DECISION

DOCUMENT REFERENCE: 2015/002/D

INTEGRATED RESOURCE PLAN

AND

RELATED FIVE YEAR INVESTMENT PLAN

Independent Regulatory Commission
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INDEPENDENT REGULATORY COMMISSION

Decision

Electricity Supply Act No 10 of 2006

DOMLEC Transmission, Distribution and Supply Licence 2014

This document sets out the Decision of the Independent Regulatory Commission **2015/002/D – "Integrated Resource Plan for the Commonwealth of Dominica and Associated Least Cost Expansion Plan"** - taken by the Commission at its meeting on April 23, 2015.

The Commission now **ORDERS** that this Decision, made pursuant to Sections 20 and 21 of the Electricity Supply Act No 10 of 2006 and DOMLEC Transmission, Distribution and Supply Licence 2014 Condition 20 will become effective on the date given below.

Effective date: May 1, 2015

By Order

……
LANCELOT MCCASKEY
EXECUTIVE DIRECTOR
On Behalf of the Commission
April 23, 2015

Contents

Introduction and Background

The Commission issued two 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 which completed the process for aligning the regulatory framework for DOMLEC with the principles and intent of Electricity Supply Act 10 of 2006 (the Act, ESA) established a regime of separate licensing for each of the business sectors of public electricity supply undertakings – generation, transmission distribution and supply.

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 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), (c), are instructive where 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;*
>
> *(c) ensure the security and efficiency of the supply of electricity in Dominica, through the conduct of an efficient long term planning process with due regard for future potential generation sources such as geothermal and wind energy."*

At Section 21.(1) (n) The Commission shall: "review the development plans, expansion programmes and fuel costs efficiencies of licencees."

The Transmission, Distribution and Supply Licence (the Licence) sets out at Conditions *Condition 20:*

"*Duty to secure long term system security and reliability*

1. *The Licensee shall periodically prepare and update, in accordance with internationally accepted best industry practice, an Integrated Resource Plan and Least Cost Expansion Plan.*

2. *The Commission, when satisfied, after due consultation, that the plans represent the least economic cost for system expansion consistent with internationally accepted best industry practice, will approve the plans following which the Licensee shall implement the approved plan.*

3. ……..

Against this background the Commission has been mindful that the Licence also provides specific conditions for the first tariff review where at Condition 33:

1. *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 Commission adopted the view that it had to act as a priority on proceedings leading to decisions on the national Integrated Resource Plan and associated Least Cost Expansion Plans (LCEP) as these are necessary inputs to considerations on the company's Capital Investment Programme which is itself a critical input to the tariff making process.

With DOMLEC's full involvement, the Commission engaged in a series of consultations with stakeholders in order to consider and decide on:

a. The proposed Integrated Resource Plan(s); and
b. The proposed 5-year investment(s) related to the same.

DOMLEC submitted its proposals for the Integrated Resource Plan, Least Cost Expansion Plan and related five year investment programme for the Commission's consideration dated June 13, 2014 and February 5, 2015 respectively and the Commission initiated the consultation with the issuance of the first document in this series Document Ref No: 2015/002/NPRM-01.

In this regard, the Commission issued a First Consultative Document on March 6, 2015 and held a public consultation on March 13, 2015. Following this the Commission issued a second consultation document (Document Ref No: 2015/002/NPRM-02) setting out the Commission's response to the feedback and comments received during the first round of consultations. This second round of consultations (which included another public meeting) closed on April 16, 2015.

The Commission thanks all those who participated in the consultation process and, with the benefit of all the inputs received, the Commission now sets out its Decision with regard to the national Integrated Resource Plan and DOMLEC's associated Least Cost Expansion Plan.

Part 1 of this Document sets out the text of the Commission's Decision while Part 2 gives the Statement of Results.

PART 1 – DECISIONS

National Integrated Resource Plan and Associated Least Cost Expansion Plan

DECISION 1: Demand Forecast

The Commission has **Determined** that the Demand Forecast projecting "base" "low" and "high" electricity energy demand scenario be used as the basis for planning the system expansion shall as shown in Table 1 below.

Table 1
Electric Energy Demand Forecast

	Scenarios (MWh)		
Year	High Case	Base Case	Low Case
2014	98,956	**97,248**	95,174
2020	116,823	**106,294**	94,769
2026	139,061	**114,415**	89,461
2033	172,144	**125,914**	83,657
Average Growth Rate (2014-2033)	*2.9%*	***1.3%***	*-0.8%*

The Commission therefore agrees that the Base Case will be used as the driver for demand forecasting in the near and medium term.

DECISION 2: Integrated Resource Plan

The Integrated Resource Plan summarised below is **approved and becomes the National Integrated Resource Plan for the Commonwealth of Dominica.** This plan which forms the base for power system expansion planning provides for the addition of generation capacity, consistent with the Government's Energy Policy which gives priority to renewable energy sources preferentially in the order – geothermal, hydro and solar. In this regard, the Commission has determined that the template for meeting energy demand shall be informed by the technologies and timing as summarised in Table 2:

Table 2
Approved Integrated Resource Plan
Timing of Capacity Additions to meet projected Demand

Year	Capacity Retired (MW)	Capacity Added (MW)	Capacity Added Type	Total Installed Capacity (MW)	Peak Demand (MWgross)	Reserve Margin %	N-2 Contingency (MW)
2014	0.00	0.0		26.7	16.6	45.3	3.2
2015	0.00	0.0		26.7	16.8	43.5	3.0
2016	0.00	0.0		26.7	17.0	41.8	2.8
2017	0.00	1.0	Solar - 2x0.5MW	27.7	17.2	40.1	2.6
2018	0.00	7.5	Geothermal - 2x3.5MW Solar - 1x0.5MW	35.2	17.4	77.8	6.5
2019	1.50	0.0		33.7	17.5	69.9	5.2
2020	0.00	3.5	Geothermal - 1x3.5MW	37.2	17.6	88.3	8.5
2021	0.00	0.0		37.2	17.7	87.2	8.4
2022	1.75	0.0		35.5	17.8	76.4	6.6
2023	1.35	0.0		34.1	18.0	68.9	5.4
2024	0.00	0.0		34.1	18.1	68.0	5.3
2025	0.00	3.5	Geothermal - 1x3.5MW	37.6	18.3	84.8	8.4
2026	0.00	0.0		37.6	18.4	83.7	8.3
2027	0.00	0.0		37.6	18.6	81.7	8.1
2028	4.20	0.0		33.4	18.7	60.6	4.4
2029	1.88	0.0		31.5	18.9	51.9	2.9
2030	2.80	0.0		28.7	19.0	37.5	0.3
2031	0.00	0.0		28.7	19.2	36.0	0.1
2032	1.20	1.8	MSD - 1x1.8MW	29.3	19.3	39.4	0.8
2033	0.00	0.0		29.3	19.6	37.9	0.6

Mechanisms for the Addition of Capacity

The capacity needs shall be met in keeping with the mechanisms below:

DECISION 3: Geothermal

These additions will be implemented in keeping with the processes and development activities led by the Government of Dominica. In doing so, the Commission has decided to keep the development progress under strict review as the actual real or projected in service dates for these capacity additions can have significant impact on the integrity of the reliability of the electricity supply system and consequential cost to consumers. Accordingly, the Commission may have to act, in consultation with key stakeholders, to respond to these realities by adjusting the timings of these additions, to secure compliance with its duties under Section 20 of the Act.

DECISION 4: Solar

The Commission shall, consistent with DOMLEC's non-exclusive Generation Licence and its own Document Ref: 2008/002/D **–** "Regulatory Policy and Procedure - Adding Capacity to the Public Electricity Supply System" add this capacity through a competition. In doing so the Commission will seek proposals for a mix of supply and demand side solutions and will at that time confirm the capacity to be added by each modality.

