Volume 13 Issue 2
Originally issued as C3



Global Journal of Management and Business Research
Finance
Volume 13 Issue 3 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Credit Analysis of Emerging Economics Energy Distribution Company of Peru

By Alfredo Mendiola, Edmundo R. Lizarzaburu & Julio Quispe
School of Business Esan University, Perú

Abstract - The case focuses in evaluation of a Peruvian company called "The Energy Distribution Company of Peru – DEPSA". This company has several lines of financing (credit lines or credit facilities) in order to cover their operations in the short and long term. In the last board meeting, they (the board members) agreed that DEPSA should continue with the current financing politic for their operations, focusing on the next 12 months in the short term. In order to confirm the possibility of continuing with that politic, the finance manager had to coordinate with the main bank, the evaluation through a credit analysis and ask for a renewal of its credit lines first in front of the respective financial institution.

In addition, the board asked that the regulatory area explains, on the next session, how the Electricity Sector works in Peru does and who are the main actors and stakeholders of the business.

Keywords : electricity sector, financial strategies, financial statements analysis, ratios, dupont, profitability and risks.

GJMBR-C Classification : JEL Code: E51



Strictly as per the compliance and regulations of:



© 2013. Alfredo Mendiola, Edmundo R. Lizarzaburu & Julio Quispe. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Credit Analysis of Emerging Economics Energy Distribution Company of Peru

Alfredo Mendiola [α], Edmundo R. Lizarzaburu [σ] & Julio Quispe [ρ]

Abstract - The case focuses in evaluation of a Peruvian company called "The Energy Distribution Company of Peru – DEPSA". This company has several lines of financing (credit lines or credit facilities) in order to cover their operations in the short and long term. In the last board meeting, they (the board members) agreed that DEPSA should continue with the current financing politic for their operations, focusing on the next 12 months in the short term. In order to confirm the possibility of continuing with that politic, the finance manager had to coordinate with the main bank, the evaluation through a credit analysis and ask for a renewal of its credit lines first in front of the respective financial institution.

In addition, the board asked that the regulatory area explains, on the next session, how the Electricity Sector works in Peru does and who are the main actors and stakeholders of the business.

Keywords : electricity sector, financial strategies, financial statements analysis, ratios, dupont, profitability and risks.

I. Introduction[1]

The Energy Distribution Company of Peru has requested a revision and expansion of their commercial credit lines and the Main Manager of Risks are of EMERGING Bank[2], has requested to its senior analyst Mr. Fausto Menlizqui to make an economic – financial analysis of the Energy Distribution Company of Peru with the purpose of evaluation the renewal and expansion of the lines of the company.

The process of analysis will take him at least 2 weeks, considering the uprising and recollection of information, the data processing and the elaboration of the company's analysis. The information will be obtain through several sources of the Peruvian market (Stock Market of Lima, CAVALI, SUNAT, Conasev today known as the Superintendence of the Securities Market – SMV, and others) and the information will be audited and commercial that the company will bring, that is also on the Conasev web page (today SMV) since their stocks are listed on the Stock Market of Lima.

After checking some documents, Mr. Fausto Menlizqui required a meeting with Mr. Ernesto Valdez, Chief Financial Officer of the Energy Distribution Company of Peru, with the purpose of talking about the information that was going to be processed and analyzed. The meeting was made before the credit report. The meeting will be on summer 2011.

At the meeting, Mr. Valdez comments a little about the sector and the company's history, mentions some things about the growth in the Peruvian market (there's a construction boom[3] in Peru, where before there was one house – one meter, now there are in average buildings of 15 apartments – 15 meters and also a meter of the building itself).

II. Electricity Sector in Peru[4]

As in all investments, the access to the sector's information is a key variable to consider, especially everything about the legal and regulatory aspects.
The industry of electric energy in Peru is divided into:

(a) Generation, that consists on the creation of energy through several sources, among which water, natural gas, coal and oil are the most important,
(b) Transmission, the electricity is transported through transmission lines to the substation, those substations convert high voltage electricity into less voltage electricity, and
(c) Distribution, in which the electricity is taken from the substation to houses, offices and factories.

As shown below on Table 1. The electric energy consumption per capita and on Graphic 1 Evolution of electric energy per capital the growth have been constant on the last 15 years and, apparently, it will continue with this increasing trend on the next years. This information can be used to compare the growth trend of consumption against sales growth and the company's margin.

