COMMONWEALTH OF DOMINICA

IN THE MATTER OF the Electricity Supply Act 10 of 2006

AND IN THE MATTER OF the DOMLEC Transmission, Distribution and Supply Licence issued by the Independent Regulatory Commission to Dominica Electricity Services Limited

AND IN THE MATTER OF the petition of Dominica Electricity Services Limited regarding the decision of the Independent Regulatory Commission identified in Decision Document: Weighted Average Cost of Capital for Dominica Electricity Services Ltd (Document Reference 2015/001/D), issued on the 23rd day of April 2015 and which came into effect on the 1st day of May 2015.

PETITION FOR RECONSIDERATION

Dominica Electricity Services Limited ("DOMLEC") in accordance with Condition 17 of the DOMLEC Transmission, Distribution and Supply Licence issued by the Independent Regulatory Commission to Dominica Electricity Services Ltd and which came into effect on January 1, 2014 requests that the Independent Regulatory Commission ("IRC" or the "Commission") reconsider its 8 Part Decision regarding the Weighted Average Cost of Capital to be applied to DOMLEC's regulated asset base at the ensuing tariff review to be conducted in 2015.

Decision 1: DOMLEC's capital structure shall be 40% debt and 60% equity for the tariff period 2015 - 2017

Grounds for Reconsideration:

DOMLEC requests that the Decision be reconsidered because:

 In view of its market context, as an isolated island system and its small size, DOMLEC's actual capital structure of 33.1% debt and 66.9% equity is well within the realm of the normal range for determining the WACC. It is not only consistent with least cost principles but also falls in close proximity to the industry range identified by the Commission. Resorting to a notional capital structure should only occur if DOMLEC's debt to equity ratio were an anomaly.

- 2. The IRC's position regarding capital structure has been inconsistent:
 - Page 16 of the IRC Consultative Document: Notice of Proposed Rule Making 2015/001/NPRM-001 dated February 2015 states:

Proposed Decision 1 - DOMLEC's capital structure shall be 38% debt and 62% equity for the tariff period.

 Page 19 of the IRC Consultative Document: Notice of Proposed Rule Making 2015/001/NPRM-002 dated March 2015 states:

Proposed Decision 1 - DOMLEC's capital structure shall be 38% debt and 62% equity for the tariff period.

- Page 15/16 2015/001/NPRM-01, the IRC stated as its reason the average amongst the regional utilities is 38%.
- iv) Page 25 of the IRC Decision 2015/001/D, Weighted Average Cost of Capital dated April 2015 states:

Decision 1 - DOMLEC's capital structure shall be 40% debt and 60% equity for the tariff period.

- DOMLEC has not had the opportunity to respond to this latest position.
- The final capital structure ratio, 40/60 is a departure from the IRC's previous positions regarding capital structure.
- The ultimate figure is higher than the industry average for the Caribbean region but the IRC has not given any reason for arriving at such an anomalous position.

Decision 3: The Commission determined that the risk free rate shall be the US 10 Year Treasury Bond rate as at December 2014 – that is 2.17%.

Grounds for Reconsideration:

DOMLEC requests that the Decision be reconsidered because:

- 1. The Decision was reached without regard to the following:
 - 1.1. It is standard practice that the term of the debt instrument used to fix the risk free rate of the assets in question be matched with the lives of the said assets. The assets of DOMLEC, like most electric utilities, have useful lives of 20-40 years or more. It is therefore appropriate that a 30 year term bond be used and not a 10 year term bond.
 - 1.2. Given the monthly volatility in short term bond yields it is preferable to use an average of several recent months rather than a point in time estimate. The table below presents the monthly yields for the US 10 & 30 year Treasury Bonds.