DECISION 5: Medium Speed Diesel

The addition of these capacities will be by way of a competition in keeping with DOMLEC's non - exclusive Generation Licence and its own Decision Document Ref: 2008/002/D **–** "Regulatory Policy and Procedure - Adding Capacity to the Public Electricity Supply System"

Least Cost Expansion Plan

DECISION 6: Generation Additions

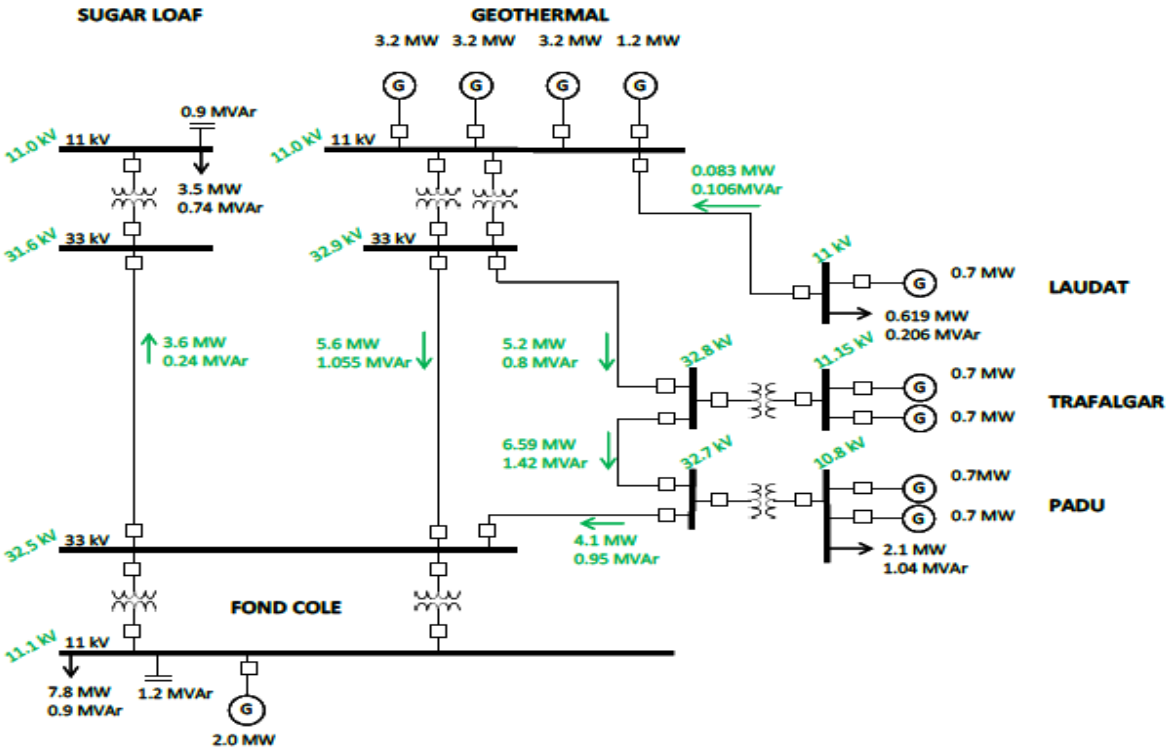
The Commission is mindful that the capacity requirements at Table 2 reflect to a large extent the least cost modeling carried out by DOMLEC. In this regard the Commission has determined that generation capacity will be added consistent with the intent established in Table 2 recognizing the caveats associated with the uncertainties related with the timing for the in service dates for geothermal capacity. As indicated, the Commission will keep these developments under close review.

DECISION 7: Transmission System Development

The Commission has determined that the investments in Transmission and Distribution shall be with the general intent of evacuating the energy from the geothermal generation plant and for securing system security and economical operations and that it will evolve in accordance with Figure 1. In making this determination, the Commission **Orders** that the Decisions as to the actual implementation of the 33 KV system developments shall be subject to specific approval by the Commission on an application by DOMLEC. In this regard, DOMLEC is required to keep the Commission apprised of progress as to the implementation of the geothermal plant and to advise the Commission on the practical and least cost options for the build out of transmission facilities for the evacuation of the energy.

Notwithstanding, the Commission now **Approves** the inclusion and construction of the 33 KV Transmission Line (known as the North-South Transmission Line) linking Fond Cole and Sugar Loaf Power Stations for an in service date in late 2017.

Figure 1
Scenario 4 - (Taken from DOMLEC's Geothermal Interconnection Study – November 2013)
Long term development of the Transmission and Distribution system



Reporting

The Commission reminds DOMLEC of the following provisions in The Transmission and Distribution Licence at "Condition 7: Reporting Obligations," where Clauses 5 & 6 provide:

> *"5. The Licencee shall annually prepare and submit to the Commission a five year forecast of projected loads and generation requirements."*

> *"6. The Licencee shall, annually, provide the Commission with its capital investment plan and updated five year capital investment forecasts."*

PART 2 – STATEMENT OF RESULTS

Introduction

The Commission issued two 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 which completed the process for aligning the regulatory framework for DOMLEC with the principles and intent of Electricity Supply Act 10 of 2006 (the Act, ESA) established a regime of separate licensing for each of the business sectors of public electricity supply undertakings – generation, transmission distribution and supply.

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.

Against this background the Commission has been mindful that the Licence also provides specific conditions for the first tariff review where at Condition 33:

2. *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 Commission adopted the view that it had to act as a priority on proceedings leading to decisions on the national Integrated Resource Plan and associated Least Cost Expansion Plans (LCEP) as these are necessary inputs to considerations on the company's Capital Investment Programme which is itself a critical input to the tariff making process.

With DOMLEC's full involvement, the Commission engaged in a series of consultations with stakeholders in order to consider and decide on:

a. The proposed Integrated Resource Plan(s); and
b. The proposed 5-year investment(s) related to the same.

DOMLEC submitted its proposals for the Integrated Resource Plan, Least Cost Expansion Plan and related five year investment programme for the Commission's consideration dated June 13, 2014 and February 5, 2015 respectively and the Commission initiated the consultation with the issuance of the first document in this series Document Ref No: 2015/002/NPRM-01.

In this regard, the Commission issued a First Consultative Document on March 6, 2015 and held a public consultation on March 13, 2015. Following this, the Commission issued a second consultation document (Document Ref No: 2015/002/NPRM-02) setting out the Commission's response to the feedback and comments received during the first round of consultations. This

second round of consultations (which included another public meeting) closed on April 16, 2015.

Policy and Legal Framework

Government Draft Policy[1]

The Government has an Energy Policy under consideration. The Commission is of the view that the principles in that draft should guide its thinking with regard to the development of and approval of the IRP. The salient features of the policy (at Section 4) are highlighted below:

On **Electricity Supply**, the Government's policy objectives are : –

It is the Government's policy to foster a safe, efficient, affordable, and low-carbon national electricity supply that meets international quality standards by promoting the efficient use of imported fossils fuels, and the development of Dominica's domestic renewable energy resources. To achieve these policy goals it will be necessary for Government to:

- *Ensure that the energy resources available to the island are fully assessed in terms of their potential to economically contribute to the island's electricity supplies*
- *Evaluate the effect of their exploitation for electricity production on the local environment and on the island's carbon footprint*
- *Maintain an inventory of the available resources with potential to contribute to the country's electricity demand and update this inventory at regular intervals in line with changing economic conditions*
- *Ensure the implementation of demand-side-management (DSM) programmes to reduce the long-term demand for increased generating capacity*
- *Ensure that electricity supplies are generated and used as efficiently as possible and that losses are reduced to an economic minimum.*

Section 4.2 of the Policy which addresses "**Efficiency in Generation**" proffers:

Government through the Commission will establish an overall heat rate target for diesel engine generation efficiency. This target will set overall efficiency targets for the portion of electricity that is generated by diesel fuel. It will also ensure that generating plants are dispatched in the most economical way to meet the system loads. This means using the available mix of hydropower, conventional generation, and new renewable energy sources to provide reliable power at least cost. Government will ensure that generation planning is such that it will use the principles of integrated resource planning to deliver the required generating capacity at least cost. The planning will take account of all the available energy resources – including geothermal, hydro, diesel, and other utility-scale renewable resources such as wind – as well as the most cost effective way to exploit those resources. If system generation expansion is not properly planned, fuel costs will not be optimized, and feasible fuel saving options (such as use of

[1] Draft Sustainable Energy Plan of the Commonwealth of Dominica, 15 April 2014

renewables, cogeneration, and efficiency improvement measures) may be overlooked. Effective capacity planning requires a good load forecast combined with appropriate use of computer-based capacity planning model programme such as the Wien Automated System Planning (WASP) computer model or the Super OLADE Power System Generation and Inter-Connection Planning Model which are used for multi-year electricity system planning studies, making it possible to simulate, and optimize hydro and thermal power system expansion plans. These models are used by several developing country utilities, including some in the Caribbean region, to determine the least costly expansion path that will adequately meet the demand for electric power, subject to user-defined constraints. Minimizing the total system costs of electricity also requires timely and efficient implementation of the selected capacity expansion path. Undue delays in planned implementation may result in the need to implement emergency additions which are more costly over the long-term and the excessive use of peaking units which are less efficient.

