



# **CONSULTATIVE DOCUMENT**

## **NOTICE OF PROPOSED RULE MAKING**

**DOCUMENT REFERENCE: 2015/001/NPRM-02**

### **Weighted Average Cost of Capital (WACC)**

**For**

### **DOMINICA ELECTRICITY SERVICES LTD**

***Comments on First Response and Second Issue of Document***

*March 2015*

**CONSULTATION PROCESS**

Persons who wish to participate in this consultation and to express opinions on this Document are invited to submit comments in writing to the IRC. Responses/Comments should be sent to:

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Independent Regulatory Commission  
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Commonwealth of Dominica**

**Fax No: 767-440-6635**

Responses, clearly showing the Document Reference identification, may be sent by mail or fax to the address or fax number above or by e mail to: [admin@ircdominica.org](mailto:admin@ircdominica.org).

Confidential information provided with responses should be submitted as a separate document and clearly identified as such.

In order to stimulate debate, the IRC will place any responses received on its website at [www.ircdominica.org](http://www.ircdominica.org) immediately following the last date for receipt of responses. Comments on the responses will also be entertained by the IRC which should, likewise, be submitted by the date indicated.

The references and proposed time table for this consultation are:

**Document Ref No: 2015/001/NPRM-02**

**Document Title: Weighted Average Cost of Capital for DOMLEC**

| <b>Event</b>  | <b>Proposed Date</b> |
|---|----------------------|
| <b>Publication of First Issue of Document</b>                                 | February 28, 2015    |
| <b>Responses closed</b>   | March 16, 2015       |
| <b>Comments on First Response and Publication of Second Issue of Document</b> | March 30, 2015       |
| <b>Responses close</b>  | April 16, 2015       |
| <b>Statement of Results and Commission's Decision</b>                         | April 23, 2015       |

## Table of Contents

|  |           |
|--|-----------|
| <b>Introduction and Background.....</b>                | <b>4</b>  |
| <b>Policy and Legal framework .....</b>                | <b>5</b>  |
| <b>DOMLEC’s Proposal.....</b>                          | <b>13</b> |
| <b>The Commission’s Considerations.....</b>            | <b>16</b> |
| Respondents’ Comments at the Public Consultation ..... | 16        |
| Expert Resources .....                                 | 17        |
| Capital Structure .....                                | 18        |
| <b>PROPOSED DECISION 1.....</b>                        | <b>19</b> |
| <b>PROPOSED DECISION 2.....</b>                        | <b>20</b> |
| <b>PROPOSED DECISION 3.....</b>                        | <b>22</b> |
| <b>PROPOSED DECISION 4.....</b>                        | <b>25</b> |
| <b>PROPOSED DECISION 5.....</b>                        | <b>27</b> |
| <b>PROPOSED DECISION 6.....</b>                        | <b>28</b> |
| <b>PROPOSED DECISION 7.....</b>                        | <b>30</b> |
| <b>PROPOSED DECISION 8.....</b>                        | <b>31</b> |
| <b>Conclusions.....</b>                                | <b>31</b> |
| <b>Summary of Proposed Decisions.....</b>              | <b>32</b> |
| <b>Summary of Consultation Questions.....</b>          | <b>33</b> |
| <b>References and Links:.....</b>                      | <b>34</b> |
| <b>Appendix 1 – List of comparator companies.....</b>  | <b>35</b> |

## **WEIGHTED AVERAGE COST OF CAPITAL FOR DOMINICA ELECTRICITY SERVICES LTD**

### **Introduction and Background**

The Commission issued two new Licences, a Generation Licence and a Transmission Distribution and Supply Licence, to Dominica Electricity Services Ltd (DOMLEC), both of which became effective on January 1 2014. These two Licences complete the process for aligning the regulatory framework for DOMLEC with the principles and intent of the Electricity Supply Act 10 of 2006 (ESA) and established a regime of separate licensing for each of the business sectors of public electricity supply undertakings – generation, transmission distribution and supply.

The Transmission, Distribution and Supply Licence (the Licence) sets out the provisions for conducting tariff reviews and, at Condition 33, specifically addresses the procedure for the initial tariff review as follows:

*DOMLEC shall, within 7 days of the Commencement Date, submit a timetable for the filing of an application to the Commission for a tariff review, and that the date for such a filing shall not be later than 9 months after the Commencement Date without the approval of the Commission. The application for a tariff review shall be in the format set out in the Commission's Decision Tariff Regime for Dominica Electricity Services Limited - Document Ref 2009/004/D and the tariff review shall be conducted in accordance with the process set out in that Decision.*

The Commission has been of the view that in order to ensure timely completion of its review of any application for a tariff review submitted by DOMLEC it would be minded to consider certain critical issues in separate proceedings leading up to the tariff review itself. These issues, which are critical inputs to the tariff determination, are:

- Depreciation Policy
- Determination of Weighted Average Cost of Capital (WACC)
- Determination of Asset Base
- Approval of Investment Programme

The Commission will, if requested by DOMLEC, conduct its review of and make determinations on these issues prior to the formal submission of the tariff review request on the presumption and condition that the Commission's Decisions on these issues will be used by DOMLEC as the input in the tariff request.

The Depreciation Policy was addressed and completed with the Commission's Decision Document Ref: 2014/001/D, June 2014 - "Depreciation Policy for Dominica Electricity Services Ltd".

The overall rate of return is the WACC which is the average cost of long term debt and the approved rate of return on equity. The return is the compensation which the company receives for the capital that is invested in the regulated asset base and is calculated by applying the

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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WACC to the asset base. Both the WACC and the regulated asset base have to be approved by the Commission.

The Commission in its letter dated June 3, 2014 advised DOMLEC as follows:

1. That, pursuant to Condition 33 of the Licence, the date for DOMLEC to file for a tariff review is changed from October 1, 2014 to May 1, 2015.
2. That in the meantime, as far as practicable, DOMLEC and the Commission continue to work on DOMLEC's:
  - Weighted Average Cost of Capital (WACC);
  - DOMLEC's Asset Base to be used in the Tariff Application; and,
  - DOMLEC's long and medium term investment plans.

These are all to be completed and submitted to public consultations prior to the filing.

The Commission is mindful that in discussions with DOMLEC which were held in preparation for this rate case the Commission agreed that the consultation on the WACC would be to settle on the **methodology** to be used by DOMLEC. This would at least allow for timely review of the WACC proposals during the full tariff review. DOMLEC's submission however constitutes and is a fulsome request to set the value of the WACC to be applied to the regulatory rate base to compute the return at the tariff review proceeding scheduled for May 2015. This is also reinforced by Article 8 of DOMLEC's "*Application To The Independent Regulatory Commission Of Dominica For Approval Of Weighted Average Cost Of Capital (WACC) Dominica Electricity Services Limited.*" The Commission has decided that it will consider DOMLEC's request now submitted in full, the outcome of which will lead to a determination of DOMLEC's WACC.

In this regard, The Commission issued its First Consultative Document on February 28, 2015 and held a public consultation on March 13, 2015. This document sets out the Commission's response to the feedback and comments received during the first round of consultations and the Commission's proposed Decisions that flow from these considerations. These proposed decisions will replace those, where appropriate, that were indicated in the previous document. .

The Commission's objective in this proceeding is to consider and decide on:

- 1) The WACC which will be applied to DOMLEC's regulatory rate base in the tariff determination for DOMLEC at the tariff review to be conducted in 2015.

### Policy and Legal framework

The Commission's duties and functions with regard to tariff making are provided for pursuant to provisions in three principal instruments - (i) the Act, (ii) the Licence and (iii) Commission's Determination "Tariff Regime For Dominica Electricity Services Ltd Document Ref: 2009/004/D 9" (the Determination).

### The Act provides at Section 18

*The Commission shall be independent in the performance of its functions and duties under this Act and shall not be subject to the direction and control of the Government or of any person, corporation or authority, except that the Commission shall have due regard to the public interest and overall Government policy, as embodied in legislation.*

### At Section 19

*The Commission shall have sole and exclusive authority to regulate all electricity entities that are subject to this Act and shall have full powers to regulate all licensee with regard to all economic and technical aspects of regulation in accordance with this Act especially with regard to the determination of tariff or electricity charges.*

### At Section 20

- (1) The Commission shall, without limiting the generality of this section, have a duty to perform and exercise its functions and powers under this Act in the manner which it considers best calculated to:*
- (a) encourage the expansion of electricity supply in Dominica where this is economic and cost effective and in the public interest;*
  - (b) encourage the operation and development of a safe, efficient and economic electricity sector in Dominica;*
  - (d) facilitate the promotion of sustainable and fair competition in the electricity sector where it is efficient to do so;*
  - (e) protect the interests of all classes of consumers of electricity as to the terms and conditions and price of supply;*
  - (g) ensure that the financial viability of efficient regulated electricity undertakings is not undermined;*

Firstly the Act gives the Commission full authority to act independently in the performance of its duties under the Act – specifically having regard to public interest considerations and government policy, as embodied in legislation. In providing for its functions the ESA (S20) mandates the Commission to act in a manner which it considers best calculated to achieve a number of policy objectives and in this regard clauses (a), (b), (d), (e) and (g) of S 20 reproduced above are instructive.

The Act provides a framework for the Commission to set and review the tariffs charged by a supplier of electricity on Dominica. The Act sets out the authority and procedure for tariff making in Sections 23 and 24. These are as follows:

- Section 23. (1) An electricity service provider shall not -*
- (a) offer service unless it has, prior to offering such services, filed its proposed tariffs with the Commission and such tariffs rates and charges have come into effect pursuant to*
  - (b) make changes on tariffs, or other terms of the service after proposed tariffs have been filed with the Commission, except as authorized under this section.*

- (2) *An electricity service provider shall submit tariff proposals in conformity with this section in writing to the Commission with respect to the tariffs it intends to apply for the use of its systems, facilities and services.*
- (3) *Proposed tariffs filed under subsection (2) shall contain all relevant information concerning rates and charges for services, including deposits, non-recurring charges and monthly charges as well as terms and conditions applicable to the provision of services, including disputes or claims over billing or provision of services.*
- (4) *A Licencee shall make tariffs available to the public by publishing such tariffs in the Gazette and in two local newspapers.*
- (5) *All proposed tariffs filed with the Commission shall be kept complete, accurate and up to date.*
- (6) *After a proposed tariff has been filed with the Commission and has come into force and effect, no changes may be made in the rates, charges or other terms of service relating to all the services provided under the tariff, except upon the filing and review of tariffs as provided in this Act.*
- (7) *Proposed Tariffs shall:*
- (a) be accompanied by all accounting and costing information as the Commission may require; and*
  - (b) comply with all other requirements and conditions as shall be applicable to the licensee concerned.*

- Section 24.**
- (1) *All tariffs proposed by a licensee shall conform with the principles and provisions governing tariff formulation established by the Commission pursuant to the legislation for the time being and shall be submitted to the Commission for review as to their conformity with such principles and provisions.*
- (2) *The Commission shall, within 60 days of the submission of a tariff proposed under subsection (1), make a determination to:*
- (a) approve the tariff without amendment;*
  - (b) conditionally approve the tariff subject to amendments specifically proposed by the Commission being accepted by the licensee; or*
  - (c) reject the tariff proposal outright, stating clearly in writing the reasons for such rejection, which reasons may include a determination that the tariff is not ripe for review.*
- (3) *In the event the Commission makes a determination under subsection (2) (b) the licensee may submit a revised tariff within 30 days of the determination; and the Commission shall make a new determination in accordance with one of the three options specified in subsection (2) within 30 days of such submission.*



*(4) In the event of an outright rejection of the proposed tariff under subsection (2) (c), the Licencee may file a new tariff at any time; or may file a petition to the Commission for reconsideration of such rejection.*

*(5) A petition shall be filed within 30 days of the rejection and shall state the Licencee's basis for reconsideration, which may include a fundamental change in circumstances from the conditions that prevailed when the tariff was originally rejected by the Commission.*

*(6) In the event the Licencee files a petition for reconsideration under subsection (4), the Commission shall act upon such petition within 30 days and make a determination in accordance with one of the three options set forth in subsection (2).*

*(7) If the Commission fails to act on a tariff submission pursuant to this section within the timeframes for determination specified in subsections (2), (3) and (6), the tariff shall be deemed approved until such time as the Commission makes a determination.*

Using the authority given it under Section 24 (1) the Commission promulgated Decision Document 2009/004/D "Tariff Regime For Dominica Electricity Services Ltd" which by Order of the Commission became effective on April 30, 2010. This document sets out in clear and unambiguous terms the governing principles for the development and setting of the tariff which the Dominica Electricity Services Ltd (DOMLEC) will use from time to time.

Further, in granting new licences to DOMLEC in October, 2013, the Commission ensured that the provisions of this Tariff Regime became firmly embedded in the Transmission, Distribution and Supply Licence through Condition 32 of the said licence, and forms part of the licence.

The Licence at Condition 32 addresses the Price Control Mechanism:

### *Tariff Principles*

*The Commission shall determine the Licensee's rates for electric power pursuant to its powers under the ESA and on the principles set out in the Commission's Decision Document: Tariff Regime for Dominica Electricity Services Ltd.; Document Ref. 2009/004/D as amended from time to time.*

While the Determination sets out in detail the methodology and process for determining the tariff for DOMLEC.

The following sections of the Determination are particularly instructive.