Table 1 : Electric Energy Consumption Per Capita

Year	kW.h/inhabitant
1995	584
1996	603
1997	625

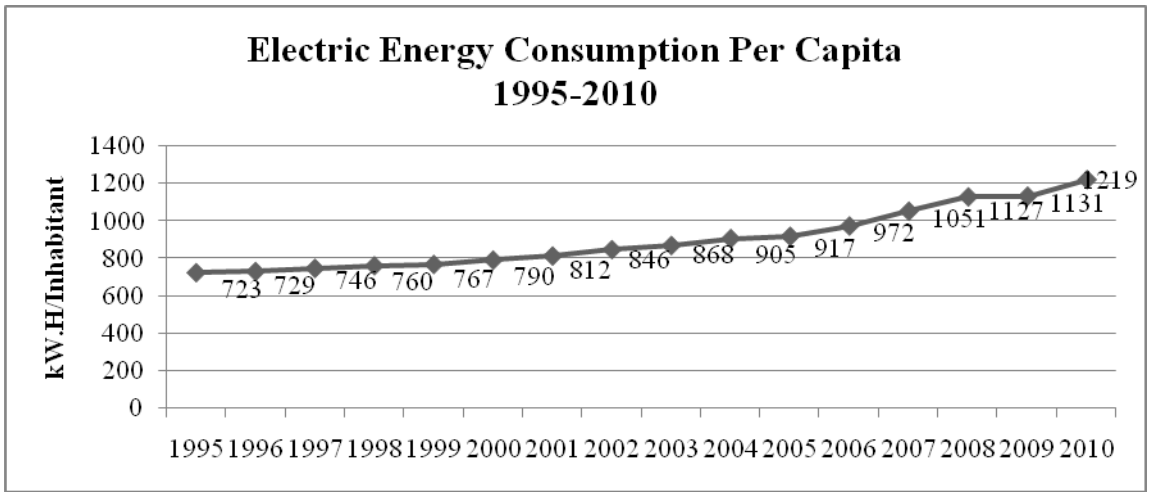
Author α : PhD School of Business Esan University Alonso de Molina 1652, Monterrico Chico, SurcoLima, Perú.
E-mail : amendio@esan.edu.pe
Author σ : E-mail : elizarzaburub@gmail.com
Author ρ : Julio Quispe, PhD (c) School of Business Esan University Alonso de Molina 1652, Monterrico Chico, Surco Lima, Perú.
E-mail : jquispe@esan.edu.pe

[1] Class & Asociados S.A. Pacific Credit Rating.
[2] Peruvian bank, the name was modified for this evaluated case..
[3] Source: Newspaper Perú 21, Chamber of Commerce of Lima, October 2011.
[4] Class & Asociados S.A. Pacific Credit Rating.

© 2013 Global Journals Inc. (US)

1998	645
1999	656
2000	680
2001	711
2002	737
2003	755
2004	794
2005	805
2006	854
2007	929
2008	1002
2009	999
2010	1079
Growth 10/09	8%
Average Variation 10/05	6%
Growth 10/00	59%
Average Variation 10/00	5%

Graphic 1 : Evolution of Electric Energy Consumption Per Capita

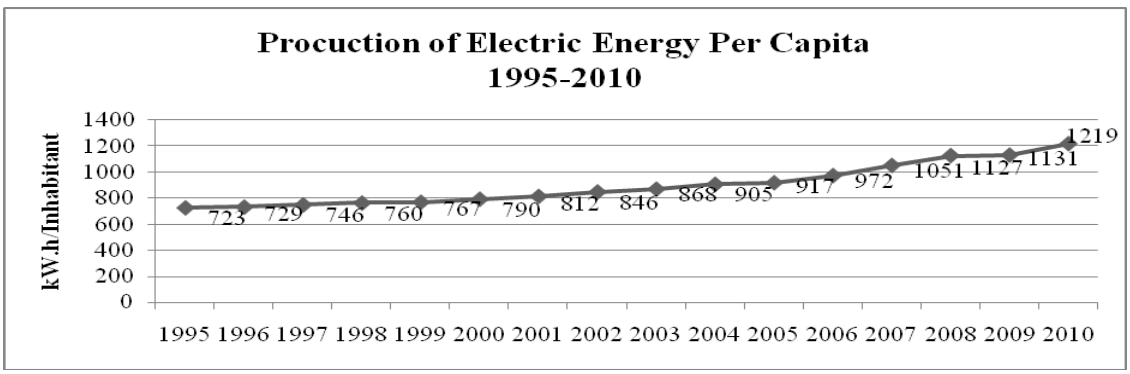


Also, the production of electric energy during the last 15 years has had the same trend as consumption. The Table 2 Production of Electric Energy Per Capita and Graphic 2 Evolution of the Production of Electric Energy Per Capita show what was mentioned.

