and up to 5 MW	50.00%	15	6.25%	14.00%
Solar PV,	above 5 MW and up to 10 MW	60.00%	15	6.25%	14.00%
Land-based	Wind, above 1 MW and up to 5 MW	60.00%	15	6.25%	14.00%
Land-based	Wind, above 5 MW and up to 10 MW	60.00%	15	6.25%	14.00%

#### *Debt/Equity*

A 50% and 60% debt was assumed for solar PV and land-based wind projects, respectively. The structures used depends on estimated cash flows and available collateral.

#### *Debt Term*

A 15 year term is assumed for solar PV and land-based wind projects. This period is consistent with that offered by local commercial banks.

#### *Interest Rates*

Interest rates of 6.25% have been assumed for installations beyond 1 MW. This rate is reflective of rates currently available in the Barbados financial market, acknowledging current levels of liquidity and the fixed duration of the tariff.

#### *Lender Fee*

A 1.25% on the loans is included in the total project cost.

#### *Cost of Equity*

The assessment of LCOE over the 20 year period by the model is intended to allow the equity investor to achieve a target rate of return (14%) over the full duration of the tariff. A fixed return on equity is not guaranteed.

## **Other inputs**

### *Deductions*

There exists fiscal incentives for RE projects in the form of deductions of 150% of the total project cost and this has been reflected in the model, with a maximum deduction of \$25,000 per year applied for the first five (5) years of the RE project.

### *Depreciation*

Straight line depreciation is applied to the RE projects over the 20 year contract period.

### *Decommissioning*

The model incorporates a reserve fund mechanism to facilitate decommissioning activities associated with the RE project. The funds are accumulated over the first 10 years of the project and is funded from the operating cash flows.

## **SECTION 4 THE DETERMINATION**

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Further to the determination made on September 24, 2019 on the applicable FITs for RE systems up to and including 1 MW, the Commission, now prescribes the FITs for systems above 1 MW and up to 10 MW inclusive. The Commission has therefore determined the following FIT mechanism according to the guidelines outlined in the BNEP:

- I The effective start date for this extension of the FIT programme shall be October 1, 2020. The applicable categories, rates and capacity allocations shall be as set out at paragraph IV hereof. The rates to be applied to all new projects sized over 1MW up to 5 MW shall remain applicable for eighteen (18) months until March 31, 2022. However, should there be a material change to the market, such as the exhaustion of capacity, a review may be undertaken earlier. The rates for all new projects sized over 5 MW up to 10 MW shall remain applicable for seven (7) months until March 31, 2021 or until such time as a competitive procurement framework is established.**
  
- II All terms of all FITs procured under this decision shall remain constant for the duration of the 20-year contract.**
  
- III The FIT shall be based on a 20-year fixed tariff with no front-loading and differentiated by technology and size. The tariff is based on the LCOE, using a multi-criteria approach according to the guidelines espoused in the BNEP. See Tables below.**



*Fit Policy Design*

FIT Policy Element	RE Systems above 1 MW up to and including 10 MW
Proposed Effective Date	October 1, 2020
Rate: Fixed, Tiered or Variable Options	Fixed
Rate: Differentiated by Technology & Size	Yes
Tariff Duration	20 years
Administratively-Determined or Competitively-Bid	Administratively-Determined
Presumed Off-taker	BL&P
Quantity Covered by FIT	100% of output

**IV The applicable categories, rates and capacity allocation shall be as outlined below:**

Technology, Size Category	October 1, 2020 - March 31, 2022 FIT (BDS cents/kWh)	October 1, 2020 - March 31, 2022 Allocation (MW)
Solar PV, above 1 MW and up to 5 MW	23.25	30
Land-based Wind, above 1 MW and up to 5 MW	22.25	10
<b>Total Allocation</b>		40

Technology, Size Category	October 1, 2020 - March 31, 2021 (BDS cents/kWh)	October 1, 2020 - March 31, 2021 Allocation (MW)
Solar PV, above 5 MW and up to 10 MW	21.75	25
Land-based Wind, above 5 MW and up to 10 MW	20.25	10
<b>Total Allocation</b>		35

- V The capacity refers to AC current. Any unutilised capacity shall be transferred from one technology to the other, where applicable.**
  