Month	10 Year Rate	30 Year Rate
Jan-14	2.86%	3.77%
Feb-14	2.71%	3.66%
Mar-14	2.72%	3.62%
Apr-14	2.71%	3.52%
May-14	2.56%	3.39%
Jun-14	2.60%	3.42%
Jul-14	2.54%	3.33%
Aug-14	2.42%	3.20%
Sep-14	2.53%	3.26%
Oct-14	2.30%	3.04%
Nov-14	2.33%	3.04%
Dec-14	2.21%	2.83%
Average	2.54%	3.34%

Figure 1: Treasury Bond Average Monthly Yield

Source: U.S Department of Treasury:

http://www.treasury.gov/resource-center/data-chart-center/interestrates/Pages/TextView.aspx?data=yieldYear&year=2014 1.3. Yields through 2014 and early 2015 have been at historically low values due to the policies of the US Federal Reserve following the Great Recession. The Federal Reserve has signalled that these policies will be coming to an end in the near future so rates will most likely be increasing over the next 3 years. There is some emerging evidence that yields are beginning to increase as generally anticipated, the closing yield for the 10 Year US Treasury Note for auctions held on May 12, 2015 (the most recent day available as this document was being prepared) produced a yield of 2.67% which is 50 basis points higher than the December 2014 yield utilized by the IRC in their various documents.

Decision 4: The Commission proposes that there will be no risk premium due to DOMLEC's size

DOMLEC requests that the Decision be reconsidered because:

- 1. The Commission should include a risk premium attributable to size in the cost of capital as it reflects the well-established principle that small entities face higher business risks than larger entities.
- 2. It is well established that the inclusion of a size related risk premium is particularly appropriate in estimating the cost of capital for small companies. This is due to the observation that cost of equity models such as the CAPM does not adequately measure the risk premium for stocks of small companies such as DOMLEC. Therefore a size premium is necessary because the CAPM systematically understates size risks and therefore higher returns of stocks for small companies are not fully taken into account.
- 3. Empirical research supports the notion that small size companies such as DOMLEC have higher risk premia than large-sized companies. The 3 factor Fama-French Model was referenced by DOMLEC in the public consultations and quite clearly demonstrates this effect. This is a standard model used by financial analysts in stock valuation and the effect is well demonstrated especially for the smallest companies traded on the US exchanges that are most like DOMLEC in their size.
- 4. The financial impacts of random business events which occur over the course of business enterprise cannot be diversified or absorbed by small/micro entities such as DOMLEC as well as these impacts can be absorbed by large entities.

Decision 5: The Commission will use the group of 35 companies in power sector used by Professor Damodaran as the proxy utilities.

Grounds for Reconsideration:

DOMLEC requests that the Decision be reconsidered because:

The Commission has been inconsistent in its approach regarding the proxy companies. The Commission
has failed to adopt a sound methodology for properly selecting the group of companies most suited for
comparison to DOMLEC. The approach taken in this exercise has been erratic, from the selecting of a
sample that was too narrow (2 Caribbean utility companies) in the first instance ref: page 21 of Notice of

Proposed Rulemaking 2015/001/NPRM-001 dated February 2015 to one that was too wide (an unfiltered list of 353 companies) ref: page 35 – 51 of Notice of Proposed Rulemaking 2015/001/NPRM-002 date March 2015 before settling on the present 35 companies.

- 2. Having agreed with DOMLEC that the proxy companies originally selected by the IRC were inappropriate, (See Notice of Proposed Rulemaking 2015/001/NPRM-001 dated February 2015), the IRC rejected DOMLEC's proxies without giving any reasons for so doing. Given that 80% or 12 out of the 15 companies included in the DOMLEC sample were included in the IRC proxies, representing 37% of the IRC proxies, this suggests that the proxy companies selected by DOMLEC was in the first instance very appropriate. See Appendix 1.
- 3. Many of the proxy companies presently chosen by the IRC did not uniformly possess the following characteristics required for them to be usefully comparable to DOMLEC for the purpose of determining systematic risk:
 - 3.1. Regulated monopoly (The following (8) eight companies operating in jurisdiction where electricity supply is not regulated: First Energy Corporation, PPL Corporation, Pepco Holdings, Portland General Corporation, UIL Holding Corp, El Paso Electric Co, Chesapeake Utilities Corp, and Unitil Corp). See Appendix 1; Filter 3.
 - 3.2. Vertically Integrated Electric Utility (ITC Holdings is a Transmission Only Company). See Appendix 1; Filter 1.
 - 3.3. Suppliers of Electric Power to Retail End Users (The Laclede Group, Questar Corporation and New Jersey Resources are natural gas companies. AES Corporation and NRG Energy are wholesale generation companies). See Appendix 1; Filter 1.
 - 3.4. Comparable market capitalisation (The following (10) ten companies have market capitalizations of more than \$10 Billion and have Beta values that are systematically lower than smaller companies: Excel Energy Corporation, Exelon Corporation, Duke Energy, Southern Company, American Electric Power, NextEra Energy, First Energy Corp, Entergy Corporation, PPL Corporation, and Edison International). See Appendix 1; Filter 4.