### *Regulatory Policy objectives*

*The Commission's regulatory policy is to establish a tariff which balances the interests of the consumers and investors alike where the investors have the opportunity to realize a fair return on investment while customers can expect an efficient, responsive and economical service in an environment where the rights of all stake holders are preserved. The Commission*



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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*will not guarantee a rate of return to the investors but will seek to create a regulatory environment where the incentives are such that the company through efficient operational practices and continual efficiency improvements will have the opportunity to achieve the desired rate of return during any tariff period.*

### Tariff Principles

*There are basically two models for a tariff structure which could apply in the Dominica situation.*

- 1. A tariff which includes all the costs including the costs of fuel, based on a projected cost of fuel over the tariff period; or*
- 2. A two part tariff comprising (i) a non fuel base rate and (ii) a fuel charge, which fully recovers the cost of fuel (subject to efficiency factors) and no more.*

*Both methods use the same techniques and parameters for estimating revenue requirements the exception being that in the first case fuel is included in the revenue requirements while it is not in the second case. The options for treating with fuel costs are discussed separately. The Commission has accepted option No. 2 and will allow a 100% pass-through of fuel costs. The average tariff that will be in effect from time to time shall be consistent with the following:*

$$RR = OC + FC + GO$$

*Where:*

*RR = Revenue Requirement*

*OC = Operating Cost*

*FC = Financing Cost*

*GO = A provision to recover or return the cost of Obligations imposed by government which were not known or anticipated at the tariff review.*

*The "Average Rate" then becomes the Revenue Requirement (\$) divided by the forecast sales (kWh).*

$$\text{Average Rate} = \text{Revenue Requirement (\$)} / \text{Sales (kWh)}$$

### *Revenue Requirements*

*The Utility's revenue requirement is calculated as the sum of its estimated costs of providing service, where a fair return is included as one of those costs. These forecasted funding levels have to be sufficient to get the required work done without adversely impacting quality of service, or compromising reliability, customer service or safety: any disallowance resulting in deferral of projects or work activities must be carefully considered and weighed against these criteria.*

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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*The Revenue Requirement consists of the sum of Operating Costs and Financing Costs required for providing electricity service.*

$$RR = \text{Operating Costs} + \text{Financing Costs}$$

*Where RR = Revenue requirement*

*Operating Costs = Costs of labour, non-generation fuel, **depreciation**, income taxes, deferred costs*

*Financing Costs = Cost of capital which includes cost of debt and equity.*

*The critical exercise is to determine the forecast of the revenue requirements based on a sustainable and defensible estimate of the expenses for the base year. One approach is where the base year is the year for which the most recent published annual reports and audited financial statements are available and from which the Test Year (the forecasted year), representing a forecasted statement of expenses and costs that are known and measurable is derived.*

*In any event, in all cases, the expenses that are ultimately approved for inclusion will be those that are determined by the Commission to be prudent.*

*The non-fuel revenue requirement is developed based on a combination of demonstrated historic costs and forecast costs. The fuel revenue requirement is by definition a 100% pass-through of actual cost and will change monthly according to an agreed-to formula.*

*The revenue requirement for the Base Rate is then:*

$$\text{Base Rate RR} = \text{NFOC} + \text{FC} + \text{GO} + \text{RF}$$

*Where:*

*RR = Revenue Requirement*

*NFOC = Non-Fuel operating Costs (this includes non-generation fuel)*

*FC = Financing Costs*

*GO = Government Obligations, and*

*RF = Regulatory Fees*

The WACC is a fundamental element of the revenue requirements and goes to the core of the principles for balancing the interests of the company and that of the consumer.

The Determination sets out the principles for determining the WACC:

### **Cost of Capital Rate**

*The Cost of Capital Rate is the weighted average of the cost of rates for the various items in the utility's capital structure, i.e. debt, preferred equity, and common equity.*

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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*This estimate is the rate of return investors will receive and it is applicable to the Rate Base. DOMLEC, in making its tariff submission, is required to make detailed proposals along with supporting analysis to the Commission on its derivation of the WACC to be applied in its revenue requirements determination.*

### **Weighted Average Cost of Capital**

*The cost of capital is a weighted average of the cost of debt, preferred equity, and common equity, where the weights are the market-value percentages of debt, preferred equity, and common equity in a firm's capital structure. The overall cost of capital, which is called the firm's "weighted average cost of capital" (WACC), is specified by the following formula:*

$$WACC = w_d k_d + w_c k_s + w_p k_p \quad (1)$$

*where,*

- w<sub>d</sub> = the fraction of debt in capital structure,*
- w<sub>c</sub> = the fraction of equity in capital structure,*
- w<sub>p</sub> = the fraction of preferred stock in capital structure,*
- k<sub>d</sub> = cost of debt,*
- k<sub>s</sub> = cost of equity,*
- k<sub>p</sub> = cost of preferred stock.*

*To apply the formula, one must estimate the cost of debt, preferred stock and common equity using methodologies accepted by both financial economists and regulators. In addition, one must estimate the capital structure mix of debt, preferred stock, and common equity. With these inputs, the WACC can be calculated from the above equation.*

*The cost of debt, interest payment, and the cost of preferred stock, dividend payment, are fixed by a contract and therefore are relatively easy to measure. The measurement of the cost of common equity, on the other hand, is more involved since return to common equity is not fixed, and thus is not known with certainty.*

*Instead, return on equity must be estimated. The estimation of return on equity is based on the principle that rational investors will not invest in a particular investment opportunity if the expected return is less than the return expected from alternative investments of comparable risk. Therefore, return on equity is calculated by measuring the expected returns on alternative investments of comparable risk.*

*Estimating the return on equity may give rise to two types of errors. First, the use of any specific model may give rise to errors or biases unique to that model. To reduce errors that may result from the application of any one model, several financial models have been employed to estimate the cost of equity. The final cost of equity figure used in calculating an overall rate of return is the average of the results of the models applied. Second, the measurement of the cost of equity for any individual company may involve errors. To reduce errors that may result from the estimation of the cost of equity for a single company, the models are applied to a group of companies of similar risk.*

*Next, the selection of comparable companies for DOMLEC is explained.*

### ***Comparable Companies***

*The comparable group of companies is an important factor in both the Discounted Cash Flow (DCF) model and the Capital Asset Pricing Model (CAPM). To select a comparable group that provides reasonable risk proxies, analysts rely on companies' bond ratings and safety ranks. Bond ratings and safety ranks are viewed by investors as measures of investment risk. For the U.S., the Value Line Investment Survey provides bond ratings and safety ranks for a large number of public companies in various industries. Value Line bond ratings and safety ranks are used to exclude companies that have a speculative bond rating. In the absence of similar information for Dominica, companies will have to be identified for which information is available.*

### ***Models for Estimating Cost of Equity Capital***

*There are two widely accepted models for estimating the cost of equity capital. The first, the Discounted Cash Flow (DCF) model assumes that the current market price of a company's stock is equal to the discounted value of all expected future dividends. There are various formulations of the DCF model based on different projections of future dividend growth. The version of the DCF typically applied is the constant growth or the Gordon Model. The second, the Capital Asset Pricing Model (CAPM) assumes that the cost of equity investment is equal to the risk-free rate of interest plus the risk premium on the market portfolio adjusted by the company-specific risk factor, beta.*

*An average of the costs of equity derived from the DCF and CAPM models could then be used as the appropriate value for Cost of Equity.*

### DOMLEC's Proposal

#### *Filing requirements*

The Determination provides at "Schedule D" the information requirements to be met by DOMLEC in submitting its proposals specific to the Cost of Capital determination. The Commission has **determined** that DOMLEC has satisfied the filing requirements in this regard.

#### *Expert advice*

In support of its request for a Determination on the WACC, DOMLEC relies on a study carried out by Mr. William Vinhage of Vinhage and Associates as the main piece of expert evidence. Mr. Vinhage's report "Determination on Equity (ROE) Range for Dominica Electricity Services Ltd", dated October 20, 2014, which was included with the submission, seeks to assist the utility to establish, using the methodology prescribed in the Determination, the ROE element of the WACC. The Commission has noted that Vinhage and Associates which is a Florida based company has a client list which includes Grenada Electricity Services Ltd (GRENLEC) from the Caribbean region and WRB Enterprises of Florida. Mr. Vinhage has over 20 years experience of consultancy services and professional experience in the following areas:

- Strategic Planning & Analysis
- Project/Program Process & Impact Evaluations and Financial Analysis
- Statistical and Econometric Analysis and Forecasting
- Development of Financial/Operational Measurement and Tracking Systems
- Financial Planning, Budgeting & Analysis
- Competitive Intelligence & Benchmarking
- Development of Utility Revenue Requirements, Cost of Service and Tariff Design
- Process Design, Coordination, Mapping & Analysis

He has also had utility experience with Progress Energy and Tampa Electric Company.

**The Commission is of the view that Mr. William Vinhage has the competencies to carry out the expert work on behalf of DOMLEC.**

**The Commission has not received any adverse comments on the qualifications and or expertise of Mr. Vinhage and it, therefore, now confirms its initial conclusions on his competencies.**

#### **Summary of DOMLEC's proposal**

DOMLEC's conclusions are presented below:

- *The requested Return on Equity ("ROE") of 14.5% was guided by the Study undertaken by Vinhage & Associates. The Study evaluated the cost of capital for alternative equity investments with risks similar to those of the Company, and is based on the 2013 experience of major North American capital markets.*
- *The Company's cost of debt is 5.75%.*
- *The 13 months average capital structure is 33.1% debt and 66.9% equity.*
- *The Company is requesting approval from the IRC that its Weighted Average Cost of Capital (WACC) be set at 11.6%, including the weighted combination of the Company's cost rates for debt and a fair rate of return on equity.*

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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The Company continues that if the request is granted it will use the approved rate of return (WACC) as a component in its tariff review filing to calculate its revenue requirements for the 2014 Test Year.

Table 1 below which is reproduced from the Company's submission provided the detail that supports the request.

The Commission has taken note of the following representations made by DOMLEC:

### Caribbean Utility Comparisons

*Few Caribbean utilities are subject to independent regulation and a wide sample of 'approved' rates of return is generally not available. The following references do provide some guidance in terms of the levels of return on rate base that have been authorised or recommended for the named Caribbean utilities:*

*a) The Government of the Cayman Islands, under Condition 25 of the license dated April 3, 2008 granted to the Caribbean Utility Company Limited, established a Rate Cap and Adjustment Mechanism in which the base range of Return on Rate Base Values was set at between 11% and 13%.*

*b) The Electricity Supply Act of St. Lucia as amended in 2006 sets the Allowable Rate of Return for St. Lucia Electricity Services Limited (LUCELEC) as "an annual return on average contributed capital based upon a spread of two percentage points and seven percentage points above the cost of the most recent Government of Saint Lucia long term bonds issued on the Regional Government Securities Market (RGSM) of the Eastern Caribbean Central Bank, with the proviso that the minimum rate of return on average contributed capital so calculated shall be ten percentage points."*

*c) The Office of Utilities Regulation (OUR) in Jamaica in its decision of 2009 determined that the Jamaica Public Service Company Limited (JPS) cost of equity was 16% and WACC of 11.6% with a capital structure that includes 48% debt.*

*d) The Fair Trading Commission (FTC) in Barbados, in its decision of 2010, approved a WACC of 10% and a capital structure that included 35% debt for The Barbados Light & Power Company. This equated to a Return on Equity of 12.75%.*

### Realized Return on Rate Base for 2012 and 2013

*The Rate of Return on Rate Base realized by the Company under existing rates for 2012 was 10.2% and for 2013 was 10.6%.*

**Weighted Average Cost of Capital for Dominica Electricity Services Ltd.**

**TABLE 1**

**RATE OF RETURN ON RATE BASE  
WEIGHTED AVERAGE COST OF CAPITAL**

| <b>13 Months Average Projected for December 31, 2014</b>  |                               |                              |                   |                            |
|---|-------------------------------|------------------------------|-------------------|----------------------------|
| <b>WEIGHTED AVERAGE COST OF CAPITAL: CONVENTIONAL CAPITAL STRUCTURE, POLICY BASED (PROJECTED)</b> |                               |                              |                   |                            |
| <b>Capital Component</b>  | <b>Implied Balance (\$EC)</b> | <b>Capitalization Shares</b> | <b>Cost Rates</b> | <b>Weighted Cost Rates</b> |
| <b>Long Term Debt</b>   | <b>38,773,805</b>             | <b>33.1%</b>                 | <b>5.75%</b>      | <b>1.9%</b>                |
| <b>Short Term Debt</b>  |                               |                              |                   |                            |
| <b>Common Equity Preference Shares</b>  | <b>78,354,957</b>             | <b>66.9%</b>                 | <b>14.5%</b>      | <b>9.7%</b>                |
| <b>Total</b>  | <b>117,128,762</b>            | <b>100%</b>                  |                   | <b>11.6%</b>               |



## The Commission's Considerations

### *Respondents' Comments at the Public Consultation*

The Commission thanks all respondents who offered comments at the public meeting on March 13 and, in particular, it recognizes the extensive preparation made by DOMLEC, for the public meeting. The primary concerns raised by DOMLEC were in regard to the methodology and assumptions applied by the Commission in arriving at its proposed conclusion on the WACC. In particular, DOMLEC took issue with the Commission's rationale to use the ECSE 10 year bond rate as the risk free rate, citing its particular concerns at the immaturity of and relative inactivity on that market. DOMLEC's other concern related to the small number of comparator companies pointing out that the sample size is just too small to generate credible data. While there appeared to be general sympathy to DOMLEC's arguments, one respondent raised a number of issues which are reproduced below:

- a) *notwithstanding that the ECSE is relatively new and the number of listed stocks is small, the OECS jurisdiction cannot be completely ignored, as DOMLEC seems to be doing, because:*
  - i. *DOMLEC operates in the OECS;*
  - ii. *DOMLEC is listed on the (OECS's) ECSE, not on the NYSE or other US based exchange;*
  - iii. *The vast majority (over 99%?) of DOMLEC's shareholders are from our space (Dominica and Eastern Caribbean);*
  - iv) *DOMLEC therefore raises its funding from the Eastern Caribbean, not the US.*
- b) *outside of losses from natural disasters (which it can mitigate with proper insurance) DOMLEC's risk is low because of the nature of its license and its monopoly on transmission and distribution, even with new entrants in the area of generation;*
- c) *increasing the debt to equity ratio is good for the company because it reduces the overall cost of funds; is good for the consumer because it should reduce tariffs; is good for our banks because they get to lend more (at this time they are supposed to be looking for good projects to lend to); is good for shareholders because it reduces the amount of risk capital employed and increases the dividend yield. Only when debt service becomes unsustainable can it be argued that increasing debt increases shareholder risk. Enquiries at the four major banks operating in Dominica will likely confirm that they would be willing to lend to DOMLEC and that a debt to equity ratio of 1:1 would be acceptable to them. This should be enough to justify using a level of 50% debt to calculate the WACC, regardless of how DOMLEC chooses to fund its operations.*

d) DOMLEC is a Dominican company which has always operated in the "small" market of Dominica. It is structured for small. The smallness of the market is therefore a given and should not be considered an additional risk.