The Policy further mandates the following of the Commission:

1. *The Commission will establish (and review on a regular basis) an overall heat rate target for diesel engines generation efficiency and ensure that generating plants are dispatched in the most economical way to meet the system loads. This means using the available mix of hydropower, conventional generation, and new renewable energy sources to provide reliable power at least cost. The system will be designed to ensure that any fuel usage which results from poor efficiency cannot be passed on to consumers in the fuel surcharge. However, it will remain a cost to DOMLEC. The heat rate target should be reasonable given system operating conditions, and may need to be updated as those conditions change.*

2. *Require DOMLEC to demonstrate that its expansion planning is least cost and based on best practices in expansion planning, as required by the DOMLEC's Transmission, Distribution and Supply Licence 2014.*

Legal Framework

The Commission's duties and functions with regard to tariff making are provided for pursuant to provisions in three principal instruments – the Act, the Licence and Commission's Determination "Tariff Regime For Dominica Electricity Services Ltd Document Ref: 2009/004/D9."

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 licencee 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;

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.

Furthermore, Section 20. (1) (c) of the Act provides a duty for the Commission to "ensure the security and efficiency of the supply of electricity in Dominica, through the conduct of an efficient long term planning process with due regard for future potential generation sources such as geothermal and wind energy."

At Section 20. (1) (e) "*protect the interests of all classes of consumers of electricity as to the terms and conditions and price of supply.*"

At Section 21. (1) (f) The Commission shall: "*regulate prices charged to consumers of electricity where this is not supplied on a competitive basis, and the methods by which they are to charged.*"

At Section 21.(1) (n) The Commission shall: "*review the development plans, expansion programmes and fuel costs efficiencies of licencees.*"

DOMLEC's Licence and Authorization

The Transmission Distribution and Supply Licence issued to DOMLEC and which became effective on January 1, 2014 sets out the parameters under which DOMLEC operates and its responsibilities regarding the system development. "Condition 2: Scope of the Licence" provides:

1. *This Licence authorizes and gives the Licensee the exclusive right and privilege to transmit, distribute and supply electricity for sale to the public in the Service Territory and to operate, construct, reconstruct, modify or replace the transmission, distribution and supply facilities for these purposes subject to the ESA and the following:*

    (a) Developers of generating facilities that will interconnect with the System by virtue of a Power Purchase Agreement with the Licensee will, as a general rule, be required to provide interconnection to the System at the high voltage (HV) side of the generator step up transformer. Under specific circumstances, subject to the approval of and grant of a transmission licence by the Commission, the developer may build, own and operate the transmission interconnector to the System.

    (b) Developers of energy resources that are primarily intended for cross border sale of electricity may, with the approval of and grant of a Transmission licence by the Commission build, own and operate the associated transmission system infrastructure to enable such cross border arrangements. If circumstances require and it is prudent to do so, the developer may be eligible for a transmission licence to build and operate the transmission lines to interconnect with the System.

2 *The Licensee has the exclusive right to supply for sale electricity to third parties for public and private purposes in the Service Territory for which the Licensee is entitled to bill consumers and customers for the electricity supplied at the rates and charges approved by the Commission.*

3. *Notwithstanding the provisions of Clause 2 of this Condition 2, the Commission may allow and issue licences for third party supply to any Development Areas, where there is to be no interconnection with the DOMLEC System and where it is demonstrated that for technical, commercial or other reasons the Licensee is unable or unwilling to extend the electricity supply system to those areas.*

4. *This Licence authorizes and gives the Licensee the right to purchase electricity in bulk from Independent Power Producers for transmission, distribution, supply and sale in the Service Territory.*

5. *For the purposes of satisfying the various references in the ESA, the Licensee is designated as the 'transmission system operator", the "distribution system operator" and the "system operator".*

DOMLEC's duties and responsibilities as "System Operator" are provided at Conditions 19 and 20 of the Licence.

Condition 19: Duties as System Operator

1. *The Licensee shall be responsible for dispatching sufficient generating capacity to meet System requirements in a prudent manner taking into consideration various operating considerations, including but not limited to least-cost, planned and forced generator maintenance schedules and operating reserves (both on-peak and off-peak) and subject to the terms and conditions of any PPAs.*

2. *The Licensee shall as far as is practicable and safe dispatch available generation in such a manner that the energy produced and dispatched is at the least cost to consumers.*

3. *The Licensee may purchase some or all of its energy and/or capacity requirements from Independent Power Producers pursuant to relevant PPAs.*

4. *The Licensee may purchase the electricity output from renewable or alternate energy sources on an energy only or capacity and energy basis as appropriate in accordance with the procedures agreed with or established by the Commission and subject to relevant PPAs.*

5. *The Licensee is responsible for the procurement of adequate generation supply, in terms of required energy, capacity and ancillary services to fully meet the needs of its consumers, subject to the procedure for addition of capacity established by the Commission in accordance with its policy document, "Regulatory Policy and Procedure - Adding Capacity to the Public Electricity Supply System 2008/002/D", as amended from time to time.*(Emphasis added)

6. *The Licensee must ensure that adequate reserve generating capacity, both spinning and cold standby, is available at all times to meet the guidelines promulgated by the Commission. The Licensee may provide such reserve capacity itself or may contract some or all of it to any base-load Independent Power Producer with whom a PPA has been signed.*(Emphasis added)

7. ……

Condition 20: Duty to secure long term system security and reliability

4. *The Licensee shall periodically prepare and update, in accordance with internationally accepted best industry practice, an Integrated Resource Plan and Least Cost Expansion Plan*. (Emphasis added)

5. *The Commission, when satisfied, after due consultation, that the plans represent the least economic cost for system expansion consistent with internationally accepted best industry practice, will approve the plans following which the Licensee shall implement the approved plan.* (Emphasis added)

6. ……..

The Planning Process

There are basically two elements to the planning process - first the preparation of an Integrated Resource Plan (IRP) followed by a Least Cost Expansion Plan (LCEP). The first step in this process, however, is to agree on system planning parameters. These are critical as the decisions taken will influence system reliability and investment dollars which ultimately translates into the tariff. In its Decision Document Ref: 2008/002/D: "Regulatory Policy and Procedure - Adding Capacity to the Public Electricity Supply System" the Commission describes its expectations and processes for the development of the IRP and consequential LCEP.

The Decision Document Integrated Resource Plan for Electricity – Demand Forecast, Ref: 2009/003/D-01 outlines the process[2].

Table 3
The Planning Process

Step	Activity
1	IRC and DOMLEC agree on the system planning parameters; these are codified
2	IRC and DOMLEC agree on the assumptions to input into the IRP - Demand Forecast
3	DOMLEC submits its Demand Forecast to the IRC. The IRC reviews, consults and provides feedback to DOMLEC
4	DOMLEC prepares a draft IRP and submits to the IRC
5	IRC reviews plans but simultaneously makes public for a consultation
6	IRC reviews the results of the consultation incorporate these into feedback to the DOMLEC
7	DOMLEC adjusts the plan to reflect the feedback from the IRC and resubmits.
8	IRC approves and make public

[2] Table 5-D from the Decision Document Integrated Resource Plan for Electricity – Demand Forecast, Ref: 2009/003/D

The Commission believes that it has, in this proceeding, acted in a manner consistent with the Act, Government Policy and its own policies as embedded in its Document Ref: 2008/002/D: "Regulatory Policy and Procedure - Adding Capacity to the Public Electricity Supply System".