Decision 6: The Commission determines the Mature Market Risk Premium of 5.21%, stated by Professor Damodaran as the implied equity risks approach.

Grounds for Reconsideration:

DOMLEC requests that the Decision be reconsidered because:

- 1. The IRC did not provide data to show how the MMRP stated by Professor Damodaran is computed.
- The Decision departs from the common practice in rate cases to develop ex-post estimates of the Equity Risk Premium (ERP - referenced throughout the Decision as Mature Market Risk Premium (MMRP), by taking an intermediate to long-term average of annual returns of a broad market basket of stocks (typically

the Standard & Poors 500) less the corresponding annual risk free rate usually of 30-year US Treasury Bonds, without giving any reasons for so doing. The said common practice approach has the advantage in that it is readily observable and can be easily explained and understood. Depending on the time period and bond term for comparison these estimates range from approximately 6.0% to 10.0%.

The <u>2011 Ibbotson Risk Premium over Time Report Estimates for 1926-2010</u>, published by Morningstar demonstrated just how sensitive the ERP is to the assumptions used. Many additional examples can be provided, but the overall result is that the long-term ERP is typically estimated in the 6% to 10% range depending on the time horizon with the longer time horizons usually converging to a number of approximately 8.0%. The 1926-2010 average in the Morningstar publication is 7.2%.¹

The typical value chosen for this important parameter in electric rate cases has been around the longterm of 8.0%. This approach has the advantage of providing stability to returns and avoids rate shock to customers that could arise from using a more volatile short term. The following table illustrates the implementation of the CAPM in recent US electric utility rate cases.

			US CAPN	Cost of Ed	uity Estim	ates by Cor	nponent	
Date	Jurisdiction	Witness	Bond Used	Risk Free Rate	Risk Premium	Mkt Avg. COE with Beta = 1	Utility Beta	Utility Equity Cost
Nov-11	PSC of Colorado	Sharpe	30 Yr Bond	3.18%	11.0%	14.1%	0.76	11.5%
Apr-12	San Diego Gas & Electric	Morin	30 Yr Bond (fcast)	4.20%	7.9%	12.1%	0.74	10.0%
Nov-14	Lousville Gas & Electric Company	Avera & MacKenzie	30 Yr Bond	3.40%	9.7%	13.1%	0.79	11.1%
Jun-13	Jersey Central Power & Light	Kahal	30 Yr Bond	3.00%	8.0%	11.0%	0.71	8.7%
Jun-12	Northern States Power (SD)	Coyne	30 Yr Bond (fcast)	5.10%	6.6%	11.7%	0.74	10.0%
Dec-14	Public Service New Mexico	Hervert	30 Yr Bond	3.18%	9.7%	12.9%	0.77	10.6%
			Average	3.68%	8.8%	12.5%	0.75	10.3%
				1	DOMLEC Co	ountry Risk	Premium	3.3%
				D	OMLEC Cor	npany Size	Premium	1.4%
					DOM	LEC Total Ec	quity Cost	15.0%

The IRC took a novel and unprecedented approach by using an *ex ante* approach advocated by Damodaran. This approach is more difficult to understand and explain. It attempts to estimate investors' future expectations. Damodaran publishes a monthly estimate of the ERP on his website that has significant variability month by month. The IRC chose his monthly estimate of 5.21% as of December 2014. The current May 2015 Damodaran monthly estimate for risk premium is 5.80%. Neither of these estimates fall within the 6% to 10% average range typically observed of the actual difference between stock returns and bond returns.