The Commission has noted these comments and has appropriately taken them into account in its deliberations that follow.

### Expert Resources

The Commission in this round of consultation relies on published works of Professor Aswath Damodaran<sup>1</sup>.

In addition to numerous publications in academic journals he has authored several highly-regarded and widely-used academic texts on Valuation, Corporate Finance, and Investment management. He is also the recipient of several awards in the field of Finance.

The Determination sets out the overriding principles that guide the Commission's philosophy and approach to tariff making. For emphasis this is repeated below:

#### Regulatory Policy objectives

*The Commission's regulatory policy is to establish a tariff which balances the interests of the consumers and investors alike where the investors have the opportunity to realize a fair return on investment while customers can expect an efficient, responsive and economical service in an environment where the rights of all stake holders are preserved. The Commission will not guarantee a rate of return to the investors but will seek to create a regulatory environment where the incentives are such that the company through efficient operational practices and continual efficiency improvements will have the opportunity to achieve the desired rate of return during any tariff period.*

The challenge in the determination of the rate of return is to identify a mechanism which satisfies the reasonable expectations of customers and investors alike.

The Commission is minded that there are three issues to be settled in order to derive WACC:

- 1) Determination on an appropriate capital structure for DOMLEC
- 2) Determination on the cost of long term debt
- 3) Determination on the cost of equity

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<sup>1</sup> Professor Damodaran holds the Kerschner Family Chair in Finance Education and is Professor of Finance at New York University Stern School of Business

### Capital Structure

The Determination does not explicitly provide guidance as to an appropriate capital structure for an electric utility such as DOMLEC but there are bench marks that can and will guide the Commission’s approach to determining whether the proposals on capital structure requested by DOMLEC are reasonable.

Generally the cost of debt is cheaper than that of shareholders’ equity; the factors that tend to influence the cost of debt is that usually there is a tax benefit in that the company will get income tax relief on the interest payments to lenders while this is not usually the case on dividends payable to equity holders; also debt holders face less risk than equity holders in that the former have first claim on the company’s assets in the event of bankruptcy or default. This makes debt less risky than equity and therefore the return to equity holders are generally higher than that to debt holders. Because of this it is important to derive a prudent mix of debt and equity in order to optimize the value to consumers.

DOMLEC has requested a capital structure of 33.1% debt and 66.9% equity based on its 13 month average from December 2013 to December 2014 of which December 2013 – August 2014 is the actual and the remainder of the period projected. The company points out, using the CARILEC Benchmark Study of 2012 as its reference, that the average debt amongst Caribbean utilities is 38%.

The Commission does not believe that the proposed capital structure of 33.1% debt is equitable for consumers and would opine that at 33.1%, DOMLEC would be at the low end of the Caribbean utilities, in the context of a 38% average. The Jamaica Office of Utilities Regulation determined a capital structure for the Jamaica Public Service Company Ltd of 48% debt: 52% equity at its 2009 Tariff Review Determination<sup>2</sup> and 50% debt 50% equity at its 2015 Tariff Review Determination<sup>3</sup>. It is instructive that at the 2009 review, the OUR, in fixing the gearing at 48% did so in circumstances where the company’s actual gearing was 38%. Comparisons with electric utilities in the Cayman Islands (CUC), Barbados (BLP), Grenada (GRENLEC) and St Lucia (LUCELEC) are shown in Table 2.

**TABLE 2**

#### Gearing of some Caribbean Utilities

| Country            | Utility                               | Gearing |
|--------------------|---------------------------------------|---------|
| The Cayman Islands | CUC                                   | 56%     |
| Barbados           | Barbados Light and Power <sup>4</sup> | 35%     |
| Grenada            | GRENLEC <sup>5</sup>                  | 38.43%  |
| St Lucia           | LUCELEC <sup>6</sup>                  | 47.77%  |

<sup>2</sup> OUR Determination Notice – JPSCo Tariff 2009 – 2014 Document No. Ele 2009/04 : Det/03 Sept 18, 2009

<sup>3</sup> OUR Determination Notice Document No. 2014/ELE/008/DET.004 January 7, 2015

<sup>4</sup> FTC Decision and Order No 0002/09 effective Oct 1, 2009

<sup>5</sup> Derived from data in GRENLEC Annual Report 2013

DOMLEC's proposed gearing is not only out of sync with regional companies in the main but the Commission is of the view that consumers, for the reasons outlined earlier, will be disadvantaged at the requested capital structure of 33.1% debt 66.9% equity. DOMLEC's actual 2013 gearing using data from its 2013 Annual Report is provided at Table 3.

***TABLE 3***

**Extract from DOMLEC 2013 Annual Report<sup>7</sup>  
Financial Statements - Note 10 - Borrowings**

|                         | 2013         | 2012         |
|-------------------------|--------------|--------------|
| <b>Total borrowings</b> | \$41,025,375 | \$46,397,839 |
| <b>Total equity</b>     | \$75,019,297 | \$68,260,396 |
| <b>Gearing</b>          | 35.4%        | 40.5%        |

The Commission will accept the data provided in the audited financial statements at the onset.

In order to balance the stakeholder interests the Commission is of the view that the gearing should approach 50% and accordingly, the Commission proposes that for this rate case the capital structure will be maintained at 38% debt and 62% equity to reflect, at this stage, the average amongst the regional utilities but DOMLEC must take steps to realize a gearing of 42% by the end of the tariff period. In the succeeding tariff period commencing 2018 the Commission will be seeking to establish the gearing in the region of 48% - 50%.

At the first consultation, a comment was made to the effect that there is no doubt that debt is a cheaper method of financing and that DOMLEC and the IRC should reach a decision on the capital structure which will take this into consideration irrespective of how DOMLEC chooses to finance its assets in practice.

The Commission agrees that debt is a cheaper form of financing and does not agree with DOMLEC's comment that a capital structure of 38/62 will place the Company at the risk of default or make it unattractive to investors.

### **PROPOSED DECISION 1**

**DOMLEC's capital structure shall be 38% debt and 62% equity for the tariff period.**

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<sup>6</sup> LUCELEC Annual Report 2013

<sup>7</sup> DOMLEC Annual Report 2013

### Cost of Debt

The cost of debt is quite simple to determine if the actual cost of the debt on the company's books is used. In this regard DOMLEC's request is as follows:

#### Company's Cost of Debt

20. *The Company's application is based on a cost of 5.75% for the Company's outstanding long-term debt as reported in Note 10 of the company's 2013 audited financial statements which are included as Appendix B. This cost rate is derived from the projected interest on the Company's 13 month average long-term debt, which at December 31, 2014 is projected at EC\$ 38,773,805."*

The Commission accepts this proposal and will determine that the Company's cost of debt be fixed at 5.75%.

As there were no issues raised or alternative positions suggested by respondents by any respondents, the Commission reiterates its proposed Decision 2 below

### **PROPOSED DECISION 2**

**DOMLEC's cost of debt shall be fixed at 5.75%.**

### Cost of Equity

As has been advanced by DOMLEC and consistent with received wisdom the characteristics of the cost of equity are such that it must be estimated. The Determination recognizes this and in so doing advances the following as guidance:

*The measurement of the cost of common equity, on the other hand, is more involved, since return to common equity is not fixed, and thus is not known with certainty.*

*Instead, return on equity must be estimated. The estimation of return on equity is based on the principle that rational investors will not invest in a particular investment opportunity if the expected return is less than the return expected from alternative investments of comparable risk. Therefore, return on equity is calculated by measuring the expected returns on alternative investments of comparable risk.*

*Estimating the return on equity may give rise to two types of errors. First, the use of any specific model may give rise to errors or biases unique to that model. To reduce errors that may result from the application of any one model, several financial models have been employed to estimate the cost of equity. The final cost of equity figure used in calculating an overall rate of return is the average of the results of the models applied. Second, the measurement of the cost of equity for any individual company may involve errors. To reduce errors that may result from the estimation of the cost of equity for a single company, the models are applied to a group of companies of similar risk.*

*Next, the selection of comparable companies for DOMLEC is explained.*

*Comparable Companies*

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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*The comparable group of companies is an important factor in both the Discounted Cash Flow (DCF) model and the Capital Asset Pricing Model (CAPM). To select a comparable group that provides reasonable risk proxies, analysts rely on companies' bond ratings and safety ranks. Bond ratings and safety ranks are viewed by investors as measures of investment risk. For the U.S., the Value Line Investment Survey provides bond ratings and safety ranks for large number of public companies in various industries. Value Line bond ratings and safety ranks are used to exclude companies that have a speculative bond rating. In the absence of similar information for Dominica, companies will have to be identified for which information is available.*

### *Models for Estimating Cost of Equity Capital*

*There are two widely accepted models for estimating the cost of equity capital. The first, the Discounted Cash Flow (DCF) model assumes that the current market price of a company's stock is equal to the discounted value of all expected future dividends. There are various formulations of the DCF model based on different projections of future dividend growth. The version of the DCF typically applied is the constant growth or the Gordon Model. The second, the Capital Asset Pricing Model (CAPM) assumes that the cost of equity investment is equal to the risk-free rate of interest plus the risk premium on the market portfolio adjusted by the company-specific risk factor, beta.*

*An average of the costs of equity derived from the DCF and CAPM models could then be used as the appropriate value for Cost of Equity (emphasis added).*

The cost of equity proposed by DOMLEC was estimated with the use of the Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM) methodologies. These are widely used and accepted by regulators worldwide as well as in the region for deriving the cost of equity. In computing the cost of equity and in making its case, DOMLEC has relied, as indicated earlier, on the study carried out by Mr. William Vinhage of Vinhage and Associates as the main piece of expert evidence.

### *Risk-free rate*

The Risk-free rate is the interest rate that can be obtained by investing in financial instruments with no default risks – the choice of this rate for an international investor, who has the option of investing in other countries, could be considered as the current rate attributable to US Treasury bills as these could be considered as “safe/risk free” investments. The appropriate applicable rate, could be considered as either the date of DOMLEC’s application or the date of the Commission’s analysis. In this regard, given the nature of DOMLEC’s investments, the Commission is of the view that 10 Year US Treasury bond is the appropriate measure of long term risk free rate and notes that DOMLEC has itself proposed a risk-free rate of 3.55% which is the average value of the monthly yields on 30 Year US Treasury Bonds from Oct 2013 to Sep 2014 as reported by the Federal Reserve Bank.

In light of DOMLEC’s comments in respect of the inadequacy of data from the Eastern Caribbean Securities Exchange, as proffered by the Commission earlier as a suitable market for analysis for the purpose of this rate review, it was necessary for the Commission to reconsider its position and adopt the US as the mature market but retain the ECSE bond issue for the



purpose of adjustment to the risk premium in a similar fashion to DOMLEC's use of it for cost of equity adjustment.

The main reasons for using a 10 Year US Treasury bond as opposed to a 30 Year US Treasury bond are advanced by Professor Damodaran of Stern School of Business NYU that it is easier estimating equity risk premiums and default spreads *against the 10 Year bond than the 30 Year bond. It is much easier to find issues of the 10 Year T-bond.*<sup>8</sup>

The Commission proposes a risk-free rate 2.17% that being the Ten Year US Treasury T Bond rate as recorded at the end December 2014.

### PROPOSED DECISION 3

**The risk free rate to be the average of the US 10 Year Treasury Bill rate at December 2014 – that is 2.17%.**

#### Consultation Question No 1:

*Do respondents have any views on the proposed use of the US 10 year Treasury Bill rate as the basis for fixing the risk free rate?*

Dominica risk-free asset rate

The Commission has argued in the previous consultation to introduce into these proceedings the principle that instruments issued under the auspices of the Eastern Caribbean Central Bank (ECCB) should be used as the basis for benchmarking risk in the OECS countries. While, from an international perspective, it has been argued that the OECS markets may be immature the fact is that the Eastern Caribbean Dollar is not only stable, but it has maintained its parity since it was pegged to the US\$ on July 1, 1976. The currency itself has existed since 1965. The ECCB's 2013/2014 Annual Report makes the following commentary

*“The prevailing economic circumstances did not compromise the domestic currency, which remains adequately backed with foreign reserves. The backing ratio averaged 94.98 per cent during 2013, significantly above the statutory limit of 60.0 per cent and the prudential operating limit of 80.0 per cent. Additionally, inflationary pressures were contained as the inflation rate fell to 0.8 per cent at end-December 2013 from 2.9 per cent at end-December 2012.”<sup>9</sup>*

There can be no debate that the ECCB's record of management of the currency and its economic management of the economies of the OECS monetary space has not only resulted in one of the most stable currencies in the world but also in manageable inflation over the long term. While the Commission is aware of the preference of international investors, when investing in developing countries, to use as the risk free rate the US 10 Year Treasury Bill rate, the Commission believes that the particular advantageous circumstances afforded by the Eastern

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<sup>8</sup> [www.stern.nyu.edu/~adamodar/pdfiles/papers/riskfreerate.pdf](http://www.stern.nyu.edu/~adamodar/pdfiles/papers/riskfreerate.pdf)

<sup>9</sup> Eastern Caribbean Central Bank, Annual Report 2013/2014



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

Caribbean Currency Union and the ECCB itself makes the use of the long term bonds issued by the ECCB an appropriate instrument to inform the risk free rate within the OECS countries.