RESPONSES TO CONSULTATIONS

The Commission addressed questions and comments made in respect of the first consultative document in the second Document Ref: 2015/002/NPRM-02. In the succeeding sections the Commission responds to (i) pertinent Questions raised at the Public meeting on April 16; and (ii) to specific responses to the consultation questions raised in the second Consultative Document.

The Commission thanks the many participants at the public meeting and those who provided written responses. The inputs have greatly assisted the Commission in its decision making and it encourages stakeholders to continue to exercise the high degree of interest that has been demonstrated in the Commission's proceedings.

SECTION I – Responses to Pertinent Issues Posed at the Public Meeting

Issue No. 1

The impact of the geothermal plant was an item of concern as well as the uncertainty surrounding the timing of its establishment and whether DOMLEC would be able to reinforce the network in time for the coming online of this station

DOMLEC's response:

DOMLEC notes on page 26 of the '*Comments on Response Received to First Consultative Document, Notice of Proposed Rule Making Document Reference: 2015/002/NPRM-02, DOMLEC's Integrated Resource Plan and related Five Year Investment Plan)*', (hereinafter referred to as the second consultative document), the IRC's response to consultation Question no. 6 as follows "*Construction of the plant will take at least two years to complete and commissioned into commercial operations. This fact cannot be disputed*". DOMLEC wishes to differ with the IRC on this point. Research shows that there exists modular well-head geothermal plants being placed online within twelve months of order and these units can be connected to well outputs up to 15MW, which encompasses the reported capacity of the well at Laudat.

Even if it may be said that the twelve-month time frame is too optimistic, additional research shows that geothermal can be brought online in eighteen months. The construction and successful operation of this domestic plant is a pre-cursor to the development of the larger export plant. Therefore, the developers may be incentivized to undertake its construction within the shortest time frame.

The completion of the Transmission line must be ahead of the completion of the geothermal plant by at least three months to accommodate testing and commissioning with the existing generation systems. DOMLEC will be liable for additional costs to the developers if the transmission line is not ready for the commercial operation of the plant.

DOMLEC has chosen, therefore, to be prudent in its planning and use the shortest timeframe, since it would be foolhardy to look at a mid to long-range time frame.

Issue No.2

The development of the IRP by DOMLEC was brought into question and whether it is a DOMLEC document without input by the IRC.

DOMLEC's response:

DOMLEC in its response referred back to the response given to Issue No. 1.

Issue No. 3

NOTE: *The issue is referred to in the DOMLEC's response as 'Issue 6' is an error and it is actually 'Issue 3'.*

DOMLEC's insertion of 3.5 Megawatts of solar capacity as a candidate option in its generation planning mix within the IRP drew attention from one stakeholder who argued that he was informed that a cap exists as to the quantity of intermittent renewable energy that can be put onto DOMLEC's grid. He posited that there is a conflict of interest, by DOMLEC advocating no more and yet planning to add more intermittent renewable to their grid.

The Commission's response: The fact of the matter remains that the IRP submitted by DOMLEC to the Commission, lists a number of candidate options for the proposed generation mix within the next 5 years. This is shown in the following Tables1 and 2:

DOMLEC's response:

DOMLEC notes and concurs with the IRC's comments on this issue.

See page 15 of the Document reference: 2015/002/NPRM-02. Reference 'Table 1" and 'Table 2' of the same document.

Technology Options Considered	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Geothermal (7MW by 2018)	√	X	X	√
Geothermal (7MW by 2021)	X	√	X	X
Additional Geothermal capacity from	2020	2023	N/A	2020
Reciprocating Engines	√	√	√	√
Solar PV	√	√	√	√
Injection of 2MW demand in 2018	X	X	X	√

Table 1 – Proposed Scenario for the Deployment of Candidate Options

Year	Capacity Retired (MW)	Capacity Added (MW)	Capacity Added Type	Total Installed Capacity (MW)	Peak Demand (MWgross)	Reserve Margin %	N-2 Contingency (MW)
2014	0.00	0.0		26.7	16.6	45.3	3.2
2015	0.00	0.0		26.7	16.8	43.5	3.0
2016	0.00	0.0		26.7	17.0	41.8	2.8
2017	0.00	1.0	Solar - 2x0.5MW	27.7	17.2	40.1	2.6
2018	0.00	7.5	Geothermal - 2x3.5MW Solar - 1x0.5MW	35.2	17.4	77.8	6.5

Table 2 – Recommended Build Schedule for 2014 to 2018

It must be stated that these options are only candidate options for the purpose of analysis. In the final analysis, it is the prerogative of the Commission to properly examine these options with due consideration to the projected demand, government policy and related capital expenditure, to decide whether to approve or disapprove of any specific candidate option that is listed. It is also a factor that the proposal put forward by DOMLEC is for utility grade PV solutions as opposed to Demand side interventions. The Commission would also advise stakeholders that the addition of capacity would, consistent with policy and DOMLEC's non-exclusive Generation Licence, be subject to competition.

Candidate options are defined as options that are used for modeling the generation mix to meet the forecasted demand.

SECTION II– Responses to Consultation Questions

The Commission received written responses from DOMLEC in a single document to both sets of consultation questions. Although, in some cases the second round of questions supersede those in the first round and are perhaps now irrelevant, for full disclosure and transparency both sets are reproduced below.

Integrated Resource Plan

Consultation Question No. 1

Do stakeholders agree that DOMLEC followed the IRC's stipulation on how the demand forecast should be prepared?

DOMLEC's response:

In the preparation of the Integrated Resource Plan, qualitative assessment methods to derive the demand forecast were utilized. Additionally, DOMLEC consulted with key organizations which could provide information to assess the impact of any major proposed economic activity. Reference is made to section *2.3.1 on pages 7 and 8 of the IRP. DOMLEC is not aware of any other developments which will impact on the assumptions made in the forecast.*

Comments on Commission's response to the first consultation Question No. 1 of the first consultative document dated March 2015

The key drivers in DOMLEC's load forecast were Gross Domestic Product (GDP), average temperatures, and fuel prices. Information on these drivers were obtained from DOMLEC's billing database and secondary market data sources such as the Eastern Caribbean Central Bank, International Monetary, meteorological department and the US Energy Information Administration (EIA). Information was sourced from some of DOMLEC's major customers on their short-term electricity requirements but this information can be considered anecdotal given the 20 year planning horizon of the IRP process. The forecast model therefore relied heavily on customers' historical consumption behaviors and the influence of key economic drivers on consumption behavior.

The market research methodology described in the Integrated Resource Plan for Electricity – Demand Forecast decision document 2009/003/D-01 is used by DOMLEC in its annual budget preparation and takes the form of general discussion with stakeholders. Moreover, the stakeholders for the most part are unable to provide quantitative data for that period of time.

***(New)* Consultation Question No. 1**

Do stakeholders agree that DOMLEC followed the IRC's stipulation on how the demand forecast should be prepared?

DOMLEC's response:

Yes, DOMLEC followed the IRC's stipulation on how the forecast should be prepared. We refer to our response to Consultation Question No. 1.

Consultation Question No. 2:

Do stakeholders agree (subject to any comments in response to Consultation Question No 1) that the derived base, high and low projections for energy growth are reasonable? See Table 3 below.

	Scenarios (MWh)		
Year	High Case	Base Case	Low Case
2014	90,742	89,177	87,275
2020	106,192	96,621	86,145
2026	126,406	104,004	81,320
2033	156,479	114,456	76,044
Average Growth Rate (2014-2033)	*2.8%*	*1.2%*	*-0.8%*

Table 3 - DOMLEC Sales Projections in 6 year period from 2014 to 2033.