- VI Under this extension of the FIT programme the billing arrangement shall be “Buy all/Sell all”.**
  
- VII At the end of the 20-year FIT contract period, a new contract will need to be negotiated based on the existing value of the assets, the avoided cost of fuel or such other factors as may be determined by the Commission, in its sole discretion, at that time.**

Dated this 29<sup>th</sup> day of September 2020

*Original Signed by*

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Tammy Bryan  
Chairman

*Original Signed by*

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Brian Francis  
Commissioner

*Original Signed by*

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John Griffith  
Commissioner

*Original Signed by*

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Ruan Martinez  
Commissioner

*Original Signed by*

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Samuel Wallerson  
Commissioner

## APPENDIX 1

### Summary of Responses to Questions Posed in the Previous FIT Decision

1. **What are your views on the appropriateness of the aforementioned criteria<sup>9</sup>? Are there any other criteria that you consider priority? Please explain why.**

#### Respondents' Comments

Four (4) submissions expressed differing views about the appropriateness of the criteria presented. Two (2) submissions approved the criteria as appropriate for RE tariff differentiation. Another submission strongly supported technology type, project size, and technology application as appropriate criteria but expressed reservations about differentiated tariffs based on quality of resource and geography/location. It however, concluded that the merit of these criteria should be considered based on the need for the resource. With regard to ownership structure, it would support a mechanism that encourages fair exploitation of the benefits of ownership. The submission also suggested that a tariff should be developed for energy storage, given the value-added benefits its integration will bring to the grid, its potential for investment opportunities, as well as its role in facilitating the achievement of the 100% RE goal. Similarly, another submission supported differentiated RE rates based on RE technology type and project size but opposed the utilisation of the remaining criteria, since it was considered likely to complicate the tariff structure and increase costs associated with attaining the RE target. Another submission did not object to the criteria but recommended that criteria are needed to evaluate the impact of local against foreign funding and ownership, foreign exchange impacts, economic policy considerations, overall economic fairness, quality jobs, local ownership and social stability.

#### Commission's Comments

The Commission notes that the selection of the appropriate criteria to establish RE rates specific to Barbados' energy context was balanced against electricity cost, policy objectives for meeting the 100% RE goal and the cost effectiveness of achieving policy objectives. The Commission has determined that this can be best achieved by FIT payments which are

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<sup>9</sup> The criteria referred to here are mentioned on Page 13 of the Previous FIT Decision.

differentiated by technology type and project size. The Commission also noted that these criteria will encourage a diverse energy mix and facilitate participation at different scales.

The Commission is cognisant of the requirement for energy storage to support the transition to RE and accepts that, given its value-added benefits to the grid, it should precipitate a specific rate design to further facilitate its deployment. The Commission expects that a rate will be determined in the near future based on empirical data from grid studies.

**2. What are your views on using incentives to encourage investment in the RE sector? What types of incentives do you think are appropriate in the Barbadian context? Who should pay for incentives and for how long?**

Respondents' Comments

The majority of submissions concurred with incentivising RE investment. One (1) respondent opined that the FIT should offer sufficient incentive. Another suggested that rental of rooftop space could leverage greater local participation in the RE sector. Four (4) submissions recommended a fixed long-term tariff as an essential incentive. One (1) of these submissions asserted that the utility fund the FIT through its avoided cost of fuel, until attainment of the 100% RE target. Another of these respondents expected the existing suite of tax exemptions - corporation tax, duty, and VAT - to continue and suggested potential incentives for land tax ease, accelerated depreciation on RE assets and tax allowances. Another respondent concurred with the current level of tax exemptions offered to the RE sector but argued that the FIT determined must be balanced against the need to recover investment costs associated with the integration of RE assets on the grid. It suggested that retaining the existing billing mechanism, adoption of cost trackers and revenue decoupling were appropriate incentives, which would facilitate benefits to customers.

Commission's Comments

The Commission noted that the availability of innovative incentives would play a critical role in facilitating investments in the RE sector. Given one of the tenets of the BNEP - energy democratisation, strategic and financial incentives, as well as partnership initiatives, would assist in implementing this objective. The Commission also notes that the rates took into account the need to incentivise greater RE investment, provide a level of certainty and

guarantee market reflective rates over the long term. The Commission expects that the existing tax incentives and other initiatives will create a greater enabling environment for confidence to grow, as the build out of the RE sector takes place.