Although there has been no active bond issued for Dominica in recent times, the Eastern Caribbean Central Bank provides data on current bond activity for three of its countries, St Lucia, Antigua and Barbuda and St Vincent and the Grenadines. DOMLEC suggests that the similarity of the economies of these countries where there is a common currency and “*the amount of public debt as a percentage of Gross Domestic Product of Dominica compared to other nations in the region suggests that the debt costs of this group are a reasonable proxy .....*”.

The percent of public debt related to Gross Domestic Product for 2014 in these countries are documented in Table 4.

**TABLE 4**

| Debt / GDP <sup>10</sup> Ratio |          |
|--------------------------------|----------|
| Country                        | Debt/GDP |
| Antigua & Barbuda              | 94       |
| St Lucia                       | 75       |
| St Vincent & the Grenadines    | 78       |
| Dominica                       | 76       |

While the Commission has accepted the principle that the risk free be determined by the USA Ten Year Treasury Bond rate it subscribes to the view that in the absence of any data for Dominica, an average of the bond issues for these countries should serve as a reasonable proxy risk free asset rate. These are summarized in *Table 5*.

**TABLE 5**

**Eastern Caribbean Central Bank<sup>11</sup>  
Listing of Rates 10 year Treasury Bills  
At September 2014**

| Country                     | Rate % |
|-----------------------------|--------|
| Antigua & Barbuda           | 7.750  |
| St Lucia                    | 7.3648 |
| St Vincent & the Grenadines | 7.4047 |
| Average                     | 7.51   |

<sup>10</sup> Caribbean Development Bank: 2014 Caribbean Economic Review & 2015 Outlook

<sup>11</sup>Source: [http://eccb-centralbank.org/Currency/country\\_intrates.asp#table2](http://eccb-centralbank.org/Currency/country_intrates.asp#table2)

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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The Commission feels that it is reasonable and practical to use the average rate as the Dominica risk free asset rate and therefore proposes to determine this rate to be 7.51%.

The Commission notes that DOMLEC also uses this rate as the Dominica long-term bond asset rate.

DOMLEC has proposed that there is needed to provide for size in the makeup of the risk profile arguing that there is need to *“to reflect the increased risk associated with DOMLEC being a very small island utility with limited opportunity for diversification of resources, customers, et cetera to mitigate a host of risks”* and proposed a 140 basis points provision for this. DOMLEC reiterated this point at the public consultation. The Commission remains unconvinced, however, that size adjustment is appropriate for Dominica in the current circumstances and repeats the following as particular considerations:

- (1) The use of a regional composite of risks to derive the risk premium would be a factor to compensate for any perception of risk at the country level due to size.
- (2) 48% of the ordinary share holding of DOMLEC is owned by Dominicans
- (3) With the issuance of two 25 year licenses and the attendant safeguards (including renewal options) that are inbuilt to protect the investor and with no real prospect for competition, any riskiness associated with size is fully mitigated.

Additionally, however the Commission has taken into account arguments raised in the publication *“Financial Valuation: Applications and Models”* by James R Hitchner<sup>12</sup> where it is noted that there is no consensus on the applicability of a size premium adjustment for small companies.

The referenced text cites Jeffery S. Tarbell’s factors that typically reflect the increased risk of small companies. These are instructive in considering the case of DOMLEC.

**TABLE 6**  
**Jeffery S Tarbell’s Factors that typically reflect increased risk in small companies**

| Factor  | Commission’s Comments   |
|---|---|
| Difficult to raise financing                            | Not applicable to DOMLEC  |
| Lack of product, industry or geographic diversification | Not a factor for DOMLEC it is a regulated monopoly  |
| In ability to expand into new markets                   | Not a factor for DOMLEC   |
| Key person management risks                             | Not a factor - DOMLEC is part of a wider group where the skills are available                               |
| Lack of management expertise                            | Not factor - DOMLEC can call on its group partners for assistance   |
| Higher sensitivity to economic movements                | Not necessarily major issue but DFOMLEC may experience demand contraction in times of low economic activity |
| Lack of dividend history                                | Not an factor for DOMLEC - dividends are  |

<sup>12</sup> Financial Valuation: Application and Models by James R. Hitchner

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

| Factor   | Commission's Comments   |
|--|---|
|  | paid out regularly  |
| Higher sensitivity to business risks, supply squeezes and demand lulls   | DOMLEC is a regulated monopoly and is insulated from these risks by virtue of its licences  |
| Inability to control influence regulatory or union activity  | This is a factor  |
| Lack of economies of scale or cost disadvantages   | This is a factor only in so far as prices of goods may supplied be impacted   |
| Lack of access to distribution challenges  | Not a Factor for DOMLEC   |
| Lack of relationships with suppliers and customers   | Not a factor for DOMLEC   |
| Lack of product differentiation or brand name recognition  | Not a factor for DOMLEC   |
| Lack of deep pockets necessary for staying power   | DOMLEC is part of a wider group with financial resources  |
| Lack of externally generated information, including analysts coverage, resulting in a lack of forecasts  | Not a factor for DOMLEC   |
| Lack of adequate press coverage and other avenues to disseminate company generated information   | Not a factor for DOMLEC   |
| Lack of internal controls  | Not a factor for DOMLEC   |
| Lack of infrastructure   | Not a factor for DOMLEC   |
| Possible lack of internal reporting  | Not a factor for DOMLEC   |
| Smaller - Capitalisation companies are viewed as riskier by the credit markets resulting in <ul style="list-style-type: none"> <li>• Higher interest rate spreads</li> <li>• Lower multiples of EBITDA for financing</li> <li>• Lower collateralisation rates</li> <li>• More restrictive covenants</li> <li>• Less use of stock as security interest</li> </ul> | These are not necessarily a factor for DOMLEC given the fact that DOMLEC is a monopoly with 25 year operating licences that are structured with generous provisions for renewal and continuation of the licences. |
|  |   |

An objective assessment of these factors would result in a conclusion that DOMLEC does not fit the profile of a company that typically reflects the prospects of increased risk because of size.

### PROPOSED DECISION 4

The Commission proposes that there will be no risk premium due to DOMLEC's size.

### Consultation Question No 2:

*Do respondents have any views on the proposed Decision not to provide a risk premium attributable to size?*

The Commission is, therefore, not minded to make any specific provision for risk associated with size.

### *Utility Comparable Companies*

In a document originating from Stern Business School of New York University, the response to the question “What is a comparable firm?” was “A comparable firm is one with cash flows, growth potential, and risk similar to the firm being valued”. In addition to these, most analysts have concluded that comparable companies must be in the same business or line of businesses.

DOMLEC has proposed a selection of 15 US companies as that their comparable companies against which it should be compared for the purposes of calculating  $\beta$ . In fact, in describing the composition of the sample DOMLEC says “The size of electric utility companies in the US is massive in comparison to DOMLEC; the companies chosen for inclusion were selected to have a market capitalization of less than \$8 Billion US which is very small by US standards. In addition the sample was chosen to reflect utilities that are somewhat vertically integrated. With the liberalization of electricity supply in recent years in the US there are unlikely to be any purely vertically integrated utilities, but this sample does reflect companies that still have a significant portion of their supply vertically integrated in the regulated business”.

The Commission is, however, sympathetic to comments that it would have been better to have a larger sample of comparable companies, as was contemplated in the previous round when only LUCELEC and GRENLEC were used, and that there should be more market based data available for such companies to enable thorough analysis. It also notes that DOMLEC trades on the ECSE market and it would have been appropriate in some ways to use information from this market. At this point in time the Commission is minded not to use in any extensive way data from this market for analysis because of its perceived immaturity.

It is widely accepted that in emerging markets where companies are required to be evaluated that a mature market is used. Professor Damodaran publishes data sets for companies in all sectors and a wide range of countries. This includes 80,000 companies worldwide and more than 95 sectors including the power and utilities sectors. Some of the power companies included in this group are Caribbean companies like Cayman Island Utilities Company, Bahamas Electric Light Company Ltd. The Commission will use as the proxy companies the three hundred and fifty three electric utility companies analyzed Professor Damodaran<sup>13</sup>

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<sup>13</sup> [http://people.stern.nyu.edu/adamodar/New\\_Home\\_Page/databreakdown.htm#](http://people.stern.nyu.edu/adamodar/New_Home_Page/databreakdown.htm#)

### PROPOSED DECISION 5

The Commission proposes to use the group in power sector used by Professor Damodaran as the proxy utilities (See Appendix 1)

#### Consultation Question No 3:

*Do respondents agree with the use the group of companies published by Professor Damodaran as the proxy utilities? Please provide reasons?*

#### **The equity beta ( $\beta$ )**

The beta of a stock is the relevant measure of risk for well diversified investors. This systematic risk is inherent in the respective stock and it is this risk that cannot be diversified.

For the United States, analysts typically rely on the estimates of beta from the Value Line Investment survey. The Value Line derives beta estimates through a regression analysis of the relationship between yearly, monthly or weekly percentage changes in the price of a stock and the yearly, monthly and weekly percentage changes in the Stock Exchange Index over a period of five years. There is no prepared analysts' estimate of beta for DOMLEC therefore the Commission will rely on the beta published by Professor Damodaran for the group of power companies from the emerging markets to enable the calculation of the cost equity using the CAPM model.

| Industry | Number of firms | Beta | Unlevered Beta |
|----------|-----------------|------|----------------|
| Power    | 353             | 0.85 | 0.49           |

[www.stern.nyu.edu/~adamodar/pc/datasets/betamerg.xls](http://www.stern.nyu.edu/~adamodar/pc/datasets/betamerg.xls)

#### ***Mature Market Risk Premium (MMRP)***

The mature market risk premium is the expected extra return over and above the risk – free rate that well-diversified investors require to invest in risky assets in mature markets.

There are two approaches used in arriving at the MMRP, the implied equity risks approach and the historical equity risk approach. The implied equity approach does not require historical data or corrections for country risk, but does assume that the market overall is correctly priced. Professor Damodaran also pointed out that the implied equity risk premium approach has a high predictive power.

The historical equity risk approach uses the mean of historical returns above the risk-free rate in the US market. Professor Damodaran notes that while users of this method may have developed the consensus that this is the best estimate of the risk premium looking forward, there are surprisingly large differences observed being used in practice. An example, the risk premium estimated in the US markets by different investment banks, consultants and corporations range from 4% at the lower end to 12% at the upper end. Three reasons advanced for these differences were identified as:

- Time period used
- Choice of Risk-free security
- Arithmetic and Geometric averages

Professor Damodaran calculates the MMRP (for the US market) at 5.21% and the Commission proposes to use this rate in its own analysis.

### PROPOSED DECISION 6

**The Commission proposes to use the Mature Market Risk Premium of 5.21% stated by Professor Damodaran as the implied equity risks approach.**

### Consultation Question No 4:

*Do respondents agree with the use the Mature Market Risk Premium of 5.21% published by Professor Damodaran? Please provide reasons?*

### Country Risk Premium (CRP)

A country risk premium is an additional risk associated with investing in a company on the international rather than the domestic market. Investing in an emerging country is considered riskier than investing in a more developed country like the United States. This is an adjustment made to the risk premium to compensate the investor for investing in other markets particularly the developing markets. The principle of higher return for higher risks holds in that investors expect to attract a higher premium to invest in a country with higher risk.

In estimating the cost of equity in emerging markets, Godfrey and Espinosa (1996)<sup>14</sup> propose an adjusted CAPM which is done in two ways: First by adding to the risk-free rate the default spread, which is the difference between the yield of the emerging market bond and yield of a comparable USA market bond. Second is an “adjusted beta”. It is calculated as 60% of the ratio between the standard deviation of the returns in the emerging markets and the standard deviation of returns in the USA market.

Damodaran (2003)<sup>15</sup> proposed a calculation of the cost of equity for a firm investing in a market with country risk as follows:

$$E(R) = R_f + \beta(ERP_m) + CRP$$

Professor Damodaran posits that not all firms are equally exposed to country risk and sought to modify the model in two ways:

- adding country risk premium to the equity risk premium  $\beta(ERP_m + CRP)$ ;
- adjusting the country risk premium with some weight,  $\beta(ERP_m) + \lambda(CRP)$ .

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<sup>14</sup> A Practical Approach to Calculating Cost of Equity for Investment in Emerging Markets (Journal of Applied Corporate Finance, Fall 1996.)

<sup>15</sup> Naumoski, Aleksandar. Estimating the Country Risk Premium in Emerging Markets: The Case of the Republic of Macedonia.

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

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There are a number of stated ways in which country risk premium can be estimated. Among these, there are two most widely used methods, the “synthetic spread” and the sovereign bond spread. The synthetic spread entails obtaining a default spread for the assigned credit rating for the country. Professor Damodaran has developed a typical default spread for each sovereign credit rating expressed by Moody’s.

In the case of Dominica, its assigned credit rating is CariCRIS<sup>16</sup> BBB- ; which CariCRIS equates as B- for Fitch and S & P and which would be equivalent to B3 for Moodys. This gives a spread of 9.75%.

While ratings provide a convenient measure of country risk, there are costs associated with using them as the only measure. First, ratings agencies often lag markets when it comes to responding to changes in the underlying default risk. Second, the fact that the ratings agency focusses on default risk may obscure other risks that could still affect equity markets.

Unlike the synthetic spread which utilizes sovereign credit ratings assigned by credit agencies, the sovereign bond spread is market-based. This is the difference between the yield on the emerging country sovereign bond and the yield of a comparable mature market bond

The Commission is not inclined to use the synthetic spread for the above reasons as well as it could not verify adequately the equivalency of CariCRIS rating but it will use the sovereign bond spread.