DOMLEC states in its written response:

DOMLEC agrees because both the methodology and data which resulted in the derived projections are credible.

The Commission's response:

The Commission's position is derived from the responses to the first consultative question in the previous document. Thus, the Commission expected due consideration to be given by the participants to Table 3 depicting the various forecast scenarios submitted by DOMLEC. Accepting the methodology that DOMLEC used in its derivation of the forecasts would mean that a determination can be made in favor of the results derived by DOMLEC.

The Commission has further re-visited the forecasts for gross generation and sales over a five year period from 2015 to 2019 utilizing various mathematical forecasting techniques and though the figures show slight variances with DOMLEC, they are more in agreement with the base load scenario. See Tables 4 and 5 below.

Table 4: The Commission's Forecasted Sales in Energy (kWh).

Sales Forecasting (kWh x 1000)					
Year	**2015**	**2016**	**2017**	**2018**	**2019**
Forecasts(+) High Case	95,594	104,944	120,862	145,084	179,343
Forecast(0) Base Case	92,815	99,947	109,270	127,035	148,920
Forecasts(-) Low Case	88,310	85,172	80,799	75,190	68,345

Table 5: IRC Forecasted Gross Generation in MWh

Annual Generation - MWh					
Year:	**2015**	**2016**	**2017**	**2018**	**2019**
Forecast (+) High Case	105,812	108,721	111,711	114,783	117,940
Forecast (-) Low Case	102,902	104,704	107,584	110,542	113,582

Table 6: DOMLEC Growth scenarios

	Scenarios (MWh)		
Year	High Case	Base Case	Low Case
2014	98,956	**97,248**	95,174
2020	116,823	**106,294**	94,769
2026	139,061	**114,415**	89,461
2033	172,144	**125,914**	83,657
Average Growth Rate (2014-2033)	*2.9%*	***1.3%***	*-0.8%*

Based on these findings the Commission is now of the view that there is enough evidence to support the "***Base Case***".

(*New*) Consultation Question No. 2:

Do Stakeholders agree with the IRC's and DOMLEC's position in accepting the "*Base Case*" in growth demand?

Comments on Commission's response to Question No. 2 and the *(New)* Consultation Question No. 2

This question does not need a response from DOMLEC. DOMLEC notes that the Commission agrees in this round of consultation ***with the base case scenario for average growth*** *rate.*

Consultation Question No. 3

Do respondents agree that the prudent choice at this time would be the low demand growth scenario?

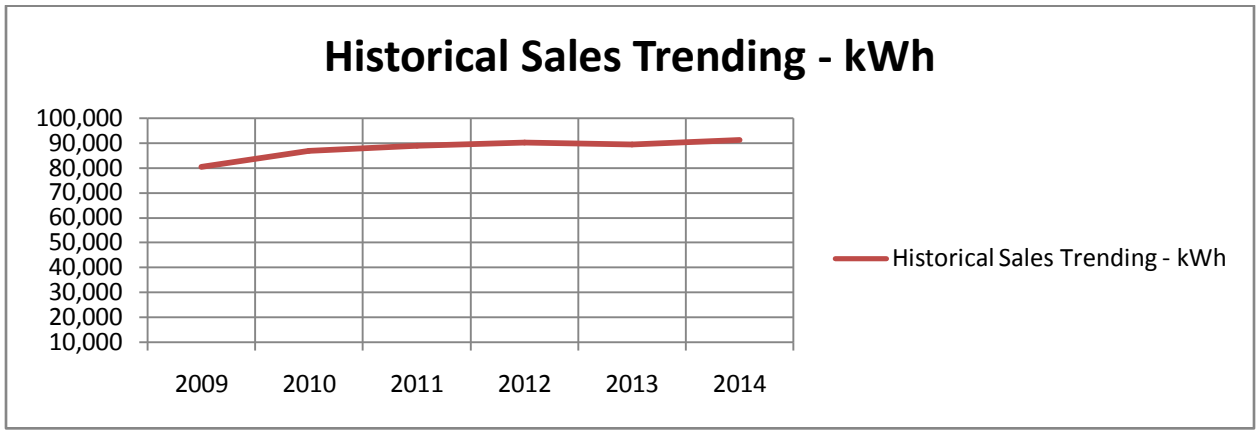
DOMLEC states in its written response to Question 3 from the first consultation:

"DOMLEC wishes to point out that 2014 actual demand data shows a growth rate of 2%. Table 7 and the accompanying graph illustrate the year to date growth up to February 2015 of 5.96%. The data below supports the base case scenario for average growth rate as indicated in the IRP."

	FEBRUARY				YEAR TO DATE - FEBRUARY			
			VARIANCE				VARIANCE	
	Actual	Prior Yr	FAV/(UNFAV	%	ACTUAL	Prior Yr	FAV/(UNFAV	%
KWHs								
Domestic	3,161,218	2,970,547	190,671	6.42%	6,639,502	6,300,548	338,954	5.38%
Commercial	2,868,169	2,697,498	170,670	6.33%	5,883,178	5,527,924	355,255	6.43%
Industrial	672,973	642,128	30,845	4.80%	1,337,270	1,252,235	85,035	6.79%
Hotel	97,155	88,117	9,038	10.26%	201,288	195,670	5,618	2.87%
Street Lights	164,212	151,536	12,676	8.37%	328,107	302,973	25,134	8.30%
Total Sales	6,963,726	6,549,826	413,900	6.32%	14,389,345	13,579,350	809,995	5.96%

Table 7: DOMLEC's Table 1. Year-to-Date 2015 Sales.

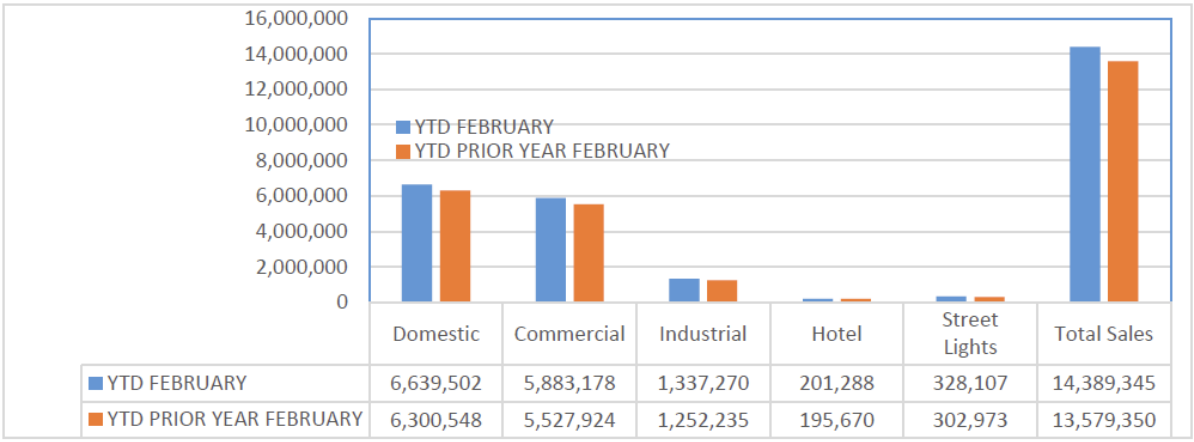
The Commission originally supported the *"low case"* scenario based on a flat lining of the growth in sales from historical data as depicted below in Figure 3 for the period 2009 to 2014.



Historical Sales Trending						
Year	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Sales - kWh x 1000	80,308	86,775	88,842	90,113	89,339	91,158
Percentage (Increase/Decrease) over previous year		0.081	0.024	0.014	-0.009	0.020

Table 8 – DOMLEC's Historical Sales

DOMLEC's response to Q.3 from the second round of consultations:



Comments on Commission's response to Consultation Question No. 3 of the first consultative document

DOMLEC notes that the COMMISSION agrees in this round of consultation with the "***Base Case***" scenario for average growth rate.