Table 2 : Production of Electric Energy Per Capita

Year	kW.h/inhabitant
1995	723
1996	729
1997	746
1998	760
1999	767
2000	790
2001	812
2002	846
2003	868
2004	905
2005	917
2006	972
2007	1051
2008	1127
2009	1131
2010	1219
Growth 10/09	8%
Average Variation 10/05	6%
Growth 10/00	54%
Average Variation 10/00	4%

Graphic 2 : Evolution of the Production of Electric Energy Per Capita



© 2013 Global Journals Inc. (US)

In order to have more details of the sector, Mr. Fausto Menlizque coordinated with the regulatory area of Emerging Market, where Dr. Macarena Lizquerri attended him. This information is shown of Annex 1 of this case.

III. Background of the Company and Operations

Fausto, has shown interest on the explanation of the sector, but considered relevant to understand the operation of the company and know as much as possible about the financial situation of the company on the last years.

In order to do that, he checked the web page of the Stock Market of Lima (www.bvl.com.pe) and CONASEV (today known as SMV www.smv.gob.pe) and the information given by the company. The detail of its stock prices (stock's information and details of the bonds in circulation) is shown on Annex 2 of this document. On those pages he found important information about financial statements, cash flow and prices of several instruments that the company has, now, DEPSA.

Is important to mention some relevant aspects about the history of the company in study, which is a member of Endesa group. The Electric Distribution Company of Peru started its operation in March 1934. Its principal objective is to make activities of distribution and commercialization of electric energy, on a competitive background and free market according to the standards that are valid on the Peruvian market. Nowadays, the company works on 52 districts in Lima and Callao (Peru) with a total of 2,440 km^2 in which 1,838 km^2 are on the north of the capital city. In addition, it works at the provinces of Huaura, Barranca and Oyon.

In accordance with the provisions of the law and in addition to its social object, in 2006 the company started, on its concession area, the sales of electric artifacts and insurances (multiple insurances, burial insurances and family protection insurances). All of those services are targeted to clients with medium and low sizes of income; they are added an additional charge on their receipts.

Since 1998, DEPSA has a contract of energy purchase and the contracted power with the company Edegel SAA has a maximum capacity of 145MW and a length of 13 years. Since 2007 the company has made several tenders on the base of the Law 28832 with the purpose of ensure the supply of electric energy to its free clients and regulated on the short term (2008-2013) as well as on the long term (2014-2025). As a result of the tenders the company has sign several contracts (more than 100) electric energy supply; in which, between 20 and 25, were signed with Edegel SAA and the minimum power contracted was 0.3MW and a maximum of 275MW.

DEPSA is a member of Endesa group, which a leader company of the Spanish electric market, one of the five biggest in Europe and on the main private electric companies in Latin America. Its main business is to produce, transport, distribute and commercialize electric energy. In addition, it has an increasing presence on the Iberian market of natural gas and develops other services that add value to their main business. Under the acquisition of Endesa by the Italian group Enel, the biggest electric company in Italy and the second Italian operator of natural gas, the Energy Distribution Company of Peru is now part of the second electric company with major installed capacity of the world, with a presence on 23 countries of the 4 continents and has 96,000 MW of installed capacity and 60.8 million clients in generation and electric and gas distribution. In addition, they have an increasing presence on the Iberian market of natural gas and develops other services that add value to its main business and has a characteristic support of its operation and several offices around the world.

a) Commercial Management

At the end of 2010, 1,043,924 clients were registered, which represented an increase of 2.4% regarding December 2008, highlighting an increase on the residential segment with 1.9%. Below Charter N°1 Commercial Management shows in detail the types of clients and the energy consumption they totalize, at the closure of 2010.