In this case the spread is the Country Risk Premium (CRP) derived as follows

CRP = Dominica long-term bond rate - US Risk free rate and equates to 5.34% (7.51% - 2.17%)

### Cost of Equity

#### CAPM

The cost of equity using the CAPM method is given as  $k = R_f + \beta(R_m - R_f)$

Where  $R_f$  the risk-free rate  
 $R_m$  the market returns  
 $\beta$  this is beta which is the measure of systematic risk

The corresponding results from the calculations to determine the cost of equity (using CAPM) in the scenario discussed is as follows:

$$K_{ec} = R_f + \beta(\text{MMRP} + \text{CRP})$$

**Cost of Equity ( $K_{ec}$ ) = 2.17 + 0.85 ( 5.21 + 5.34) = 11.14%**

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<sup>16</sup> CarrCRIS is a regional rating agency headquartered in Trinidad and Tobago. [www.cariCRISS.com](http://www.cariCRISS.com)



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

### DCF

The DCF model assumes that the current market price of a company's stock is equal to the discounted value of all expected future dividends. Although there are different projections of future dividend growth, the one which is being proposed is the constant growth or the Gordon Model<sup>17</sup>.

The cost of equity using the DCF method is  $K_{ed} = D_o(1+g)/P_o + g$

Where  $k$  is the cost of equity  
 $D_o$  is the present dividend  
 $g$  is the constant growth  
 $P_o$  is the current market price

Cost equity quoted for DCF for the proxy companies by Professor Damodaran is 9.41%

### Derivation of Cost of Equity ( $K_e$ )

The cost of equity is calculated by averaging the results obtained from the CAPM and the DCF methodologies. This is calculated below at Table 7,

**TABLE 7**

#### Derived Cost of Equity Proxy Group

| Models         | Proxy Group |
|----------------|-------------|
| <b>DCF</b>     | 9.41%       |
| <b>CAPM</b>    | 11.14%      |
| <b>Average</b> | 10.28%      |

The Commission is of the view that it would be appropriate to consider the average of the costs of equity for DOMLEC and that of the proxy group to be a reasonable value to assign as DOMLEC's cost of equity for this tariff review. In the instant case the average is 10.28%.

The Commission would therefore conclude that a reasonable expectation for the cost of equity by investors in DOMLEC would be 10.28%.

### PROPOSED DECISION 7

The Commission proposes that, based on the results of the application of the DCF and CAPM methodologies, DOMLEC's cost of equity for the tariff period shall be 10.28%.

<sup>17</sup> [www.investopedia.com/terms/g/gordongrowthmedel.asp](http://www.investopedia.com/terms/g/gordongrowthmedel.asp)

### WACC

Arising from the foregoing the WACC for DOMLEC would be derived from the following inputs (Table 10)

**TABLE 8**

**Derivation of DOMLEC's WACC**

|                       |       |
|-----------------------|-------|
| Capital structure     | 38/62 |
| <b>Cost of Debt</b>   | 5.75  |
| <b>Cost of Equity</b> | 10.28 |
| <b>WACC</b>           | 8.56% |

The Commission therefore proposes that DOMLEC's WACC shall be fixed at 8.56%.

### PROPOSED DECISION 8

**The Commission proposes that the WACC to be applied to DOMLEC's regulatory asset base shall be 8.56%.**

### Conclusions

DOMLEC points out in its submission that, by and large, rate cases awards for return on equity in the United States have been trending down. In fact the resource used to illustrate the point is data obtained from the Edison Electric Institute which shows a steady decline over the period Q4 2000 to Q4 2012 from about 12% to 10%. It should therefore be anticipated that the international market would follow the US and that the returns on equity would also trend downwards. The proposal on the value of DOMLEC's WACC is not inconsistent with this trend.

The Commission is of the view that for the reasons and arguments made in this consultative document a WACC of 8.56% reasonably balances the interests of the company and consumers and is consistent with the regulatory principles enunciated in the Determination. It also believes that it exercised its duty consistent with Section 21 of the Act and acted in accordance with Section 22 of the said Act.

### Summary of Proposed Decisions

- **PROPOSED DECISION 1**  
DOMLEC's capital structure shall be 38% debt and 62% equity for the tariff period.
- **PROPOSED DECISION 2**  
DOMLEC's cost of debt shall be fixed at 5.75%.
- **PROPOSED DECISION 3**  
The risk free rate to be the average of the US 10 Year Treasury Bill rate at December 2014 - that is 2.17%.
- **PROPOSED DECISION 4**  
The Commission proposes that there will be no risk premium due to DOMLEC's size.
- **PROPOSED DECISION 5**  
The Commission proposes to use Professor Damodaran group as the proxy utilities.
- **PROPOSED DECISION 6**  
The Commission proposes to use the Mature Market Risk Premium of 5.21% stated by Professor Damodaran as the implied equity risks approach.
- **PROPOSED DECISION 7**  
The Commission proposes that, based on the results of the application of the DCF and CAPM methodologies, DOMLEC's cost of equity for the tariff period shall be 10.28%.
- **PROPOSED DECISION 8**  
The Commission proposes that the WACC to be applied to DOMLEC's regulatory asset base shall be 8.56%.

## **Summary of Consultation Questions**

### **Consultation Question No 1:**

Do respondents agree with the Commission's proposed capital structure of DOMLEC i.e. 38% debt 62% equity? If not, please explain why not?

### **Consultation Question No 2:**

Do respondents have any views on the proposed use of the US 10 year Treasury Bill rate as the basis for fixing the risk free rate?

### **Consultation Question No 3:**

Do respondents agree with the use of Professor Damodaran proxy group as the proxy utilities?

Please provide reasons?

### **Consultation Question No 4:**

Do respondents agree with the use the Mature Market Risk Premium of 5.21% published by Professor Damodaran? Please provide reasons?



### References and Links:

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# Appendix 1

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## List of Comparator Companies

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

| COMPARATOR COMPANIES |   |                |              |                  |                         |  |
|----------------------|---|----------------|--------------|------------------|-------------------------|--|
| <b>Power</b>         | African Oxygen Ltd.<br>(JSE:AFX)                              | JSE:AFX        | South Africa | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Linde India Limited<br>(BSE:523457)                           | BSE:523457     | India        | Emerging Markets | India                   |  |
| <b>Power</b>         | OCI Materials Co., Ltd.<br>(KOSDAQ:A036490)                   | KOSDAQ:A036490 | South Korea  | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | Maxima Air Separation Center Ltd.<br>(TASE:MAXM)              | TASE:MAXM      | Israel       | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Hunan Kaimeite Gases Co., Ltd. (SZSE:002549)                  | SZSE:002549    | China        | Emerging Markets | China                   |  |
| <b>Power</b>         | Linde Pakistan Limited<br>(KASE:LINDE)                        | KASE:LINDE     | Pakistan     | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | SIG Gases Berhad<br>(KLSE:SIGGAS)                             | KLSE:SIGGAS    | Malaysia     | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | Ghani Gases Limited<br>(KASE:GGL)                             | KASE:GGL       | Pakistan     | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | BOC Gases Nigeria plc<br>(NGSE:BOCGAS)                        | NGSE:BOCGAS    | Nigeria      | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Carbacid Investments Ltd. (NASE:CARB.O)                       | NASE:CARB.O    | Kenya        | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Maghreb Oxygène S.A.<br>(CBSE:MOX)                            | CBSE:MOX       | Morocco      | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Wonik Materials Co., Ltd.<br>(KOSDAQ:A104830)                 | KOSDAQ:A104830 | South Korea  | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | Linde Bangladesh Limited<br>(DSE:LINDEBD)                     | DSE:LINDEBD    | Bangladesh   | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | Air Liquide Tunisie SA<br>(BVMT:AL)                           | BVMT:AL        | Tunisia      | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Ellenbarrie Industrial Gases Ltd.<br>(BSE:590087)             | BSE:590087     | India        | Emerging Markets | India                   |  |
| <b>Power</b>         | Messer Tehnogas AD<br>(BELEX:TGAS)                            | BELEX:TGAS     | Serbia       | Emerging Markets | Eastern Europe & Russia |  |
| <b>Power</b>         | Societe Ivoirienne d'Oxygene et d'Acetylene SA<br>(BRVM:SIVC) | BRVM:SIVC      | Ivory Coast  | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | BOC Kenya, Ltd.<br>(NASE:BOC.O)                               | NASE:BOC.O     | Kenya        | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | TOL Gases Limited<br>(DAR:TOL)                                | DAR:TOL        | Tanzania     | Emerging Markets | Africa and Middle East  |  |
| <b>Power</b>         | Korea Electric Power Corp. (KOSE:A015760)                     | KOSE:A015760   | South Korea  | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | JSC ROSSETI<br>(MICEX:RSTI)                                   | MICEX:RSTI     | Russia       | Emerging Markets | Eastern Europe & Russia |  |
| <b>Power</b>         | Open Joint-Stock Company INTER RAO UES<br>(MICEX:IRAO)        | MICEX:IRAO     | Russia       | Emerging Markets | Eastern Europe & Russia |  |
| <b>Power</b>         | NTPC Ltd.<br>(BSE:532555)                                     | BSE:532555     | India        | Emerging Markets | India                   |  |
| <b>Power</b>         | Tenaga Nasional Berhad<br>(KLSE:TENAGA)                       | KLSE:TENAGA    | Malaysia     | Emerging Markets | Small Asia              |  |
| <b>Power</b>         | CLP Holdings Ltd.<br>(SEHK:2)                                 | SEHK:2         | Hong Kong    | Emerging Markets | China                   |  |