¹ http://psc.ky.gov/pscecf/2012-

^{00221/}rateintervention@ag.ky.gov/10252012d/lbbotsoin_2011_Risk_Premia_Over_Time_Report_%2820110207135556%2 9.pdf

Decision 7: The Commission has determined 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 10.44%

Grounds for Reconsideration

DOMLEC requests that the Decision be reconsidered because:

- 1. The IRC has not explained why it departed from normal cost of capital principles and adopted an approach that modifies the country risk premium (CRP) by the industry beta (beta = 0.41). It is inappropriate to apply a US beta to modify the country risk premium for Dominica.
- 2. The Decision ignores the fact that DOMLEC is exposed to the full country risk for the following reasons:
 - 2.1. DOMLEC has all of its assets located in Dominica
 - 2.2. DOMLEC has all of its customers located in Dominica
 - 2.3. DOMLEC's revenue stream is dependent on Dominica's economic health.
 - 2.4. DOMLEC does not export products or services and has no revenue from outside of Dominica
- 3. The Lambda approach enables each company to have an exposure to country risk that is different from its exposure to all market risk. Like a Beta, a lambda will be scaled around 1, with a lambda of one indicating a company with average exposure to country risk and a lambda above or below 1 indicating above or below average exposure to country risk. The cost of equity for a firm in an emerging market can be written as:

Cost of equity = Risk free rate + Beta (Mature Market Equity Risk Premium) + λ (Country Risk Premium)

DOMLEC contends that this latter approach is the more appropriate one to be adopted and that a lambda of at least 1 should be applied for the reasons stated in the points listed above at paragraph 2.

- 4. There is no evidence or reason to suggest that DOMLEC investors are less affected by the higher sovereign debt costs, or country risk as otherwise measured, in either Dominica or the Caribbean Region.
- 5. IRC has consistently made errors/had inaccuracies in calculating the CAPM thereby significantly skewing the cost of equity and by extension the WACC. The IRC's CAPM results in its Decision document are again inaccurate. Calculating the results by companies the IRC's assumptions without a country risk or company size adjustment yield a result of 4.32% for the Cost of Equity. This number should be somewhat close to and consistent with recent rate decisions for Electric Companies in the US (consistently very close to 10.0% for the past several years) and the raw results from the IRC application of the DCF Model (12.5%). This result is so far out of sync with current US regulation and the IRC's own DCF calculations that it must be called into serious question. The results are out of sync because the assumptions chosen are mostly outliers that are not consistent with one another.

The result including the country risk adjustment of 6.5% (with a plus/minus one standard deviation range of 4.0% to 9.0%) is also completely out of sync with the recent decisions in Jamaica (12.25%) and Barbados (12.75%).

The table below illustrates the CAPM results restated with a properly filtered comparison group, Beta estimates reflective of the average of readily available public sources, a more appropriate risk free rate and country and company size risk adjustments. Not surprisingly when assumptions with precedent are chosen the results fall into line with the DCF results and regulatory outcomes witnessed in other jurisdictions.

Figure 3.

Risk Free Rate	3.34%
Equity Risk Premium	8.00%
Country Risk Adj	5.34%
Company Size Adj	1.40%

	Γ		CAPM Implen	nentation	
Company Name	Symbol	BETA	CAPM Raw	+ Country Risk	+ Size Risk
Westar Energy	WR	0.47	7.11%	12.45%	13.85%
Pinnacle West Corporation	PNW	0.50	7.30%	12.64%	14.04%
Hawaiian Electric Industries, Inc	HE	0.34	6.09%	11.43%	12.83%
Great Plains Energy	GXP	0.61	8.21%	13.55%	14.95%
OGE Energy	OGE	0.68	8.77%	14.11%	15.51%
PNMResources	PNM	0.65	8.53%	13.87%	15.27%
Ida Corp, Inc	IDA	0.72	9.11%	14.45%	15.85%
Cleco Corporation	CNL	0.58	7.95%	13.29%	14.69%
Allete Inc	ALE	0.79	9.65%	14.99%	16.39%
Otter Tail Power	OTTR	1.04	11.67%	17.01%	18.41%
The Empire District Electric Comp	EDE	0.51	7.39%	12.73%	14.13%
MGE Energy Inc	MGEE	0.69	8.85%	14.19%	15.59%
Teco Energy	TE	0.63	8.39%	13.73%	15.13%
Scana Corporation	SCG	0.40	6.54%	11.88%	13.28%
	Average	0.61	8.25%	13.59%	14.99%
Standa	rd Deviation		1.45%	1.45%	1.45%
	ss 1 Srd Dev.		6.80%	12.14%	13.54%
	us 1 Srd Dev.		9.71%	15.05%	16.45%