Charter No. 1 : Commercial Management[5]

Type	Energy Billed		Type	Number of clients	
	Mwh	MS/.		Quantity	%
Residential	1,068,002	371,094	Residencial	982,628	94.13
Commercial	575,512	136,108	Comercial	40,979	3.93
Industrial	590,621	123,649	Industrial	963	0.09
Others	390,550	121,989	Otros	19,344	1.85
Toll	212,487	4,080	Peaje	10	0
Total	**2,837,172**	**756,920**	**Total**	**1,043,924**	**100**

Source : Energy Distribution Company

[5] The tariff components are shown on Annex 2.

© 2013 Global Journals Inc. (US)

b) Relationship between the Company and the Government

As an electric sector company, DEPSA is under the supervision of OSINERGMIN[6] regarding the fulfillment of legal dispositions applicable and attached to its electric activities; being the organization in charge of penalize and solve in last administration instance the matters attached to those legal dispositions. In addition, OSINERGMIN controls the fulfillment of environmental obligations in charge of the emitter, in this case the Energy Distribution Company of Peru.

IV. Financial Situation[7]

The financial information selected was obtained on the financial statements of DEPSA, which are shown on its memories of the years 2006 to 2010, on the dates and for every period indicated on this section. Fausto started the analysis the information of the Financial Statements, through some methods and obtaining the behavior of the main accounts.

Charter No. 2 : Composition of Assets 2010

	2010
ASSET	
CURRENT ASSET	
Cash and Cash equivalent	158,548.00
Commercial Receivables (net)	251,233.00
Other receivables of relate parties (net)	1,922.00
Other receivables (net)	16,117.00
Inventories	24,909.00
Expenses contracted in advance	4,299.00
TOTAL CURRENT ASSET	**457,028.00**
NON CURRENT ASSET	
Financial investments	10,946.00
*Other financial investments	-
Commercial receivables	990.00
Property investments	-
Property, machinery and equipment	2,171,321.00
Intangible Assets (net)	14,227.00
Other assets	-
TOTAL NON CURRENT ASSET	**2,197,484.00**
TOTAL ASSET	**2,654,512.00**

Source : SMV

Charter No 3 : Composition of Liabilities 2010

	2010
LIABILITIES	
CURRENT LIABILITIES	
Bank overdraft	-
Financial obligations	116,324.00
Commercial Payables	221,688.00
Other payables of related parties (net)	8,316.00
Income tax and current participations	19,254.00
Current payables	73,791.00
Provisions	31,158.00
TOTAL CURRENT ASSET	**470,531.00**
NON CURRENT LIABILITIES	
Financial obligations	885,602.00
Liabilities of income tax and differed shares	367,490.00
Other liabilities	2,593.00
TOTAL NON CURRENT ASSET	**1,255,685.00**
TOTAL ASSET	**1,726,216.00**

Source: SMV

This information, Charter N° 2 Composition of Assets 2010 and Charter N° 3 Composition of Liabilities 2010, for the specialist of the Emerging Bank are not relevant from the financial analysis perspective. According to Fausto, this is because it is necessary to analyze the behavior of the company on a period of time, this being between 3 and 4 years. Because of this, Fausto requires the audited financial statements of the periods 2006, 2007, 2008 and 2009 with the purpose of processing the accounts and elaborating a credit report.

The financial statements of the Profit and Lost Statement and the Balance sheet of the last 5 years of DEPSA are shown on Charter N° 4 Income Statement and on Charter N° 5 Balance Sheet.

[6] Supervosiry agency of investment in energy and mining.

[7] The information shown had been obtained on the memories of the company and the web pages of the Stock Market of Lima-BVL and the Superintendence of Securities Market – SMV.

© 2013 Global Journals Inc. (US)

Charter No. 4 : Income Statement (thousands of dollars)