- 3. Should the Government offer improved income tax incentives to reduce the tax burden, and thus increase the positive cash flow of entities investing in renewable energy, particularly at the front-end when there is significant capital plant investment? What should these tax incentives be and for what time period?**

#### Respondents' Comments

Three (3) submissions supported the need for improved income tax incentives as it relates to RE investments. However, two (2) of these respondents believed that a long term fixed rate would be more effective, as opposed to taxes below what currently obtains. One (1) submission suggested that the construction of RE facilities should attract little or no tax, as well as tax exemptions on RE revenue until the initial investment has been recovered. An alternative view posed was that education and awareness was required to inform investors about access to Government's existing income tax incentives.

#### Commission's Comments

Enhanced tax incentives, which are aligned to attaining the 100% RE goal, would assist in driving greater RE deployment. The Commission is cognisant, however, that incentives must be balanced against the country's existing economic circumstances. It is also accepted that market reflective FITs which signal certainty to investors could act as an incentive for rapid uptake of RE based technologies. The Commission also noted that the fixed long-term rates are so designed as to allow the opportunity for a reasonable return on investment.

- 4. Should there be accelerated depreciation rates on capital plant investment for income tax determination purposes only. What should these rates be and over what length of time should these be in effect for each entity?**

#### Respondents' Comments

Four (4) submissions suggested that accelerated depreciation rates would be beneficial. However, two (2) of these agreed that the private sector could benefit from allowances made

over a shorter period as opposed to the twenty-five (25) year depreciation period. One (1) of these suggested a period of ten (10) years. Another agreed that a shorter period would facilitate meeting loan commitments.

#### Commission's Comments

The provision of strategic incentives will be critical to meeting the 100% RE goal. These provisions however, must be carefully examined such that the cost-effectiveness of achieving the RE goal is realized. Accelerated rates would mean higher rates in the short term, which places a financial strain on the end-user. This, however, may be advantageous to the investor. A balance must be struck.

- 5. In any particular year and for income tax determination purposes only, should there be an immediate write-off of capital plant investment up to a maximum level? What should be the maximum limit of write-off for any one year, and for what length should this be in effect?**

#### Respondents' Comments

One (1) submission indicated that the write-off period should facilitate meeting cash flow and loan commitments, while another suggested that immediate write-off of capital plant investment should be up to ten (10) years. One (1) respondent highlighted the need for investors to educate themselves on available incentives.

#### Commission's Comments

The Commission is of the view that write-off of investments could incentivise further deployment of RE based technologies. However, it is noted that the provision of incentives must be balanced against prevailing economic circumstances and the need to generate revenue, since this could impose a burden on the average taxpayer.

- 6. What type of mechanisms should be employed in the FIT design to ensure stable and positive cash flows within a reasonable timeframe?**

### Respondents' Comments

One (1) submission advised that an appropriate ROR be set and allow RE investors to determine the cash flow, while another objected that ROR was a difficult mechanism to implement since it depends on the type of project. Two (2) submissions suggested that it is advantageous to utilise a FIT mechanism over a 20-year horizon that accounts for frontloading for the first half of this period. Similarly, another submission supported 20-year purchase contracts but cautioned that care must be exercised in frontloading a FIT in the initial contract period. It advised that an appropriate ROR would ensure stable cash flows.

### Commission's Comments

The Commission has acknowledged that frontloading offers the opportunity to recover capital investments early in the RE asset's operating life. While this would be advantageous to an investor, it would impose upward financial pressure on prices for electricity customers. The Commission, being cognisant of this potential outcome, also considered the impact of the FITs on the consumer and the investor. The determination of fixed market reflective FITs over a predetermined period would not only offer a measure of price stability and certainty of investment, but would also mitigate the effects of increased electricity cost resulting from frontloaded FITs.

## **7. Do you agree that the FIT design should be rooted in principles that lead to low risk debt financing and low risk returns on investment?**

### Respondents' Comments

There was general agreement by respondents that low risk debt financing and low risk returns on investment should be features of the FIT design. However, two (2) respondents suggested that satisfying the differing risk profiles of investors would be a challenge.