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |      |               |                    |                         |                                      |
|--------------|---|------|---------------|--------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Enerjis (SNSE:ENERSIS)  | S.A. | SNSE:ENERSIS  | <b>Chile</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Huadian Power International Corporation Limited (SEHK:1071)                           |      | SEHK:1071     | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | GAIL (India) Limited (BSE:532155)   |      | BSE:532155    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | China Resources Power Holdings Co. Ltd. (SEHK:836)                                    |      | SEHK:836      | <b>Hong Kong</b>   | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Open Joint-Stock Company Federal Hydro-Generating Company - RusHydro (MICEX:HYDR)     |      | MICEX:HYDR    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Mosenergosbyt (MICEX:MSSB)  | Oao  | MICEX:MSSB    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Zhejiang Zheneng Electric Power Co., Ltd (SHSE:600023)                                |      | SHSE:600023   | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Manila Electric Co. (PSE:MER)   |      | PSE:MER       | <b>Philippines</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | CPFL Energia S.A. (BOVESPA:CPFE3)   |      | BOVESPA:CPFE3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | The Tata Power Company Limited (BSE:500400)   |      | BSE:500400    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | Open Joint Stock Company "Federal Grid Company of Unified Energy System" (MICEX:FEES) |      | MICEX:FEES    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | ENN Energy Holdings Limited (SEHK:2688)   |      | SEHK:2688     | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Compañía General de Electricidad S.A. (SNSE:CGE)                                      |      | SNSE:CGE      | <b>Chile</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | China Gas Holdings Limited (SEHK:384)   |      | SEHK:384      | <b>Hong Kong</b>   | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Open Joint Stock Company Mosenergo (MICEX:MSNG)                                       |      | MICEX:MSNG    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | The Hong Kong and China Gas Company Limited (SEHK:3)                                  |      | SEHK:3        | <b>Hong Kong</b>   | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Empresa Nacional de Electricidad S.A. (SNSE:ENDESA)                                   |      | SNSE:ENDESA   | <b>Chile</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | AES Elpa S.A. (BOVESPA:AELP3)   |      | BOVESPA:AELP3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Joint Stock Company RAO Energy System of East (MICEX:VRAO)                            |      | MICEX:VRAO    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | PT Perusahaan Gas Negara (Persero) TBK (JKSE:PGAS)                                    |      | JKSE:PGAS     | <b>Indonesia</b>   | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | China Resources Gas Group Limited (SEHK:1193)   |      | SEHK:1193     | <b>Hong Kong</b>   | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Light SA (BOVESPA:LIGT3)  |      | BOVESPA:LIGT3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | China International Power   |      | SEHK:2380     | <b>Hong Kong</b>   | <b>Emerging Markets</b> | <b>China</b>                         |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |  |               |                    |                         |                                      |  |
|--------------|--|---------------|--------------------|-------------------------|--------------------------------------|--|
|              | Development Ltd.<br>(SEHK:2380)  |               |                    |                         |                                      |  |
| <b>Power</b> | EDP - Energias do Brasil S.A.<br>(BOVESPA:ENBR3)   | BOVESPA:ENBR3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |  |
| <b>Power</b> | Adani Power Limited<br>(BSE:533096)  | BSE:533096    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |  |
| <b>Power</b> | CGN Power Co., Ltd.<br>(SEHK:1816)   | SEHK:1816     | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |  |
| <b>Power</b> | Interregional Distribution Grid Company of Centre Joint-Stock Company<br>(MICEX:MRKC)                | MICEX:MRKC    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |  |
| <b>Power</b> | Open joint-stock company The Second Generating Company of the Wholesale Power Market<br>(MICEX:OGKB) | MICEX:OGKB    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |  |
| <b>Power</b> | Guangzhou Development Group Incorporated<br>(SHSE:600098)  | SHSE:600098   | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |  |
| <b>Power</b> | Joint Stock Company Far-Eastern Energy Company<br>(MICEX:DVEC)                                       | MICEX:DVEC    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |  |
| <b>Power</b> | Reliance Infrastructure Ltd<br>(BSE:500390)  | BSE:500390    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |  |
| <b>Power</b> | Power Grid Corporation of India Limited<br>(BSE:532898)  | BSE:532898    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |  |
| <b>Power</b> | Energisa S.A.<br>(BOVESPA:ENGI3)   | BOVESPA:ENGI3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |  |
| <b>Power</b> | AES Gener S.A.<br>(SNSE:AESGENER)  | SNSE:AESGENER | <b>Chile</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |  |
| <b>Power</b> | Equatorial Energia S.A.<br>(BOVESPA:EQTL3)   | BOVESPA:EQTL3 | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |  |
| <b>Power</b> | Glow Energy Public Company Limited<br>(SET:GLOW)   | SET:GLOW      | <b>Thailand</b>    | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |
| <b>Power</b> | First Philippine Holdings Corporation<br>(PSE:FPH)   | PSE:FPH       | <b>Philippines</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |
| <b>Power</b> | Lopez Holdings Corporation<br>(PSE:LPZ)  | PSE:LPZ       | <b>Philippines</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |
| <b>Power</b> | Aboitiz Power Corp.<br>(PSE:AP)  | PSE:AP        | <b>Philippines</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |
| <b>Power</b> | Open Joint-Stock Company Interregional Distributive Grid Company of Urals<br>(MICEX:MRKU)            | MICEX:MRKU    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |  |
| <b>Power</b> | PTC India Limited<br>(BSE:532524)  | BSE:532524    | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |  |
| <b>Power</b> | Open Joint-Stock Company E.ON Russia<br>(MICEX:EONR)   | MICEX:EONR    | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |  |
| <b>Power</b> | K-Electric Limited<br>(KASE:KEL)   | KASE:KEL      | <b>Pakistan</b>    | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |
| <b>Power</b> | First Generation Corporation<br>(PSE:FGEN)   | PSE:FGEN      | <b>Philippines</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |  |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |  |                |             |                  |                           |
|--------------|--|----------------|-------------|------------------|---------------------------|
| <b>Power</b> | Open Joint Stock Company Interregional Distribution Grid Company of Siberia (MICEX:MRKS) | MICEX:MRKS     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Interconexión Eléctrica S.A. E.S.P. (BVC:ISA)  | BVC:ISA        | Colombia    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Open Joint-Stock Company Enel Russia (MICEX:ENRU)  | MICEX:ENRU     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Gasco S.A. (SNSE:GASCO)  | SNSE:GASCO     | Chile       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Chilectra S.A. (SNSE:CHILECTRA)  | SNSE:CHILECTRA | Chile       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | The Hub Power Limited (KASE:HUBC)  | KASE:HUBC      | Pakistan    | Emerging Markets | Small Asia                |
| <b>Power</b> | CESC Limited (BSE:500084)  | BSE:500084     | India       | Emerging Markets | India                     |
| <b>Power</b> | Ampla Energia e Serviços S.A. (BOVESPA:CBEE3)  | BOVESPA:CBEE3  | Brazil      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Ratchaburi Electricity Generating Holding Public Company Limited (SET:RATCH)             | SET:RATCH      | Thailand    | Emerging Markets | Small Asia                |
| <b>Power</b> | Beijing Jingneng Thermal Power Co., Ltd. (SHSE:600578)                                   | SHSE:600578    | China       | Emerging Markets | China                     |
| <b>Power</b> | Huadian Energy Limited (SHSE:900937)   | SHSE:900937    | China       | Emerging Markets | China                     |
| <b>Power</b> | Minera Valparaiso S.A. (SNSE:MINERA)   | SNSE:MINERA    | Chile       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Torrent Power Limited (BSE:532779)   | BSE:532779     | India       | Emerging Markets | India                     |
| <b>Power</b> | Colbun S.A. (SNSE:COLBUN)  | SNSE:COLBUN    | Chile       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | JSW Energy Limited (BSE:533148)  | BSE:533148     | India       | Emerging Markets | India                     |
| <b>Power</b> | Open Joint-Stock Company Interregional Distribution Grid Company of Volga (MICEX:MRKV)   | MICEX:MRKV     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Open Joint Stock Company Quadra - Power Generation (MICEX:TGKD)                          | MICEX:TGKD     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Companhia Distribuidora de Gás do Rio de Janeiro - CEG (BOVESPA:CEGR3)                   | BOVESPA:CEGR3  | Brazil      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Petronas Gas Bhd (KLSE:PETGAS)   | KLSE:PETGAS    | Malaysia    | Emerging Markets | Small Asia                |
| <b>Power</b> | YESCO Co., Ltd. (KOSE:A015360)   | KOSE:A015360   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Celsia SA (BVC:CELSIA)   | BVC:CELSIA     | Colombia    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | E-CL S.A. (SNSE:ECL)   | SNSE:ECL       | Chile       | Emerging Markets | Latin America & Caribbean |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |              |           |                  |                           |
|--------------|---|--------------|-----------|------------------|---------------------------|
| <b>Power</b> | Jordanian Electric Power Company Limited (ASE:JOEP)   | ASE:JOEP     | Jordan    | Emerging Markets | Africa and Middle East    |
| <b>Power</b> | Lenenergo, Open Joint Stock Company of the Power Industry and Electrification (MICEX:LSNG)  | MICEX:LSNG   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | The Kenya Power and Lighting Company Limited (NASE:KPLC.O)                                  | NASE:KPLC.O  | Kenya     | Emerging Markets | Africa and Middle East    |
| <b>Power</b> | Open Joint Stock Company Interregional Distribution Grid Company of North-West (MICEX:MRKZ) | MICEX:MRKZ   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Kot Addu Power Co. Ltd. (KASE:KAPCO)  | KASE:KAPCO   | Pakistan  | Emerging Markets | Small Asia                |
| <b>Power</b> | Isagen S.a. E.s.p. (BVC:ISAGEN)   | BVC:ISAGEN   | Colombia  | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Empresa de Energia de Bogotá S.A. ESP (BVC:EEB)   | BVC:EEB      | Colombia  | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Reliance Power Limited (BSE:532939)   | BSE:532939   | India     | Emerging Markets | India                     |
| <b>Power</b> | Promigas S.A. E.S.P. (BVC:PROMIGAS)   | BVC:PROMIGAS | Colombia  | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Kuban Power Sale Company Open Joint-Stock Company (MICEX:KBSB)                              | MICEX:KBSB   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Neyveli Lignite Corporation Limited (BSE:513683)  | BSE:513683   | India     | Emerging Markets | India                     |
| <b>Power</b> | Open Joint-Stock Company of Energy and Electrification Samaraenergo (MICEX:SAGO)            | MICEX:SAGO   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | OJSC Energosbyt Rostovenergo (MICEX:RTSB)   | MICEX:RTSB   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Towngas China Company Limited (SEHK:1083)   | SEHK:1083    | Hong Kong | Emerging Markets | China                     |
| <b>Power</b> | Perm Energy Retail Company OJSC (MICEX:PMSB)  | MICEX:PMSB   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Chongqing Gas Group Corporation Ltd. (SHSE:600917)  | SHSE:600917  | China     | Emerging Markets | China                     |
| <b>Power</b> | Chelyabenergosbyt (MICEX:CLSB)  | MICEX:CLSB   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | China Oil And Gas Group Limited (SEHK:603)  | SEHK:603     | Hong Kong | Emerging Markets | China                     |
| <b>Power</b> | Public Joint-Stock Company Territorial Generating Company #2 (MICEX:TGKB)                   | MICEX:TGKB   | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | CEZ Electro Bulgaria AD (BUL:1CZ)   | BUL:1CZ      | Bulgaria  | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Interregional Distribution Grid Company of South  | MICEX:MRKY   | Russia    | Emerging Markets | Eastern Europe & Russia   |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |               |           |                  |                           |
|--------------|---|---------------|-----------|------------------|---------------------------|
|              | Joint Stock Company (MICEX:MRKY)  |               |           |                  |                           |
| <b>Power</b> | Lesto AB (NSEL:LES1L)   | NSEL:LES1L    | Lithuania | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | CEMAR - Cia Energetica do Maranhao (SOMA:ENMA3B)                          | SOMA:ENMA3B   | Brazil    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Luz del Sur S.A.A. (BVL:LUSURC1)  | BVL:LUSURC1   | Peru      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Open Joint Stock Company Nizhegorodskaya sbytovaya kompaniya (MICEX:NNSB) | MICEX:NNSB    | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | CNTEE Transelectrica S.A. (BVB:TEL)                                       | BVB:TEL       | Romania   | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Aegis Logistics Limited (BSE:500003)                                      | BSE:500003    | India     | Emerging Markets | India                     |
| <b>Power</b> | Joint Stock Company Yakutskenergo (MICEX:YKEN)                            | MICEX:YKEN    | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Kuban Power and Electrification Open Joint Stock Company (MICEX:KUBE)     | MICEX:KUBE    | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Empresa De Distribucion Electrica De Lima Norte S.a.a. (BVL:EDELNOC1)     | BVL:EDELNOC1  | Peru      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Cheung Kong Infrastructure Holdings Ltd. (SEHK:1038)                      | SEHK:1038     | Hong Kong | Emerging Markets | China                     |
| <b>Power</b> | Power Assets Holdings Limited (SEHK:6)                                    | SEHK:6        | Hong Kong | Emerging Markets | China                     |
| <b>Power</b> | Gas Malaysia Berhad (KLSE:GASMSIA)  | KLSE:GASMSIA  | Malaysia  | Emerging Markets | Small Asia                |
| <b>Power</b> | Shenyang Jinshan Energy Co., Ltd. (SHSE:600396)                           | SHSE:600396   | China     | Emerging Markets | China                     |
| <b>Power</b> | Infraestructura Energética Nova, S.A.B. de C.V. (BMV:IENOVA *)            | BMV:IENOVA *  | Mexico    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Jorf Lasfar Energy Company (CBSE:TQM)                                     | CBSE:TQM      | Morocco   | Emerging Markets | Africa and Middle East    |
| <b>Power</b> | Pampa Energia SA (BASE:PAMP)  | BASE:PAMP     | Argentina | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Krasnoyarskenergosbyt OAO (MICEX:KRSB)                                    | MICEX:KRSB    | Russia    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | EnerSur S.A. (BVL:ENERSUC1)   | BVL:ENERSUC1  | Peru      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Indraprastha Gas Limited (BSE:532514)                                     | BSE:532514    | India     | Emerging Markets | India                     |
| <b>Power</b> | Companhia Energética do Rio Grande do Norte - COSERN (BOVESPA:CSRN3)      | BOVESPA:CSRN3 | Brazil    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Societatea Nationala Nuclearelectrica S.A. (BVB:SNN)                      | BVB:SNN       | Romania   | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Electricity Generating Public Company Limited (SET:EGCO)                  | SET:EGCO      | Thailand  | Emerging Markets | Small Asia                |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |                |              |                  |                           |
|--------------|---|----------------|--------------|------------------|---------------------------|
| <b>Power</b> | Lietuvos Dujos AB<br>(NSEL:LDJ1L)   | NSEL:LDJ1L     | Lithuania    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Henan Yuneng Holding Co.,Ltd. (SZSE:001896)   | SZSE:001896    | China        | Emerging Markets | China                     |
| <b>Power</b> | Joint-stock company Voronezh energy selling company (MICEX:VRSB)                              | MICEX:VRSB     | Russia       | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | National Gas & Industrialization Co. (SASE:2080)  | SASE:2080      | Saudi Arabia | Emerging Markets | Africa and Middle East    |
| <b>Power</b> | Gujarat Gas Company Limited (BSE:523477)  | BSE:523477     | India        | Emerging Markets | India                     |
| <b>Power</b> | Joint Stock Company Kazakhstan Electricity Grid Operating Company (KAS:KEGC)                  | KAS:KEGC       | Kazakhstan   | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Jiangxi Ganneng Co., Ltd. (SZSE:000899)   | SZSE:000899    | China        | Emerging Markets | China                     |
| <b>Power</b> | Zhongyu Gas Holdings Ltd. (SEHK:3633)   | SEHK:3633      | Hong Kong    | Emerging Markets | China                     |
| <b>Power</b> | Interregional Distribution Grid Company of Northern Caucasus Joint-Stock Company (MICEX:MRKK) | MICEX:MRKK     | Russia       | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Energopro Sales AD (BUL:4ES)  | BUL:4ES        | Bulgaria     | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | China Power New Energy Development Company Limited (SEHK:735)                                 | SEHK:735       | Hong Kong    | Emerging Markets | China                     |
| <b>Power</b> | Pakgen Power Ltd (KASE:PKGP)  | KASE:PKGP      | Pakistan     | Emerging Markets | Small Asia                |
| <b>Power</b> | Umeme Limited (UGSE:UMEME)  | UGSE:UMEME     | Uganda       | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Joint Stock Company Kamchatskenergo (MICEX:KCHE)  | MICEX:KCHE     | Russia       | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | KSK Energy Ventures Limited (BSE:532997)  | BSE:532997     | India        | Emerging Markets | India                     |
| <b>Power</b> | MetroGAS S.A. (BASE:METR)   | BASE:METR      | Argentina    | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Companhia Estadual de Geracao e Transmissao de Energia Eletrica - CEEE-GT (BOVESPA:EEEL3)     | BOVESPA:EEEL3  | Brazil       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Lietuvos energijos gamyba AB (NSEL:LNR1L)   | NSEL:LNR1L     | Lithuania    | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Yunnan Wenshan Electric Power Co.,Ltd. (SHSE:600995)  | SHSE:600995    | China        | Emerging Markets | China                     |
| <b>Power</b> | Lalpir Power Limited (KASE:LPL)   | KASE:LPL       | Pakistan     | Emerging Markets | Small Asia                |
| <b>Power</b> | Dhaka Electric Supply Company Limited (DSE:DESCO)   | DSE:DESCO      | Bangladesh   | Emerging Markets | Small Asia                |
| <b>Power</b> | Empresa Electrica Pehuenche S.A. (SNSE:PEHUENCHE)   | SNSE:PEHUENCHE | Chile        | Emerging Markets | Latin America & Caribbean |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |  |                 |              |                       |                         |                                      |
|--------------|--|-----------------|--------------|-----------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Binhai Investment Company Limited (SEHK:2886)                          |                 | SEHK:2886    | <b>Hong Kong</b>      | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | PetroVietNam Pressure Distribution Joint Stock Company (HOSE:PGD)      | Low Gas         | HOSE:PGD     | <b>Vietnam</b>        | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | SJVN Limited (NSEI:SJVN)   |                 | NSEI:SJVN    | <b>India</b>          | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | Irbid District Electricity Co. Ltd. (ASE:IREL)                         |                 | ASE:IREL     | <b>Jordan</b>         | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Territorial Generation Company 14 Open Stock Company (MICEX:TGKN)      |                 | MICEX:TGKN   | <b>Russia</b>         | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Nishat Chunian Power Ltd. (KASE:NCPL)                                  |                 | KASE:NCPL    | <b>Pakistan</b>       | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Nishat Power Limited (KASE:NPL)  |                 | KASE:NPL     | <b>Pakistan</b>       | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | AB Inter RAO Lietuva (WSE:IRL)   |                 | WSE:IRL      | <b>Lithuania</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Ascendant Group Ltd. (BER:AGL.BH)                                      |                 | BER:AGL.BH   | <b>Bermuda</b>        | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | CEZ Distribution Bulgaria AD (BUL:3CZ)                                 |                 | BUL:3CZ      | <b>Bulgaria</b>       | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Altern Energy Ltd. (KASE:ALTN)   |                 | KASE:ALTN    | <b>Pakistan</b>       | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Caribbean Utilities Co. Ltd. (OTCPK:CUPU.F)                            |                 | OTCPK:CUPU.F | <b>Cayman Islands</b> | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Gujarat Industries Power Co. Ltd. (BSE:517300)                         |                 | BSE:517300   | <b>India</b>          | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | Chongqing Gorges Conservancy and Electric Power Co.,Ltd. (SHSE:600116) | Three Water and | SHSE:600116  | <b>China</b>          | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Tianjin Jinran Public Utilities Company Limited (SEHK:1265)            |                 | SEHK:1265    | <b>China</b>          | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Mega First Corp. Bhd (KLSE:MFCB)                                       |                 | KLSE:MFCB    | <b>Malaysia</b>       | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Tomsk Distribution Company (MICEX:TORS)                                |                 | MICEX:TORS   | <b>Russia</b>         | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Dagestan Power Sale Company Open Joint-Stock Company (MICEX:DASB)      |                 | MICEX:DASB   | <b>Russia</b>         | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | SMN Power Holding SAOG (MSM:SMNP)                                      |                 | MSM:SMNP     | <b>Oman</b>           | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Chongqing Fuling Electric Power Industrial Co.,Ltd. (SHSE:600452)      |                 | SHSE:600452  | <b>China</b>          | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | The Great Taipei Gas Corporation (TSEC:9908)                           |                 | TSEC:9908    | <b>Taiwan</b>         | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | LITGRID (NSEL:LGD1L)   | AB              | NSEL:LGD1L   | <b>Lithuania</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |               |                        |                         |                                      |
|--------------|---|---------------|------------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Gujarat State Petronet Limited (BSE:532702)                                       | BSE:532702    | <b>India</b>           | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | China Tian Lun Gas Holdings Limited (SEHK:1600)                                   | SEHK:1600     | <b>China</b>           | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Sembcorp Power and Water Company (MSM:SSPW)                                       | MSM:SSPW      | <b>Oman</b>            | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Energo-Pro Grid AD (BUL:2EG)  | BUL:2EG       | <b>Bulgaria</b>        | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Jersey Electricity plc (LSE:JEL)  | LSE:JEL       | <b>Channel Islands</b> | <b>Emerging Markets</b> | <b>UK</b>                            |
| <b>Power</b> | Compania de Transporte de Energia Electrica en Alta Tension Transener (BASE:TRAN) | BASE:TRAN     | <b>Argentina</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Khulna Power Company Ltd. (DSE:KPCL)  | DSE:KPCL      | <b>Bangladesh</b>      | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Camuzzi Gas Pampeana S.A. (BASE:CGPA2)  | BASE:CGPA2    | <b>Argentina</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Kohinoor Energy Limited (KASE:KOHE)   | KASE:KOHE     | <b>Pakistan</b>        | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Amber Energy Limited (SEHK:90)  | SEHK:90       | <b>China</b>           | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Sahacogen (Chonburi) Public Company Limited (SET:SCG)                             | SET:SCG       | <b>Thailand</b>        | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Open Joint Stock Company Gazprom Gazoraspredelenie Rostov-na-Donu (MICEX:RTGZ)    | MICEX:RTGZ    | <b>Russia</b>          | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Endesa Costanera SA (OTCPK:EDCF.F)  | OTCPK:EDCF.F  | <b>Argentina</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | egypt gas company -sae (CASE:EGAS)  | CASE:EGAS     | <b>Egypt</b>           | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Al Batinah Power Company (MSM:BATP)   | MSM:BATP      | <b>Oman</b>            | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Al Suwadi Power Company (MSM:SUWP)  | MSM:SUWP      | <b>Oman</b>            | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Omnican Ltd. (MUSE:MTMD)  | MUSE:MTMD     | <b>Mauritius</b>       | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Sichuan Minjiang Hydropower Co., Ltd. (SHSE:600131)                               | SHSE:600131   | <b>China</b>           | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Capex S.A. (BASE:CAPX)  | BASE:CAPX     | <b>Argentina</b>       | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Sohar Power Company SAOG (MSM:SHPS)   | MSM:SHPS      | <b>Oman</b>            | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | India Power Corporation Limited (NSEI:DPSCLTD)                                    | NSEI:DPSCLTD  | <b>India</b>           | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | Sichuan Xichang Electric Power Company Ltd. (SHSE:600505)                         | SHSE:600505   | <b>China</b>           | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Power Grid Company Of Bangladesh Ltd (DSE:POWERGRID)                              | DSE:POWERGRID | <b>Bangladesh</b>      | <b>Emerging Markets</b> | <b>Small Asia</b>                    |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |  |                    |                 |                              |                         |                                      |
|--------------|--|--------------------|-----------------|------------------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Alsons Resources, (PSE:ACR)                                | Consolidated Inc.  | PSE:ACR         | <b>Philippines</b>           | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | AB Amber (NSEL:AMG1L)                                      | Grid               | NSEL:AMG1L      | <b>Lithuania</b>             | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Central Puerto (BASE:CEPU2)                                | S.A.               | BASE:CEPU2      | <b>Argentina</b>             | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Engro Qadirpur (KASE:EPQL)                                 | Powergen Limited   | KASE:EPQL       | <b>Pakistan</b>              | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Shin Hai Corporation (TSEC:9926)                           | Gas                | TSEC:9926       | <b>Taiwan</b>                | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | RattanIndia Limited (BSE:533122)                           | Power              | BSE:533122      | <b>India</b>                 | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | C&G Environmental Protection Limited (SGX:D79)             | Holdings           | SGX:D79         | <b>Hong Kong</b>             | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Summit Power Limited (DSE:SUMITPOWER)                      |                    | DSE:SUMITPOWER  | <b>Bangladesh</b>            | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Hsin Tai Gas Co Ltd (GTSM:8917)                            |                    | GTSM:8917       | <b>Taiwan</b>                | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Taiwan Cogeneration Corporation (TSEC:8926)                |                    | TSEC:8926       | <b>Taiwan</b>                | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Fulcrum Utility Services Limited (AIM:FCRM)                |                    | AIM:FCRM        | <b>Cayman Islands</b>        | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | SPC Power Corporation (PSE:SPC)                            |                    | PSE:SPC         | <b>Philippines</b>           | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Sitara Energy Limited (KASE:SEL)                           |                    | KASE:SEL        | <b>Pakistan</b>              | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Hsin Kao Gas Co., Ltd. (TSEC:9931)                         |                    | TSEC:9931       | <b>Taiwan</b>                | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Empresa Eléctrica de Magallanes S.A. (SNSE:EDELMAG)        |                    | SNSE:EDELMAG    | <b>Chile</b>                 | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Ta-Yuan Cogeneration Company Ltd (GTSM:8931)               |                    | GTSM:8931       | <b>Taiwan</b>                | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Liaoning Energy Invest Co.,Ltd (SHSE:600758)               | Hongyang Resources | SHSE:600758     | <b>China</b>                 | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | BarakatUllah Dynamics (DSE:BEDL)                           | Electro Limited    | DSE:BEDL        | <b>Bangladesh</b>            | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Empresa Eléctrica Pilmaiquén S.A. (SNSE:PILMAIQUEN)        |                    | SNSE:PILMAIQUEN | <b>Chile</b>                 | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Palestine Electric Company (PLSE:PEC)                      |                    | PLSE:PEC        | <b>Palestinian Authority</b> | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | United Power Company (SAOG) (MSM:UECS)                     |                    | MSM:UECS        | <b>Oman</b>                  | <b>Emerging Markets</b> | <b>Africa and Middle East</b>        |
| <b>Power</b> | Eden Inc. Berhad (KLSE:EDEN)                               |                    | KLSE:EDEN       | <b>Malaysia</b>              | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Trans-Asia Oil and Energy Development Corporation (PSE:TA) |                    | PSE:TA          | <b>Philippines</b>           | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Summit Purbanchol Power Company Limited (DSE:SPPCL)        |                    | DSE:SPPCL       | <b>Bangladesh</b>            | <b>Emerging Markets</b> | <b>Small Asia</b>                    |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |              |              |                  |                         |
|--------------|---|--------------|--------------|------------------|-------------------------|
| <b>Power</b> | Can Don Hydro Power Joint Stock Company (HOSE:SJD)                              | HOSE:SJD     | Vietnam      | Emerging Markets | Small Asia              |
| <b>Power</b> | PT Leyand International Tbk (JKSE:LAPD)   | JKSE:LAPD    | Indonesia    | Emerging Markets | Small Asia              |
| <b>Power</b> | Energy Development Co. Ltd. (BSE:532219)  | BSE:532219   | India        | Emerging Markets | India                   |
| <b>Power</b> | Japan Power Generation Limited (KASE:JPGL)                                      | KASE:JPGL    | Pakistan     | Emerging Markets | Small Asia              |
| <b>Power</b> | MSR India Ltd (BSE:508922)  | BSE:508922   | India        | Emerging Markets | India                   |
| <b>Power</b> | GBB Power Ltd. (DSE:GBBPOWER)   | DSE:GBBPOWER | Bangladesh   | Emerging Markets | Small Asia              |
| <b>Power</b> | Alternative Energy Limited (AIM:ALR)  | AIM:ALR      | Singapore    | Emerging Markets | Small Asia              |
| <b>Power</b> | GD Power Development Co., Ltd (SHSE:600795)                                     | SHSE:600795  | China        | Emerging Markets | China                   |
| <b>Power</b> | Saudi Electricity Company (SASE:5110)   | SASE:5110    | Saudi Arabia | Emerging Markets | Africa and Middle East  |
| <b>Power</b> | SDIC Power Holdings CO., LTD. (SHSE:600886)                                     | SHSE:600886  | China        | Emerging Markets | China                   |
| <b>Power</b> | Guangdong Electric Power Development Co. Ltd. (SZSE:200539)                     | SZSE:200539  | China        | Emerging Markets | China                   |
| <b>Power</b> | Shenergy Company Limited (SHSE:600642)  | SHSE:600642  | China        | Emerging Markets | China                   |
| <b>Power</b> | Joint-Stock Company Moscow United Electric Grid Company (MICEX:MSRS)            | MICEX:MSRS   | Russia       | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | Petrovietnam Gas Joint Stock Corporation (HOSE:GAS)                             | HOSE:GAS     | Vietnam      | Emerging Markets | Small Asia              |
| <b>Power</b> | Irkutsk Joint Stock Company of Energetics and Electrification (MICEX:IRGZ)      | MICEX:IRGZ   | Russia       | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | Huadian Fuxin Energy Corporation Limited (SEHK:816)                             | SEHK:816     | China        | Emerging Markets | China                   |
| <b>Power</b> | Anhui Province Wenergy Company Limited (SZSE:000543)                            | SZSE:000543  | China        | Emerging Markets | China                   |
| <b>Power</b> | Shenzhen Energy Group Co., Ltd. (SZSE:000027)                                   | SZSE:000027  | China        | Emerging Markets | China                   |
| <b>Power</b> | Inner Mongolia MengDian HuaNeng Thermal Power Corporation Limited (SHSE:600863) | SHSE:600863  | China        | Emerging Markets | China                   |
| <b>Power</b> | Seoul City Gas Co., Ltd. (KOSE:A017390)   | KOSE:A017390 | South Korea  | Emerging Markets | Small Asia              |
| <b>Power</b> | Volga Territorial Generation Company (MICEX:VTGK)                               | MICEX:VTGK   | Russia       | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | Shanxi Zhangze Electric Power Co.,Ltd. (SZSE:000767)                            | SZSE:000767  | China        | Emerging Markets | China                   |
| <b>Power</b> | Jointo Energy Investment Co., ltd. Hebei. (SZSE:000600)                         | SZSE:000600  | China        | Emerging Markets | China                   |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |              |                    |                         |                                      |
|--------------|---|--------------|--------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Beijing Jingneng Clean Energy Co., Limited (SEHK:579)                                 | SEHK:579     | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Guodian Changyuan Electric Power Co. Ltd. (SZSE:000966)                               | SZSE:000966  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Top Energy Company Ltd. Shanxi (SHSE:600780)  | SHSE:600780  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Datang Huayin Electric Power Ltd. (SHSE:600744)                                       | SHSE:600744  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Guangzhou Hengyun Enterprises Holding Ltd. (SZSE:000531)                              | SZSE:000531  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Shaanxi Provincial Natural Gas Company Limited (SZSE:002267)                          | SZSE:002267  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Guangdong Baolihua New Energy Stock Co.,Ltd. (SZSE:000690)                            | SZSE:000690  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Jilin Power Share Co.,Ltd. (SZSE:000875)  | SZSE:000875  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | JSC Latvijas Gaze (RISE:GZE1R)  | RISE:GZE1R   | <b>Latvia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Shanghai DaZhong Public Utilities(Group) Co.,Ltd (SHSE:600635)                        | SHSE:600635  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | CPI Yuanda Environmental-Protection (Group) Co., Ltd. (SHSE:600292)                   | SHSE:600292  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Zhejiang Fuchunjiang Environmental Thermolectric Co.,LTD (SZSE:002479)                | SZSE:002479  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Xinjiang Tianfu Energy Co., Ltd. (SHSE:600509)  | SHSE:600509  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Shandong Xinneng Taishan Power Generation Co.,Ltd. (SZSE:000720)                      | SZSE:000720  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Guangdong Shaoneng Group Co., Ltd. (SZSE:000601)                                      | SZSE:000601  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Empresa Distribuidora y Comercializadora Norte S.A. (BASE:EDN)                        | BASE:EDN     | <b>Argentina</b>   | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Hunan Chen Dian International Development Share-holding Company Limited (SHSE:600969) | SHSE:600969  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Korea Electric Power Industrial Development Co., Ltd (KOSE:A130660)                   | KOSE:A130660 | <b>South Korea</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Leshan Electric Power Co., Ltd. (SHSE:600644)   | SHSE:600644  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | Sichuan Guangan AAA Public Co., Ltd. (SHSE:600979)                                    | SHSE:600979  | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | ShinHsiung Natural Gas Inc. (GTSM:8908)   | GTSM:8908    | <b>Taiwan</b>      | <b>Emerging Markets</b> | <b>Small Asia</b>                    |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |              |             |                  |                           |
|--------------|---|--------------|-------------|------------------|---------------------------|
| <b>Power</b> | Sichuan Mingxing Electric Power Co., Ltd. (SHSE:600101)           | SHSE:600101  | China       | Emerging Markets | China                     |
| <b>Power</b> | Fujian Mindong Electric Power Limited Company (SZSE:000993)       | SZSE:000993  | China       | Emerging Markets | China                     |
| <b>Power</b> | Jiangsu Wujiang China Eastern Silk Market Co., Ltd. (SZSE:000301) | SZSE:000301  | China       | Emerging Markets | China                     |
| <b>Power</b> | Empresa Electrica de Iquique S.A. (SNSE:ELIQSA)                   | SNSE:ELIQSA  | Chile       | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Shin Shin Natural Gas Company Limited (TSEC:9918)                 | TSEC:9918    | Taiwan      | Emerging Markets | Small Asia                |
| <b>Power</b> | BaRia Thermal Power Joint Stock Company (HOSE:BTP)                | HOSE:BTP     | Vietnam     | Emerging Markets | Small Asia                |
| <b>Power</b> | Guangzhou Devotion Thermal Technology Co., Ltd. (SZSE:300335)     | SZSE:300335  | China       | Emerging Markets | China                     |
| <b>Power</b> | Xinjiang Haoyuan Natural Gas Co., Ltd. (SZSE:002700)              | SZSE:002700  | China       | Emerging Markets | China                     |
| <b>Power</b> | Ninh Binh Thermal Power Joint Stock Company (HASTC:NBP)           | HASTC:NBP    | Vietnam     | Emerging Markets | Small Asia                |
| <b>Power</b> | Thac Mo Hydro Power Joint Stock Company (HOSE:TMP)                | HOSE:TMP     | Vietnam     | Emerging Markets | Small Asia                |
| <b>Power</b> | Novosibirskenergo (MICEX:NVNG)                                    | MICEX:NVNG   | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Huaneng Power International, Inc. (SEHK:902)                      | SEHK:902     | China       | Emerging Markets | China                     |
| <b>Power</b> | Datang International Power Generation Co., Ltd. (SEHK:991)        | SEHK:991     | China       | Emerging Markets | China                     |
| <b>Power</b> | HK Electric Investments Limited (SEHK:2638)                       | SEHK:2638    | Hong Kong   | Emerging Markets | China                     |
| <b>Power</b> | Korea Gas Corp. (KOSE:A036460)                                    | KOSE:A036460 | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Shanghai Electric Power Company Limited (SHSE:600021)             | SHSE:600021  | China       | Emerging Markets | China                     |
| <b>Power</b> | Shenzhen Gas Corporation Ltd. (SHSE:601139)                       | SHSE:601139  | China       | Emerging Markets | China                     |
| <b>Power</b> | CGN Meiya Power Holdings Co., Ltd. (SEHK:1811)                    | SEHK:1811    | Hong Kong   | Emerging Markets | China                     |
| <b>Power</b> | Guangxi Guidong Electric Power Co. Ltd. (SHSE:600310)             | SHSE:600310  | China       | Emerging Markets | China                     |
| <b>Power</b> | Korea District Heating Corp. (KOSE:A071320)                       | KOSE:A071320 | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Shenzhen Nanshan Power Co., Ltd. (SZSE:200037)                    | SZSE:200037  | China       | Emerging Markets | China                     |
| <b>Power</b> | Samchully Co.,Ltd. (KOSE:A004690)                                 | KOSE:A004690 | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Compagnie Ivoirienne d'Electricité (BRVM:CIEC)                    | BRVM:CIEC    | Ivory Coast | Emerging Markets | Africa and Middle East    |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |                |             |                  |                           |
|--------------|---|----------------|-------------|------------------|---------------------------|
| <b>Power</b> | Pha Lai Thermal Power JSC (HOSE:PPC)  | HOSE:PPC       | Vietnam     | Emerging Markets | Small Asia                |
| <b>Power</b> | E1 Corporation (KOSE:A017940)   | KOSE:A017940   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Kyungdong City Gas Co., Ltd. (KOSE:A012320)   | KOSE:A012320   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Sui Southern Gas Co., Ltd. (KASE:SSGC)  | KASE:SSGC      | Pakistan    | Emerging Markets | Small Asia                |
| <b>Power</b> | Busan City Gas Co., Ltd. (KOSE:A015350)   | KOSE:A015350   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Joint Stock Company Territorial Generating Company No.1 (MICEX:TGKA)                                | MICEX:TGKA     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Eletrobrás Participações S.A. - ELETROPAR (BOVESPA:LIPR3)   | BOVESPA:LIPR3  | Brazil      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Interregional Distribution Grid Company of Center and Volga Region Joint Stock Company (MICEX:MRKP) | MICEX:MRKP     | Russia      | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | Hanjin Heavy Industries & Construction Holdings Co., Ltd. (KOSE:A003480)                            | KOSE:A003480   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Sui Northern Gas Pipelines Ltd. (KASE:SNGP)   | KASE:SNGP      | Pakistan    | Emerging Markets | Small Asia                |
| <b>Power</b> | Redentor Energia SA (BOVESPA:RDTR3)   | BOVESPA:RDTR3  | Brazil      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Public Joint-Stock Company Centrengo (UKR:CEEN)   | UKR:CEEN       | Ukraine     | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | KG Eco Technology Services Co., Ltd. (KOSDAQ:A151860)   | KOSDAQ:A151860 | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Daesung Holdings Co., Ltd. (KOSE:A016710)   | KOSE:A016710   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Copperbelt Energy Corporation PLC (LUSE:CEC)  | LUSE:CEC       | Zambia      | Emerging Markets | Africa and Middle East    |
| <b>Power</b> | Daesung Energy Co., Ltd. (KOSE:A117580)   | KOSE:A117580   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Saif Power Limited (KASE:SPWL)  | KASE:SPWL      | Pakistan    | Emerging Markets | Small Asia                |
| <b>Power</b> | Kyung Nam Energy Co., Ltd. (KOSE:A008020)   | KOSE:A008020   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | Eneva S.A. (BOVESPA:ENEV3)  | BOVESPA:ENEV3  | Brazil      | Emerging Markets | Latin America & Caribbean |
| <b>Power</b> | Incheon City Gas Co., Ltd. (KOSE:A034590)   | KOSE:A034590   | South Korea | Emerging Markets | Small Asia                |
| <b>Power</b> | DTEK Zakhidenergo PJSC (UKR:ZAEN)   | UKR:ZAEN       | Ukraine     | Emerging Markets | Eastern Europe & Russia   |
| <b>Power</b> | ThacBa Hydropower Joint Stock Company (HOSE:TBC)  | HOSE:TBC       | Vietnam     | Emerging Markets | Small Asia                |
| <b>Power</b> | RattanIndia Infrastructure Limited (BSE:534597)   | BSE:534597     | India       | Emerging Markets | India                     |

## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |   |                |                    |                         |                                      |
|--------------|---|----------------|--------------------|-------------------------|--------------------------------------|
| <b>Power</b> | Open joint stock company Donbasenergo (UKR:DOEN)                            | UKR:DOEN       | <b>Ukraine</b>     | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | GSE Co., Ltd. (KOSDAQ:A053050)  | KOSDAQ:A053050 | <b>South Korea</b> | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Takuni Group Public Company Limited (SET:TAKUNI)                            | SET:TAKUNI     | <b>Thailand</b>    | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Khanh Hoa Power Joint Stock Company (HOSE:KHP)                              | HOSE:KHP       | <b>Vietnam</b>     | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Magadanenergo (MICEX:MAGE)  | MICEX:MAGE     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Tay Nguyen Electricity Investment Joint Stock Company (HOSE:TIC)            | HOSE:TIC       | <b>Vietnam</b>     | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | China New Energy Group Co. (OTCPK:CNER)                                     | OTCPK:CNER     | <b>China</b>       | <b>Emerging Markets</b> | <b>China</b>                         |
| <b>Power</b> | GTD Participações, SA (SOMA:GTDP3B)   | SOMA:GTDP3B    | <b>Brazil</b>      | <b>Emerging Markets</b> | <b>Latin America &amp; Caribbean</b> |
| <b>Power</b> | Emergent Global Edu and Services Limited (BSE:506180)                       | BSE:506180     | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | PJSC Zakarpattiaoblenergo (UKR:ZOEN)  | UKR:ZOEN       | <b>Ukraine</b>     | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Idico Urban and House Development Investment Joint Stock Company (HOSE:UIC) | HOSE:UIC       | <b>Vietnam</b>     | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | Volgogradenergoby Open Joint-Stock Company (MICEX:VGSB)                     | MICEX:VGSB     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Energy and Electrification Joint-Stock Company Saratovenergo (MICEX:SARE)   | MICEX:SARE     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Vladimir Power Sale Company Open Joint-Stock Company (MICEX:VDSB)           | MICEX:VDSB     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Stavropolenergoby Open Joint Stock Company (MICEX:STSB)                     | MICEX:STSB     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Astrakhan Power Sale Company Open Joint-Stock Company (MICEX:ASSB)          | MICEX:ASSB     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Kostroma Power Sale Company Open Joint-Stock Company (MICEX:KTSB)           | MICEX:KTSB     | <b>Russia</b>      | <b>Emerging Markets</b> | <b>Eastern Europe &amp; Russia</b>   |
| <b>Power</b> | Suryachakra Power Corporation Limited (BSE:532874)                          | BSE:532874     | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |
| <b>Power</b> | Southern Electric Power Company Limited (KASE:SEPCO)                        | KASE:SEPCO     | <b>Pakistan</b>    | <b>Emerging Markets</b> | <b>Small Asia</b>                    |
| <b>Power</b> | National Oxygen Ltd. (BSE:507813)   | BSE:507813     | <b>India</b>       | <b>Emerging Markets</b> | <b>India</b>                         |