	2006	2007	2008	2009	2010
Net sales	1,293,308.00	1,290,877.00	1,389,236.00	1,563,921.00	1,618,644.00
Other operational incomes	24,356.00	58,593.00	49,785.00	66,744.00	93,391.00
Total gross revenue	**1,317,664.00**	**1,349,470.00**	**1,439,021.00**	**1,630,665.00**	**1,712,035.00**
Cost of sales (operationals)	-968,223.00	-943,955.00	-992,268.00	-1,139,940.00	-1,167,341.00
Other operational costs	-14,633.00	-41,865.00	-37,845.00	-52,264.00	-71,843.00
Total of operational costs	**-982,856.00**	**-985,820.00**	**-1,030,113.00**	**-1,192,204.00**	**-1,239,184.00**
Gross Income	**334,808.00**	**363,650.00**	**408,908.00**	**438,461.00**	**472,851.00**
Sales expenses	-68,428.00	-65,299.00	-58,140.00	-58,453.00	-61,201.00
Administrative expenses	-63,751.00	-56,148.00	-59,875.00	-63,485.00	-66,438.00
Profit (loss) on sale of assets	-	-952.00	13,316.00	-634.00	-117.00
Other incomes	15,612.00	18,452.00	11,203.00	12,165.00	11,656.00
Other expenses	-5,198.00	-12,062.00	-7,093.00	-4,459.00	-4,224.00
Operative income	**213,043.00**	**247,641.00**	**308,319.00**	**323,595.00**	**352,527.00**
Financial income	21,482.00	17,776.00	26,099.00	24,562.00	14,244.00
Financial expenses	-65,863.00	-72,021.00	-92,076.00	-78,245.00	-73,032.00
EBIT	**168,662.00**	**193,396.00**	**242,342.00**	**269,912.00**	**293,739.00**
Workers participation	-10,296.00	-10,449.00	-13,128.00	-14,566.00	-15,236.00
Income tax	-59,409.00	-61,075.00	-74,827.00	-84,728.00	-87,087.00
Net profit (loss) of ongoing activities	98,957.00	121,872.00	154,387.00	170,618.00	191,416.00
Net profit (loss) of exercise	**98,957.00**	**121,872.00**	**154,387.00**	**170,618.00**	**191,416.00**
Net profit (loss) basic for common share	**0.119000**	**0.166000**	**0.242000**	**0.270000**	**0.300000**
Net profit (loss)diluted per common share	**0.119000**	**2.327051**	**0.242000**	**0.270000**	**0.300000**

Source : SMV

© 2013 Global Journals Inc. (US)

Charter No. 5 : Balance Sheet (thousands of dollars)

	2006	2007	2008	2009	2010
ASSET					
CURRENT ASSET					
Cash and cash equivalent	18,808.00	16,605.00	34,321.00	45,169.00	158,548.00
Commercial receivables (net)	180,197.00	208,802.00	221,801.00	227,982.00	251,233.00
Other receivables of related parties (net)	5,635.00	3,061.00	1,969.00	1,784.00	1,922.00
Other receivables (net)	6,321.00	14,486.00	37,074.00	14,363.00	16,117.00
Inventory (net)	27,903.00	16,077.00	31,455.00	22,455.00	24,909.00
Expenses contracted in advance	4,775.00	1,679.00	2,752.00	3,001.00	4,299.00
TOTAL CURRENT ASSET	**243,639.00**	**260,710.00**	**329,372.00**	**314,754.00**	**457,028.00**
NON CURRENT ASSET					
Financial investments	118.00	3,901.00	12,276.00	9,392.00	10,946.00
*Other financial investments	5,822.00	-	-	-	-
Other receivables	-	3,446.00	5,709.00	1,798.00	990.00
Property, machinery and equipment (net)	1,937,906.00	1,945,725.00	2,020,245.00	2,107,664.00	2,171,321.00
Asset for Income Taxes and deffered shares	17,741.00	19,705.00	18,416.00	17,451.00	14,227.00
TOTAL NON CURRENT ASSET	**1,961,587.00**	**1,972,777.00**	**2,056,646.00**	**2,136,305.00**	**2,197,484.00**
TOTAL ASSET	**2,205,226.00**	**2,233,487.00**	**2,386,018.00**	**2,451,059.00**	**2,654,512.00**
LIABILITIES					
CURRENT LIABILITIES					
Bank overdraft	412.00	1,707.00	-	107.00	-
Financial obligations	205,280.00	260,336.00	151,447.00	84,865.00	116,324.00
Commercial payables	101,123.00	107,637.00	135,158.00	139,773.00	221,688.00
Other payables of related parties (net)	14,652.00	15,979.00	20,826.00	9,949.00	8,316.00
Income tax and current participations	78,045.00	27,202.00	29,248.00	15,049.00	19,254.00
Other payables	40,936.00	47,644.00	50,566.00	68,087.00	73,791.00
Provisions	13,774.00	13,072.00	32,361.00	32,456.00	31,158.00
TOTAL CURRENT LIABILITIES	**454,222.00**	**473,577.00**	**419,606.00**	**350,286.00**	**470,531.00**
NON CURRENT LIABILITIES					
Financial obligations	386,455.00	509,541.00	711,736.00	853,849.00	885,602.00
Liabilities of income tax and differed shares	481,957.00	434,260.00	410,242.00	389,519.00	367,490.00
Other payables	3,706.00	2,994.00	3,110.00	2,263.00	2,593.00
TOTAL NON CURRENT LIABILITIES	**872,118.00**	**946,795.00**	**1,125,088.00**	**1,245,631.00**	**1,255,685.00**
TOTAL LIABILITIES	**1,326,340.00**	**1,420,372.00**	**1,544,694.00**	**1,595,917.00**	**1,726,216.00**
NET EQUITY					
Capital	738,564.00	638,564.00	638,564.00	638,564.00	638,564.00
Unrealized income	118.00	-	-	-	-
Legal reserve	132,409.00	3,901.00	12,276.00	6,246.00	7,280.00
Other reserves	-	133,188.00	133,188.00	133,188.00	133,188.00
Retained earnings	7,795.00	37,462.00	57,296.00	77,144.00	149,264.00
TOTAL NET EQUITY	**878,886.00**	**813,115.00**	**841,324.00**	**855,142.00**	**928,296.00**
TOTAL LIABILITIES AND EQUITY	**2,205,226.00**	**2,233,487.00**	**2,386,018.00**	**2,451,059.00**	**2,654,512.00**