Consultation Question No. 4

Do respondents agree that there may be no choice as to when geothermal becomes available? This being the case, it would be prudent to examine the options in the low demand scenario of geothermal being available in 2017 or 2018.

DOMLEC's response:

For transmission and distribution expansion based on load, the design would only consider the load to be served. For transmission and distribution expansion to accommodate additional generating capacity, the design must be based on the capacity requirements and the lowest cycle costs.

DOMLEC wishes to emphasize that the IRP is a resource plan and must focus on generating capacity. The costs associated with this effort will occur regardless of the level of growth. Therefore, the transmission and distribution expansion must encompass future generating capacity with a lesser focus on load growth.

Planning for future generating capacity necessitates planning for line design and construction. In the geothermal scenario where the T & D line must be in readiness to accommodate increased capacity, provision must be made in the period 2015 to 2017 to undertake the necessary capital works to facilitate timely interconnection with the geothermal plant. It must be noted that in determining the degree of transmission and distribution expansion required, due care and attention must be given to ensuring that the current levels of reliability and power quality are not compromised. In seeking to achieve these objectives, the least cost scenario for expansion was selected.

***(New)* Consultation Question No. 3**

Do Stakeholders agree with the Commission's position as to the uncertainty surrounding the timing of the implementation of the Geothermal Plant?

DOMLEC's response:

DOMLEC's response to the Commission's Response on consultation Question No. 4 and to the (New) Consultation Question No. 3.

DOMLEC wishes to point out an apparent error in referencing on page 21 of the second consultative document on the IRP and IP, noting that the reference refers to the WACC consultative document and not the IRP and IP consultative document.

DOMLEC agrees that there is a degree of uncertainty regarding the exact timing of the implementation of the geothermal plant. However, there is sufficient information which

informed its decision to plan for the acceptance of geothermal energy unto the grid. The information is as follows:

- Production well with known power plant capabilities has been established.
- Technical discussions regarding the geothermal plant design, configuration and sizing determination are in the final stages.
- Negotiations on the Power Purchase Agreement have commenced.
- Work on the re-injection well has commenced.

It is to be noted that a geothermal plant can be placed online in 12 months after being ordered from the manufacturer.

Consultation Question No.5

Do respondents agree with the Commission's strategy to examine the options for reinforcing the electricity supply system in the North?

DOMLEC's response:

DOMLEC is in agreement to examine the options for the reinforcement of the electricity supply in the North. This is supported by the fact that all of the generation expansion scenarios in the IRP include the maintenance of the Sugar Loaf units in cold standby mode in the short term. Reference is made to section 5.3 on pages 28 and 29 in the IRP.

DOMLEC has also provided its analysis of the additional options requested by the Commission in the document entitled 'Additional Analysis on the Integrated Resource Plan and Five Year Investment Plan'. However, we are not in support of any option which shows Sugar Loaf in cold standby mode without any additional generating capacity elsewhere. To do so would violate our mandate to maintain the N-2 Reserve Margin.

Comments on Commission's response to Question No. 5 of the first consultative document.

DOMLEC gives no further response.

The Commission's Summary Response to Issues relating to the IRP

1. The Commission after revisiting its position agrees with DOMLEC in choosing the "*Base Case*" for the demand forecast. Thus, all associated arguments that were put forward for the "Low Case" scenario have been discarded.

2. With reference to Consultation question No. 4. The Commission recognizes the need for upgrading the network to accommodate future generation capacity more so than future load growth. The Commission also agrees that the upgrade must be in readiness to receive any additional capacity that comes on-stream in the near future. The Commission is also mindful of the importance of upgrading the North South Fond Cole – Sugar Loaf tie. Though the arguments presented are reasonable, there is too much uncertainty on this matter as to the modality of the financial arrangements for the upgrade of the network for the evacuation of the energy from the geothermal plant. The Commission has indicated that it has reasonable assurances from an appropriate authority that financing at attractive terms should be available for the infrastructure build out associated with the geothermal plant. In any event, licensing arrangements would make it problematic for third party investment in transmission infrastructure that is not directly related to the geothermal plant. The Commission is, therefore, minded to allow provision for the North /South - Fond Cole - Sugar Loaf 33kv line in the 2015 – 2018 capital investment programme. It will however continue to monitor developments associated with the geothermal plant in order, once seized with better information, to take timely and prudent decisions in relation to those developments.

3. While DOMLEC posits acceptable reasons for the certainty of the period for the construction of the Geothermal plant, the same reasons put forward are not backed by sound supporting and factual information.

4. DOMLEC's response to Question 5 is reasonable and is accepted by the Commission.

5-YEAR Capital Investment Plan (CIP)

Consultation Question No. 6:

Do respondents agree with the Commission's approach to the determination of DOMLEC's capital investment programme for the period 2015 – 2017?

DOMLEC states in its written response to Question 6 from the first consultation:

"*Correction to Table 17*

DOMLEC wishes to point out that Table 17 "DOMLEC's Historic Capital Investment" in the NPRM document reference 2015/002/NPRM-02 does not accurately reflect the company's capital investment for the period 2009 to 2013."

Consequently, Table 15, titled "DOMLEC's Reported and amending Historic Capital Investment" is reproduced below as Table 9.

Based on the preceding, DOMLEC sought clarification pertaining to the source of the data included in Table 17 in the previous issue of this NPRM. Table 17 is now superseded by Table 9 below which is the correct version.

DOMLEC'S Historical Capital Expenditure					
	2009	**2010**	**2011**	**2012**	**2013**
	EC$	EC$	EC$	EC$	EC$
Land and Buildings	**494,519**	**172,740**	**1,738,030**	**256,607**	**802,196**
Generation, T&D	**28,909,370**	**16,426,478**	**12,438,156**	**12,912,877**	**8,778,861**
Motor Vehicles	**346,527**	**297,233**	**1,062,062**	**374,195**	**228,000**
Furniture & Fittings	**610,615**	**847,902**	**889,349**	**622,150**	**499,103**
TOTALS	**30,361,031**	**17,744,353**	**16,127,597**	**14,165,829**	**10,308,160**

Table 9: DOMLEC's Reported and Amended Historic Capital Investment

The Commission notes that the capital expenditure in 2009 was higher than normal because of the generation capacity that was added in that year.

DOMLEC agrees in part with the Commission's approach to the determination of DOMLEC's capital investment programme for the period 2015 to 2017. This agreement covers the expenditures in the Generation, Commercial, Finance, Information Technology, and Administration Departments and Engineering section.

However, DOMLEC is not in support of the removal of the expenditure pertaining to geothermal from the Transmission & Distribution Department asserting that it has credible

information which indicates that substantial costs will have to be incurred in support of the geothermal project from 2015 and notes the following:

- Production well with known power plant capabilities has been established.
- Technical discussions regarding the geothermal plant design, configuration and sizing determination are in the final stages.
- Negotiations on the Power Purchase Agreement have commenced.

Given the preceding, DOMLEC has made the necessary budgetary provision in its Transmission and Distribution financial plan. It is to be noted also that the construction period for the 33kV network expansion is estimated at two years. Therefore, the associated costs must be factored into the tariff period if the network expansion is to be ready for the 2017 projected commencement data for the geothermal power plant operations.

The Commission's prior response

Furthermore,

"*The Commission continues to have concerns that on a system as small as that of DOMLEC the capitalisation of major, but necessary projects can translate to significant impact on the tariff and while the Commission seeks to minimise these impacts it is faced with the conundrum where system integrity can be compromised if it resiles from timely approval of necessary projects. In this regard, the Commission has been notified by the appropriate authorities that the Government will undertake to provide grant funding for the construction of a 33kV interconnector to facilitate the geothermal plant. Although at the time of writing the details are to be confirmed, the Commission will include the construction of this line in the expansion plan, but notes that as it will be funded, otherwise it will not form part of the investment capital requirements of DOMLEC. The Commission also anticipates that the arrangements for construction of this line will be concluded so as to enable implementation to meet the system requirements for the addition of geothermal capacity.*"

First, in addressing the inconsistency of the historic expenditures quoted in the NPRM Document Ref: 2015/002/NPRM-02, Table 17. These figures were derived from DOMLEC's Annual Reports for the period. The Commission thanks DOMLEC for pointing out this discrepancy.