## Weighted Average Cost of Capital for Dominica Electricity Services Ltd.

|              |  |              |           |                  |                         |
|--------------|--|--------------|-----------|------------------|-------------------------|
| <b>Power</b> | Bhagawati Oxygen Limited (BSE:509449)                                | BSE:509449   | India     | Emerging Markets | India                   |
| <b>Power</b> | Bawany Air Products Ltd. (KASE:BAPL)                                 | KASE:BAPL    | Pakistan  | Emerging Markets | Small Asia              |
| <b>Power</b> | Sun Source (india) Ltd (BSE:517403)                                  | BSE:517403   | India     | Emerging Markets | India                   |
| <b>Power</b> | OAO Ryazan Energy Retail Company (MICEX:RZSB)                        | MICEX:RZSB   | Russia    | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | Bhagawati Gas Ltd (BSE:500051)                                       | BSE:500051   | India     | Emerging Markets | India                   |
| <b>Power</b> | SG Power Limited (KASE:SGPL)   | KASE:SGPL    | Pakistan  | Emerging Markets | Small Asia              |
| <b>Power</b> | Tristar Power (KASE:TSPL)  | KASE:TSPL    | Pakistan  | Emerging Markets | Small Asia              |
| <b>Power</b> | Kohinoor Power Company Ltd. (KASE:KOHP)                              | KASE:KOHP    | Pakistan  | Emerging Markets | Small Asia              |
| <b>Power</b> | Ideal Energy Ltd (KASE:IDEN)   | KASE:IDEN    | Pakistan  | Emerging Markets | Small Asia              |
| <b>Power</b> | Alang Industrial Gases Limited (BSE:531517)                          | BSE:531517   | India     | Emerging Markets | India                   |
| <b>Power</b> | Elango Industries Ltd. (BSE:513452)                                  | BSE:513452   | India     | Emerging Markets | India                   |
| <b>Power</b> | SRM Energy Ltd (BSE:523222)  | BSE:523222   | India     | Emerging Markets | India                   |
| <b>Power</b> | Kaluga Power Sale Company Open Joint-Stock Company (MICEX:KLSB)      | MICEX:KLSB   | Russia    | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | Mordovia Energy Retail Company Open Joint-Stock Company (MICEX:MRSB) | MICEX:MRSB   | Russia    | Emerging Markets | Eastern Europe & Russia |
| <b>Power</b> | China Natural Gas, Inc. (OTCPK:CHNG.Q)                               | OTCPK:CHNG.Q | China     | Emerging Markets | China                   |
| <b>Power</b> | Sun Techno Overseas Ltd. (BSE:531752)                                | BSE:531752   | India     | Emerging Markets | India                   |
| <b>Power</b> | CitySpring Infrastructure Trust (SGX:A7RU)                           | SGX:A7RU     | Singapore | Emerging Markets | Small Asia              |