- The same critique for the country risk and company size with respect to CAPM also applies to the DCF results.
- 7. The IRC's application of the DCF model without adjustments is reasonable. However, there are a few assumptions chosen by the IRC that could be improved upon:
 - 7.1 Rather than calculate the yield using a stock price at a point in time, it is suggested that the average of the 52 week high price and 52 week low price for a stock be used. This smoothes out the data and eliminates the possibility of daily price volatility skewing the yield number too high or too low.
 - 7.2 It appears that the IRC used the historical 5 year average growth rate in earnings/dividends to arrive at the growth assumption. One of the advantages in using the US market to arrive at the assumptions is that they are well researched. Yahoo! Finance reports the analyst consensus for forecasted growth for the next 5 years for each of these companies. Since investors are forward looking and this is a number that is transparently reported to them it would be preferable to use this forecast.

Figure 4.

								DCF Impleme	entation			
Company Name	Symbol	1	52 Week High	1	52 Week Low		Annual Dividend	Average Yield	Growth %	DCF - Raw	+ Country Risk	+ Size Risk
Westar Energy	WR	Ś	44.03	\$	38.23	\$	1.44	3.50%	3.07%	6.68%	12.02%	13.42%
Pinnacle West Corporation	PNW	\$	73.31	\$	52.13	\$	2.38	3.79%	4.20%	8.15%	13.49%	14.899
Hawaiian Electric Industries, Inc	HE	Ś	35.00	\$	22.71	Ś	1.24	4.30%	4.30%	8.78%	14.12%	15.52%
Great Plains Energy	GXP	\$	30.25	\$	23.91	\$	0.98	3.62%	5.90%	9.73%	15.07%	16.47%
OGE Energy	OGE	ŝ	39.28	\$	30.82	Ś	1.00	2.85%	6.82%	9.87%	15.21%	16.61%
PNM Resources	PNM	\$	31.60	\$	24.26	Ś	0.80	2.86%	9.86%	13.01%	18.35%	19.75%
Ida Corp, Inc	IDA	\$	70.48	\$	51.70	\$	1.88	3.08%	3.00%	6.17%	11.51%	12.919
Cleco Corporation	CNL	Ś	59.21	\$	46.11	\$	1.60	3.04%	3.00%	6.13%	11.47%	12.87%
Allete Inc	ALE	Ś	59.73	\$	44.19	\$	2.02	3.89%	6.00%	10.12%	15.46%	16.869
Otter Tail Power	OTTR	Ś	33.44	\$	26.53	\$	1.23	4.10%	6.00%	10.35%	15.69%	17.099
The Empire District Electric Comp	EDE	S	31.49	\$	23.23	Ŝ	1.04	3.80%	3.00%	6.92%	12.26%	13.669
MGE Energy Inc	MGEE	Ś	48.00	\$	36.30	Ś	1.13	2.68%	4.00%	6.79%	12.13%	13.539
Teco Energy	TE	s	22.02	\$	16.90	\$	0.90	4.62%	9.20%	14.25%	19.59%	20.999
Scana Corporation	SCG	s	65.57	\$	47.77	\$	2.18	3.85%	4.30%	8.31%	13.65%	15.059
	Average	Ś	45.96	Ś	34.63	\$	1.42	3.57%	5.19%	8.95%	14.29%	15.699
Standa	ard Deviation		16.12	Ś	11.84	\$	0.47	0.64%	2.31%	2.58%	2.58%	2.589
	ess 1 Srd Dev.	-	29.84	Ś	22.79	Ś	0.95	2.93%	2.87%	6.36%	11.70%	13.109
	us 1 Srd Dev.		62.08	-	0.08	\$	0.12	4.21%	7.50%	11.53%	16.87%	18.279

	IRC	Revised
Avg Yield %	3.42%	3.57%
Avg Gr %	8.77%	5.19%
Raw DCF	12.49%	8.95%

Decision 8: The Commission has determined that the WACC to be applied to DOMLEC's regulatory asset base shall be 8.56%.