Furthermore, the argument can be put forward that the geothermal plant cannot be established overnight. It is not unreasonable to assume that construction and commissioning of the plant into commercial operations will take at least two years from the date of agreement between the developers and the Government of Dominica. The Commission therefore believes that there is sufficient time to complete the decision and implementation cycle for the transmission infrastructure.

All factors being considered, the uncertainty surrounding the timing of the establishment of the geothermal plant significantly influences the timing of all the associated works. The Commission therefore will maintain its view, though fully appreciating DOMLEC's concerns, that the amounts that are allocated for the reinforcement of the T&D network that are directly related to the geothermal developments should be delayed until a higher degree of certainty is obtained from the government on the timing of the establishment of the geothermal plant.

In consideration of further developments from the last consultation, the Commission has revisited its position on the proposed capital expenditure that it should allow DOMLEC for the period (see Table 10 below). Included is the associated expenditure for the transmission and distribution infrastructure upgrade to support the geothermal plant.

Table 10
DOMLEC – Proposed Investment Programme (Amounts included for 33kV additions to the Network)

	2015 (EC$)	2016	2017	2018 – 2019 (EC$)	Total (EC$)
Generation	2,917,923	1,605,000	1,505,000	10,796,276	16,824,199
Commercial	**1,890,277**	1,997,158	1,868,216	3,051,829	8,807,480
Transmission and Distribution	2,511,993	16,827,898	33,399,484	5,601,915	13,368,731
Engineering	797,572	193,297	299,490	1,020,000	2,310,359
Administration	496,350	646,800	580,900	1,005,900	2,729,950
Finance	450,000	450,000	450,000	900,000	2,250,000
Information Technology	479,805	601,520	649,075	905,000	2,635,400
Total	9,543,920	22,321,673	38,752,165	23,280,920	48,926,119
Average per annum (2015-2017)		**23,539,253**			

The Commission again re-iterates its main argument from the NPRM Ref: 2015/002/NPRM-02:

"The Commission continues to have concerns that on a system as small as that of DOMLEC the capitalisation of major but necessary projects can translate to significant impact on the tariff and while the Commission seeks to minimise these impacts it is faced with the conundrum where system integrity can be compromised if it resiles from timely approval of necessary projects. ……"

As a further development however, arising from this consultation, the Commission **Approves** the construction of the 33 kV North/South, Fond Cole – Sugar Loaf leg of the Transmission Line for commercial operation in late 2017. The proposed allowed amounts are EC$14,238,186 in 2016 and EC$30,734,373 in 2017.

DOMLEC's Comments on Commission's response to Question No. 6 of the first consultative document

1. DOMLEC would like to note that, under its Transmission, Distribution and Supply (TD&S) Licence, it has exclusivity as far as it relates to the transmission distribution and supply on the domestic market. Condition 2 of the TD&S License indicates that this exclusivity is subject only to two exceptions: transmission for export, and transmission distribution and supply in areas where DOMLEC has deemed it uneconomical to service. Any arrangement for construction of domestic transmission and distribution lines and infrastructure must be done in collaboration and with the consent of DOMLEC. To stipulate otherwise would be a contravention of the terms of the TD&S Licence and therefore cannot be used as a basis for denial of DOMLEC's investment plan.

2. DOMLEC is not in agreement with the Commission's approach with the determination of DOMLEC's capital investment programme for the period 2015-2017. In DOMLEC's response to the first consultative document on the Integrated Resource Plan and related Five-year Investment Plan, DOMLEC has provided a comprehensive response pertaining to this. DOMLEC re-iterates its position.

3. In its response to DOMLEC's correction of Table 17 of first consultative document the Commission states *"First, in addressing the inconsistency of the historic expenditures quoted in the NPRM Document Ref: 2015/002/NPRM-02, Table 17. These figures were derived from DOMLEC's Annual Reports for the period. The Commission was of the view that the figures were correct, however they turned out to be wrong. The Commission thanks DOMLEC for pointing out this discrepancy"*.

DOMLEC wishes to state that these figures were not derived from DOMLEC's annual reports for the periods, and the inference, that the said figures as contained in our reports were incorrect, has no basis. DOMLEC has in response to the first consultative document given the correct figures extracted from the annual reports

(New) Consultation Question No. 4

Do Stakeholders agree with the deferring of investment in reinforcing the network until there is more certainty from the Government on the timing of the establishment of the geothermal plant and therefore the Commission's determination of DOMLEC's capital investment for the period 2015 to 2017?

DOMLEC's response**:**

Response to (New) Consultation Question No. 4

DOMLEC does not agree that the Commission should defer its determination of DOMLEC's capital investment for the period 2015 to 2017. Support for this position has been clearly stated in DOMLEC's response to consultation Question no. 6 of the first consultative document which is reproduced below,

"DOMLEC agrees in part with the Commission's approach to the determination of DOMLEC's capital investment programme for the period 2015 to 2017. This agreement covers the expenditures in the Generation, Commercial, Finance, Information Technology, and Administration Departments and Engineering section. However, we are not in support of the removal of the expenditure pertaining to geothermal from the Transmission & Distribution Department because DOMLEC has credible information which indicates that substantial costs will have to be incurred in support of the geothermal project from 2015. In fact the following activities should be noted:

- *Production well with known power plant capabilities has been established.*
- *Technical discussions regarding the geothermal plant design, configuration and sizing determination are in the final stages.*
- *Negotiations on the Power Purchase Agreement have commenced.*

Given the preceding, DOMLEC has made the necessary budgetary provision in its Transmission and Distribution financial plan. It is to be noted also that the construction period for the 33kV network expansion is estimated at two years. Therefore, the associated costs must be factored into the tariff period if the network expansion is to be ready for the 2017 projected commencement data for the geothermal power plant operations."

Consultation Question No. 7

Do respondents agree with the Commission's plan to provide for the interconnection arrangements to the geothermal plant when there is certainty as to the timing and the expected contribution by the Government to the capital works, noting the Commission's commitment to conclude this matter as part of this proceeding?

DOMLEC's response:

DOMLEC's position on the Commission's treatment of the capital investment related to geothermal, as articulated under our response to Consultation question 6, are restated here. The COMMISSION's assertion related to the Government's involvement in the investment of the 33kV interconnection has not been confirmed and ought not to be used to justify its decision to exclude the construction of the 33kV interconnection from the investment capital requirements of DOMLEC.

The COMMISSION, at the public consultation of March 13th 2015, indicated that they were considering the possibility of re-opening the tariff to enable DOMLEC to apply for authorization of the associated capital investment works and expenditure related to geothermal once the interconnection scenario has been agreed. However neither the Tariff Regime Decision Document Ref: 2009/004/D nor the Electricity Supply Act of 2006 provides a mechanism by which the Company can apply for a re-adjustment of its rates before the end of the tariff period.

DOMLEC is interested in being assured of the process by which the COMMISSION proposes to authorize these capital works and expenditure during the tariff period, as well as the

parameters, conditions and time schedules within which it would do so. The latter is particularly important because, as has been stressed before, the construction period for the 33kV network expansion is estimated at two years.

In the circumstances due consideration must be given to the requirements of section 20 of the Act, more particularly subsection 20 (c), and section 22 (c).

DOMLEC's Comments on Commission's response to Question No. 7 of the First Consultative Document

The Commission's response to DOMLEC's response to Question No. 7 does not address the issues raised. It is precisely because of the requirements of section 20(c) and section 22(c) of the ESA that the Commission must specify the mechanism and the circumstances under which DOMLEC may refile for a tariff review. Part IV of the ESA does not make provision for the re-opening of the tariff process once it has been concluded. In other jurisdictions this has been specifically provided for under the relevant act. For example, in Barbados, the Utilities Regulation Act section 15 (2), states

'*Notwithstanding subsection (1) where upon an application by a service provider the Commission is satisfied that there has been such a fundamental change in circumstances as to warrant a review of the rates, principles or standards of service, the Commission may conduct such a review.*'

Additionally at the Commission's Public Consultation held on March 14th, 2015, the Commission made representation that Section 24 of the ESA gives the COMMISSION the authority to reopen the tariff review process after a decision has been determined. DOMLEC disagrees with the Commission's interpretation of the said section, and suggests that the said section **does not** give the Commission the authority to re-open the tariff review once a decision has been made.