### Commission's Comments

One of the attributes of a well-designed FIT scheme is its ability to reflect desired policy objectives. Under Barbados' 100% RE vision, it is recognised that the achievement of this goal would be contingent on creating the appropriate investment space, which would assure certainty and mitigate against unnecessary risk. The provision of appropriate fixed FITs over the long-term would facilitate this.



8. **What features do you consider essential in the FIT to minimise financial and economic risk to RE investors and consumers? State how these attributes will reduce risk.**

Respondents' Comments

Respondents concurred that the FIT should provide a fixed, long-term contract rate to reduce financial and economic risk to RE investors and consumers. These features would encourage investment and add certainty for investors. One (1) respondent was of the view that a front-loaded FIT would facilitate early payback for loan commitments. An alternate view posed was that the FIT should include curtailment rights without the obligation to compensate RE suppliers in high penetration scenarios where appropriate. This, they suggested, would mitigate against associated "financial, economic and technical risks".

Commission's Comments

The Commission noted that a guaranteed fixed payment for RE production over the economic life of the asset would provide confidence for investment in the RE sector and also would result in lower rates for consumers. Additionally, differentiated rates by capacity and technology type would ensure that consumers benefit from economies of scale.

9. **State, giving reasons, whether you agree that FIT should include a reward system for Community Based RE Projects. How should this be determined and treated in any FIT rate or other mechanism?**

Respondents' Comments

The consensus was that an adder or premium for Community Based RE Projects would be appropriate. A suggestion was that the premium could be a percentage of the FIT (about 10%) which, when added to the base rate of the FIT, would incentivise local participation. One (1) respondent posited that the reward should be apportioned according to the risk of investment.

Commission's Comments

One of the policy objectives under the 100% RE goal is encouragement of local participation through democratisation of RE. The provision of premium type rates for Community Based RE Projects would spur local involvement.

- 10. Should IPP's and installations larger than 1 MW be under the same tariff mechanism as projects of 1 MW or less? If not, please provide recommendations for a more appropriate tariff methodology for these larger installations. Are any types of auctions suitable and/or advantageous for larger installations? Explain why and how this would work.**

Respondents' Comments

The majority of respondents agreed that IPPs and installations beyond 1 MW should be under a different energy pricing scheme. An alternate view was that above the 500 kW benchmark, a reasonable rate could be either negotiated between the off-taker and each IPP or through a competitive bidding process. Similarly, another respondent supported the use of auctions to discover the tariff for large projects but recommended that potential bidders demonstrate the ability to sustain the project prior to bidding, in order to avoid abandonment of projects. However, three (3) respondents opposed auctions for large projects since, in their view, it limits local participation, ownership and energy democratisation.

Commission's Comments

The Commission noted that a pricing methodology applicable to RE systems beyond 1 MW would require consultation with all stakeholders.

- 11. Are RE systems currently affordable for the average individual household? If not, please state possible solutions to address this issue.**

Respondents' Comments

The consensus amongst respondents was that RE systems are economically unattractive to average households. A fixed tariff over the long-term was highlighted as a common solution; this would encourage funding by financial institutions and further investment in RE. A front-loaded tariff was posed by one (1) respondent as a solution since this, they considered, has the potential to increase householder participation and enhance the resilience of the roofing stock.

Commission's Comments

The cost of RE systems, particularly solar PV, is steadily declining. The Commission acknowledged that RE education and awareness for investors and financial institutions is required and this should inform the creation of innovative funding packages targeted at the

domestic market. The provision of fixed tariffs would also reduce investor risk and boost confidence in such projects.

**12. What do you think is an appropriate rate of return for investors and why? Based on different technologies of RE, the size of the related capital investment, the make-up of financing, or other factors, should there be different rates of return associated with different levels of risk for investors? How should this risk and the related return on investment be evaluated and established in each case?**

Respondents' Comments

One (1) respondent recommended an ROR of 13% to 15% to stimulate local and international investment given the 2030 RE goal. Another asserted that RE projects should attract a high WACC. Considering the average financial structure of 60% debt and 40% equity, a 5% to 7% debt and 12% to 15% equity, a WACC of 10% is achievable. At this rate, a 12% to 15% ROR would be required to meet investment needs. Another view raised was that an ROR above 15% would be appropriate to meet investment needs over a minimum of 3 to 5 years. One (1) respondent argued that currently, a 10% ROR is allowed which was based on risk of investment as a means to evaluation. Hence, this approach should be applied to RE investments. Another suggested setting a target ROR and FIT, and allow the market process to work.