Grounds for Reconsideration

DOMLEC requests that the Decision be reconsidered because:

 As discussed above the IRC application of the CAPM model using the US data selected had several shortcomings. The graph below highlights the results of the various approaches by laying out the range plus and minus one standard deviation. It is revealing in that it shows just how out of sync the IRC's CAPM implementation is from the other estimates.



Figure 5.

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One of the main reasons for taking a look at multiple approaches is that they reinforce and validate one another. Of major concern is that the IRC's CAPM assumptions are producing results that are inconsistent with the other approaches and recent regulatory outcomes.

A reasonable range for the Cost of Equity would be 13.1% to 18.3%. The IRC's decision of 10.44% is well outside of this range and if implemented would significantly understate this cost. Moving forward with the decision does not change the true cost and would have an adverse effect on DOMLEC's customers, employees and investors and should therefore, be revisited prior to its implementation.

2. The IRC has introduced new methodologies in the Decision, different to those adopted in the Proposed Rule Making documents issued during the consultation without affording DOMLEC the opportunity to respond. Overall as it relates generally to this application the IRC has constantly changed their methodology for determining the WACC without good reason for doing so and without giving DOMLEC the opportunity to respond.

CONCLUSION

In the circumstances, DOMLEC implores the IRC to reconsider its decision in light of the factors and methodological recommendations detailed above. This is necessary if the IRC is to come to a decision which reflects its statutory mandate to hold the balance equitably between the interests of end consumers and that of investors in the electricity sector.

Yours sincerely

DOMINICA ELECTRICITY SERVICES LTD.

S. BERTILIA LEBLANC-MCKENZIE

GENERAL MANAGER

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APPENDIX 1

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IRC Proxy Companies The AES Corporation NRG Energy New Jersey Resources Corp The Laclede Group Inc Questar Corporation ITC Holdings Corp Northeast Utilities Pepco Holdings Inc Pepco Holdings Inc Perco Holdings Corp UIL Holdings Corp UIL Holdings Corp El Paso Electric Co. Chesapeake Utilities Corp UIL Holdings Corp First Energy Corporation Southern Company American Electric Power Co. Inc NextEra Energy Inc.

Exchange	Country	Dividend	Growth Rate	Return on	Beta					Filtered	DOMLEC
icker		Yield	5 yrs Avg EPS & Dividend	Equity		Filter #1	Filter #2	Filter #3	Filter #4	IRC Proxy Companies	Proxy Companies
VYSE:AES	. S.U	ŝ	1.68	4.68%		1.23 1.2	m				
NYSE:NRG	U.S	2.31		5 10.97%		0.71 0.71	Ţ				
VYSE:NJR	U.S	2.9					4				
VYSE:LG .	U.S	3.57		6.09%			2				
VYSE:STR	U.S	3.54	-	14		0.49 0.4	0				
NYSE:ITC	U.S	1.82	10.32	2 12.14%			F				
VYSE:NU	U.S	3.32		6 4.68%		0.38	0.38	00			
NYSE:POM	U.S	4.04		7 5.61%		0.24		0.24	-		Pepco Holdings Inc
VYSE:POR	U.S	3.06	3.78	6.84%		0.41		0.41			Portland General Electric Co.
NYSE:UIL	U.S	3.44	3.18	6.62%		0.58		0.58			UIL Holdings Corp
NYSE:EE	U.S	2.97	6.43	3 9.40%		34		0.34	-		
NYSE:CPK	U.S	2.15	5 7.68	9.83%		0.44		0.44	-		
NYSE:UTL	0.5	4.13	3 13.64	4 17.77%		33		0.33			
VYSE:FE	U.S	4.09	9 8.05	5 12.14%		0.18		0.18		00	
VYSE:PPL	U.S	4.46	5 28.15	5 32.61%		0.22		0.22		2	
NYSE:EXC	0.5	3.71	1 6.77	7 10.48%		.42			0.4	2	
NYSE:DUK	U.S	4.1		11.58%		0.14			0.1	4	
NYSE:SO	U.S	4.45	3.75	5 8.20%		60			0.09	5	
NYSE:AEP	U.S	3.79		1 8.10%		0.3			0.3	m	
NYSE:NRG	U.S	2.96	5 12.1	1 15.06%		0.31			0.31	-1	
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Filter #3 Companies in US States that have implemented Deregulation of Electricity Generation/Supply	
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