EMS Ltd. Response to Questions 6 and 7 from the Last Consultation.

EMS Ltd position is as follows:

- We agree that the North/South 11KV Feeder requires strengthening to cater for voltage drop/fluctuations in the North of the island.

- Presently, this challenge is reportedly addressed by having generation at Sugar Loaf Power Station in the North

- Establishment of a 33KV North/South Transmission line from Fond Cole to Sugar Loaf would address this situation at a stated cost of about US 15 Million.

- Such an investment would result in significant increases to the existing tariff base price.

- Another development that has to be taken into consideration is the proposed Geothermal Plant in Laudat which is reportedly targeted to supply at least 7MW of power to the National Grid.

- The construction of an associated 33KV transmission line to evacuate this power directly to the North of the island should also form part of this proposal and should not be treated as Capital Investment by the utility and consequently, an integral part of the pending tariff review.

- Another approach to resolving the challenge of the existing North/South 11 KV line, is the introduction of distributed generation using RE resources at various strategic locations along or at the end of the line.

- Such an initiative would necessitate the establishment of several relatively low capacity intermittent renewable generation systems, together with adequate energy storage capacity to assist with the maintenance of system stability.

- The integration of Solar PV Systems with storage would also address fulfilling of pre Geothermal capacity shortage that would be created by the retirement of Diesel Generation, in accordance with the established retirement schedule.

- This option has to be addressed in a very competitive manner and should not be addressed as utility scale solar farms. Such action would not have the overall cost reduction to consumers as the utility's significant overheads would have to be included in the rate.

- Instead, private businesses should be encouraged to establish these to enable localized use, with excess fed to the grid at reasonable costs.

- If sufficient of these Solar PV Systems with Storage are established along the Distribution Systems, the effect would be to have utility supplied with energy at a much lower cost than what prevails at present, as the utility only pays for the avoided cost of fuel for all energy supplied.

- Technological developments have evolved where such systems would also result in the improvement of line performance if analysed and implemented effectively.

- The establishment of such systems along the line should be carefully analysed to determine the optimum location and size for each location.

- Thereafter, in keeping with the prevailing liberalization of the electricity generation policy, notices should be issued for public participation in fulfilling/satisfying these requirements.

- The utility should not be allowed to establish relatively large scale systems without allowing public participation.

- Furthermore the establishment of Energy Storage Systems along the line would help to prepare the utility for the advent of Geothermal Generation which is likely to introduce additional base load generation capacity, for which demand is not in place at present, if the hydro capacity is to be kept online.

- The introduction of storage capacity into the Distribution System would allow the base load generation to be used as storage, and peaking during the following day.

EMS Ltd. Position is that a more detailed analysis of this option must be carried out to determine the overall effect on the system in the short and medium term.

Consequently it is not recommended that expenditure for the construction of the 33KV line be entertained in the present 3 year tariff review exercise.

DOMLEC Response to the COMMISSION response on the Additional Analysis

The Commission requested that additional studies be undertaken on a range of scenarios focusing primarily on the delay of geothermal. Consequently, DOMLEC performed the necessary analyses and submitted the results to the COMMISSION. It is to be noted here that at no time did DOMLEC suggest any delay of the geothermal or the necessary preparatory activities to support the same. DOMLEC's position is that the analyses do not confirm that the infrastructural development should be delayed. It merely confirms that there are additional options to securing the maintenance and security of supply.

(New) Consultation Question No. 5

Do stakeholders agree with the Commission's decision on the IRP?

DOMLEC's response:

DOMLEC understands and supports the Commission's position with respect to new generation geared at increasing installed capacity. However, with respect to new generation aimed at the replacement of existing installed capacity for reasons of obsolescence, retirements, etc. DOMLEC seeks clarification from the Commission.

The Commission's Summary Response to issues relating to the CIP

1. In considering the comments from the stakeholders and the legal framework for the re-opening of the tariff negotiations when there is certainty as to:

    a. The timing of the construction of the Geothermal plant; and
    b. The financing and construction of the transmission upgrade.

    The Commission has decided to allow the provisions for the expenditure for the upgrade of the transmission network in this period. However, this expenditure will be subject to the approval of the Commission upon obtaining certainty from the Government as to their actual plans and contribution towards the construction of the same.

    DOMLEC has to be mindful of the many factors that must be given consideration by the Commission and, as well the Commission's mandate as embodied in the Act. All stakeholder interests must be balanced.

2. In specific response to the submission by EMS on Questions 6 and 7 from the last consultation. It must be emphasized that, DOMLEC's generation license is non-exclusive and adding generation capacity is subject to competition. Thus, demand side initiatives to assist in the deferral of massive investment by DOMLEC in reinforcing the T&D network must be carefully weighed and proper studies performed in order to ascertain the impact of these initiatives.

    Notwithstanding the above, these interventions can and will form part of the national IRP.

3. In reference to Question 7, the Commission has reviewed its approach and as stated earlier in it decision re: DOMLEC's 5-year Capital Investment Plan, will allow the provision of expenditure for the transmission system upgrade. This provision, however, will be subject to approval of the funds for use in the upgrade, when there is more certainty related to the associated financing of this project by the Government.

    With specificity and arising from this consultation, the Commission **Approves** the construction of the 33 kV North/South, Fond Cole – Sugar Loaf leg of the Transmission Line for commercial operation in late 2017.

    Table 10 below, includes the insertion of the proposed stipulated amounts for the Transmission and Distribution upgrades in establishing a 33kV transmission system i.e.

Scenario 4[3], for the years 2016 and 2017. In making this Determination, the Commission Orders that the decisions as to the actual additional implementation of the 33kV system developments shall be subject to specific approval by the Commission on an application by DOMLEC.

Table 10
DOMLEC – Proposed Investment Programme
(Amounts included for 33kV additions to the Network)

	2015 (EC$)	2016 EC$	2017 EC$	2018 – 2019 (EC$)	Total (EC$)
Generation	2,917,923	1,605,000	1,505,000	10,796,276	16,824,199
Commercial	**1,890,277**	1,997,158	1,868,216	3,051,829	8,807,480
Transmission and Distribution	2,511,993	16,827,898	33,399,484	5,601,915	13,368,731
Engineering	797,572	193,297	299,490	1,020,000	2,310,359
Administration	496,350	646,800	580,900	1,005,900	2,729,950
Finance	450,000	450,000	450,000	900,000	2,250,000
Information Technology	479,805	601,520	649,075	905,000	2,635,400
Total	9,543,920	22,321,673	38,752,165	23,280,920	48,926,119
Average per annum (2015-2017)	**23,539,253**				

In any event, the Commission believes that should it be necessary to reopen the tariff it has mechanisms at its disposal by using its "public interest" mandate and if necessary conducting a Rule Making Process to enable a consultation to take place.

4. The IRC is in agreement with DOMLEC's response in relation to the additional analysis related to the various scenarios on generation and transmission configuration options. It is noted that DOMLEC did at no time suggest a delay in the timing of the geothermal plan and associated works in supporting the same.

5. The Commission notes DOMLEC's intervention regarding the options of adding capacity for replacement versus growth. The reality is that the Commission has recently approved the depreciation policy[4] which takes into account the expected remaining life of the various generating plants. As far as the Commission is concerned this should provide guidance as to future decisions regarding replacement capacity.

[3] Scenario 4 – "33kV transmission line configuration - proposed superstructure from DOMLEC's Geothermal Interconnection Study of November 2013."
[4] 2014/001/D – "Depreciation Policy For Dominica Electricity Services Ltd"