Commission's Comments

The ROR should be determined based on local market conditions. This is an area which could be used to incentivise investors to further encourage participation in the energy sphere.

**13. What duration do you think is appropriate for FITs and why? Should this vary by type of RE technology that may have different economic life spans?**

Respondents' Comments

A FIT with a twenty (20) year horizon was recommended by the majority of respondents, since this timeframe would cater to the recovery of capital investment and provide the opportunity to earn a reasonable return, and ensure stable cash flow. There was a general agreement that the duration of the FIT should vary by technology type.

### Commission's Comments

The duration of the FIT should be long enough to allow recovery of investment and a reasonable return, while ensuring that rates are affordable to the end-user.

- 14. What are your views about the appropriate timeframe within which to recover the investment? Should this vary by type of RE technology that may have different economic life spans?**

### Respondents' Comments

The recommended timeframe for recovery of investment suggested ranged from six (6) to twenty (20) years. There was general agreement that the recovery period should vary by technology type.

### Commission's Comments

This should be technology specific and account for part of the asset's operating life. The FITs determined provide guaranteed rates which are intended to capture the assets' costs over the economic life, and offer the opportunity to the investor to earn a reasonable return. The level of the FIT and its duration would ensure that these considerations are adequately addressed.

- 15. What are your views on requiring the IPPs to include storage in any installation? Should this apply to projects over a particular size? What would be the recommended applicable size?**

### Respondents Comments

Six (6) respondents generally agreed that energy storage should be required while one (1) respondent recommended 5 MW as the benchmark, and another suggested 250 kW. Two (2) respondents opined that the requirement for energy storage should attract a premium rate, which is reflective of the quality of the energy resource produced.

### Commission's Comments

The inclusion of energy storage could provide multiple benefits to the grid at any size. However, a separate pricing regime would be required for the different value services offered. This will be addressed in a future investigation.

- 16. Do you agree that FIT should be guaranteed over the lifetime of the RE generation asset? State reasons to support your response. Should the FIT be reviewed periodically to reflect the true cost of energy in the market? What would be a reasonable review period?**

Respondents Comments

There was consensus that the FITs should be guaranteed over a twenty (20) year horizon and reviewed every two (2) years. Six (6) months prior notice was suggested for implementation of new rates.

Commission's Comments

The duration of the FIT accounts for a portion of the asset's design life. A review of the FIT is intended to take into account changes in technology and reflect current market prices. In order to facilitate the efficient operation of the FIT programme, an average review period of twelve (12) months would be reasonable. This would add certainty for investors. Other jurisdictions, e.g. Ontario, review FITs every two (2) years, however, the Commission has considered that the attainment of RE capacity targets should also trigger a FIT review.

- 17. 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?**

Respondents' Comments

There was consensus that capacity limits for RE systems should be considered within the constraints of the grid, and that system modelling be utilised to investigate the impact of the capacity to ensure safe operation. An alternate view raised by one (1) respondent was that this issue should be addressed within the Grid Code and IRP.

Commission's Comments

The Commission acknowledged that capacity limits should be initiated based on the appropriate grid and feeder studies to ensure safe and reliable operation.

- 18. State, with reasons, whether you believe FIT design should incorporate a degression schedule over the lifetime of the RE assets. What would be the appropriate time frames to be applied to the schedule?**

### Respondents' Comments

One (1) respondent recommended a degression schedule that accounts for declining production cost of RE assets over time, while most respondents agreed that a fixed rate tariff was appropriate. One (1) respondent disagreed with the use of a degression schedule.

### Commission's Comments

The Commission recommended a FIT with a fixed rate to cover payments over a 20-year period. The review of the FIT would provide the necessary information to inform the required adjustments for new projects.

- 19. Identify specific legal, financial, economic, policy, competitive, demographic and other barriers to entry for potential RE investors/developers in Barbados. Explain how these can be changed or mitigated. Provide specific examples of barriers to entry that exist in Barbados but do not exist to this degree in other states or nations competing for the same RE investors/developers.**

### Respondents' Comments

Issues highlighted included a lack of a fixed long-term rate, planning and permitting, issuance of licence, project inspections, interconnection approvals, availability of land, cost of land, development cost and the apparent bias towards local projects compared to foreign ones. Respondents also raised issues related to the absence of innovative finance and insurance products, exemptions on import duties, provision of subsidies/tax concessions, FCA mechanism impacts, the lack of sector education and awareness amongst institutions, and the need for greater collaboration among stakeholders. The 2028 expiration date of the existing utility franchise limits the offering of long-term PPAs beyond this period. One (1) respondent highlighted elements of the local Exchange Control Act, which they opined could significantly decrease project returns.

### Commission's Comments

The Commission has acknowledged that attainment of the national 100% RE goal could be further enhanced by removing those impediments associated with processing RE applications, e.g. permitting, licensing and planning processes. The Commission anticipates that as the

transition to RE advances, the effects of these barriers should subside since there is a direct benefit of learning from our specific circumstances. As these issues become less prevalent, a more conducive environment should evolve.

- 20. Explain how changes in cost and other inputs and assumptions to the LCOE of RE providers and BL&P can best be identified by the Commission for purposes of periodic update of its model for calculating the LCOE (and related FITs). Should RE providers and BL&P be required to file periodic reports to identify changes in certain inputs and assumptions to the LCOE? How often should these reports be submitted and what type of information should be included?**

#### Respondents' Comments

One (1) respondent suggested that the FIT should be determined to provide a 10% to 12% IRR based on feedback on project costs. Another respondent was of the view that the LCOE approach could be enhanced with minimal financial impact on society if it captured job creation relative to RE, environmental issues and democratisation of capital through local ownership. It was suggested that periodic reports with updated LCOE information should be submitted by the utility bi-annually. Another respondent noted that it is within the purview of the Commission to request all relevant information as required. One (1) respondent suggested that regular consultation with local and international stakeholders should be required.

#### Commission's Comments

The Commission anticipates that pertinent data will be required from all relevant stakeholders. This would allow the LCOE model inputs to be reviewed and revised, so that appropriate rates can be determined based on existing market conditions. The types, and format of this information will be determined via direct dialogue with the parties.

- 21. Identify and explain the advantages and disadvantages of identifying the level of support or subsidy that BL&P pays to RE providers. Should this be reflected on customer bills?**

### Respondents' Comments

The majority of respondents agreed that the support or subsidy should be reflected on the bill for transparency. One (1) respondent cautioned that any noticeable increase on the bill may create division on RE support.

### Commission's Comments

The Commission considered that transparency helps consumers understand the cost of providing a service and facilitates them making informed choices, i.e. energy conservation and energy efficiency.

## **22. Explain how the amount of support or subsidy paid by BL&P to RE providers should be identified and calculated for potential recovery from its customers.**

### Respondents' Comments

One (1) respondent suggested that no subsidy was required and another posited that the support be created from an assumed generation based on a specific capacity, and the KWh be spread across the customer base. The respondent further recommended that this amount be paid from a pool of fuel savings from RE projects. Another respondent opined that the level of subsidy becomes more complex as RE penetration increases and baseload energy is displaced. One (1) respondent asserted that the existing FCA mechanism could be used to highlight RE purchases separately on customers' bills.

### Commission's Comments

The Commission anticipates that a flexible instrument or modification of the existing mechanism would be developed to facilitate recovery and reflect RE costs.

## **23. Explain how often any FIT levy assessed to customers should be changed or updated and identify the factors that should trigger the FIT levy changes.**

**Should changes or updates to the FIT levy occur when:**

- a. There are significant changes in the RER/FIT rate?**
- b. There is a significant increase in the number of RE providers and related volumes on which the RER/FIT is paid?**



- c. RE providers impose significant costs or capital investment upon the BL&P network?
- d. The FIT levy increases by a certain significant dollar amount or percentage threshold (such that minimal changes do not require updates)?
- e. There is a filing by BL&P with necessary supporting documentation?

#### Respondents' Comments

There was no consensus among respondents regarding this question. One (1) respondent was of the view that subsequent to a FIT review, the FIT levy would be expected to change but the quantum of energy purchased would be contingent on the bulk of RE produced. He cautioned that this must be carefully addressed to avoid public confrontation related to increased electricity costs. In terms of interconnection costs, it was noted that the BL&P would be able to determine this impact. This respondent agreed that the FIT should be updated if a filing is made by the BL&P. Another respondent opined that the FIT should be reduced to deter further investments when the national RE capacity required is exceeded. Another respondent supported the recovery of power purchased through a mechanism such as a REFCAs and payment of compensation to RE suppliers made via the customer's bill. The respondent also supported the continuance of the buy-all-sell-all billing arrangement to facilitate this.

One (1) respondent objected to the use of a FIT levy but recommended a cost tracker to capture and recover grid investments associated with increased RE penetration.

#### Commission's Comments

The Commission anticipates that changes to the FIT would be triggered by exhaustion of allocated RE capacities and or the expiration of a specified date. Additionally, energy sector market conditions would also dictate the changes in FIT levy. These include the type and magnitude of financial incentives, tax exemptions, etc.

- 24. Explain how the FIT levy should be assessed to customers, so that the impact on low-income customers can be eliminated or mitigated.**

#### Respondents' Comments

One (1) respondent indicated that if the FIT is linked to RE generation, then the amount paid should be apportioned to the level of consumption, provided that correlation exists between

income and electricity cost. He also recommended the promotion of energy conservation and energy efficiency for all customers. Two (2) respondents opposed the FIT levy but recommended an appropriate cost recovery mechanism to capture generation costs; these include REECA and cost trackers.

#### Commission's Comments

The Commission acknowledged that an evaluation of the impact on low income customers would be essential. This would depend on the volumes of RE produced and purchased. The level of impact on low-income customers would also be contingent on the relative consumption amongst the customer classes and how cost is allocated across these. Currently, the first tariff block (150 kWh) for electricity caters to the most vulnerable customers.

- 25. Explain how the above situations are currently addressed between BL&P and RE providers, and how related costs are treated and recovered by each party. Identify and explain if there should be any changes to this process and how this impacts the BL&P, RE providers, and potential customer rates.**

#### Respondents' Comments

One (1) respondent suggested that RE investors be offered an appropriate ROR and the resulting FIT should be financed by the avoided fuel cost. Another respondent explained that currently, the BL&P absorbs all cost associated with interconnection of RE systems up to 500 kW, except for line extensions and transformer upgrades; this is expected to continue with the exception of grid upgrades (line extensions) which may require sharing of the cost. Similarly, two (2) respondents advised that as a consequence of RE grid interconnections, additional capital and operating cost expended on infrastructure to facilitate these, such costs are not recovered from RE investors. As higher capacities are installed, the associated cost of these will need to be recovered.

#### Commission's Comments

The Commission expects that given the 100% RE vision, increases in RE capacity which require upgrades to facilitate their integration and may impose additional costs on the utility. As a consequence, these cost increases will have to be shared equitably to the benefit of all consumers.

**26. Explain how these positive economic and other impacts on various sectors of the economy can best be identified, tracked and monitored. Should BL&P and other RE providers provide certain periodic reports to a Barbados government agency so that these impacts can be identified? Identify those tools that other states or nations are using to identify or estimate these positive impacts on the economy.**

#### Respondents' Comments

Respondents agreed that the requisite RE information should be recorded and reported by the utility or a Government institution. Three (3) respondents indicated that this would facilitate information retrieval from the utility by Government if that entity is the sole data collection entity. One (1) respondent asserted that it was required to provide operational and financial information to the Commission at specific periods and that this process could facilitate any supplemental information, if required.

#### Commission's Comments

The Commission acknowledged that it has regulatory oversight on the requisite data collection as it relates to regulated entities. It was noted that, given the transition to RE, there will be a need to expand the data collection requirements for the utility and other stakeholders. This expanded role will aim to address the quality of information submitted, so that timely and informed decisions can be taken, as it pertains to the efficient operation of the FIT programme, and the provision of a safe, reliable, and efficient electricity service. The ability to routinely capture data from entities other than the utility will need to be provided for in legislation.