Source : SMV

V. Credit Lines

The company works with 4 local financial entities[8] with its principal bank Banco de Credito del Peru with more than 50% of their direct and indirect obligations with banks.

In addition, BBVA and Banco Interbank are relevant. The company also finances its obligations on the capital market (between 70% and 80%) since there they have good rates conditions that they obtain from investors. The principal products DEPSA uses on the financial market are: letters of guarantee, treasury operations, medium-term note and leasing transactions.

[8] Source: Risk centers

© 2013 Global Journals Inc. (US)

Fausto has access to the total amount of exposition with the bank and it is of US$ 180 MM, where 50% are letters of guarantee (tenders, complaints to SUNAT[9], others), and the other 50%is distributed on a similar way between the other three products, which mean what is important for DEPSA is to renew and extend the lines of the letters of guarantee and treasury operations. The other operations are being cancelled with no delay.

The amount of the letters of guarantee generate, for the bank, are commission incomes between 0.15% and 1% of the amount of the letter of guarantee. The treasury operations are mainly of exchange rate, since the company has to pay its obligation with a foreign currency and its incomes are mainly with the local currency.

VI. Questions

Fausto already has the whole information and has to present the report to the board, and you have to collaborate with the analysis doing the math, being the most important:

- Vertical and horizontal analysis
- Ratio analysis: solvency, liquidity and management.
- Dupont analysis

1. With this information, which are the strengths and weaknesses of Energy Distribution Company of Peru?
2. From the analysis, what does the numbers of the company show?
3. About the sources of financing of the company, where do they obtain most part of their resources?
4. Should the financial entities renew and extend the credit lines of the company?

Additionally, and since there is information, the student is require to make a referential review of the EVA.

References Références Referencias

1. Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. The Journal of Finance 23 (4), pp. 589-609.
2. Altman, Edward I. and Anthony Saunders (1997). "Credit Risk Measurement: Developments over the last 20 Years." Journal of Banking & Finance, 21 (11-12), pp. 1721-1742
3. Altman, E. I. and G. Sabato (2005). "Effects of the New Basel Capital Accord on Bank Capital Requirements for SMEs." Journal of Financial Services Research 28(1): 3.
4. Armstrong, C. S., J. E. Core, D. J. Taylor, and R. E. Verrecchia (2011). When does information asymmetry affect the cost of capital? Journal of Accounting Research 49 (1), 1-40.
5. Beaver, W. H., M. Correia, and M. F. McNichols (2010). Financial statement analysis and the prediction of financial distress. Foundations and Trends in Accounting 5 (2), 99-173.
6. Berger, A. N. and S. W. Frame (2005). Small Business Credit Scoring and Credit Availability. Working Paper Series No 10, Federal Reserve Bank of Atlanta.
7. Berger, A. N. and G. F. Udell (2004). A More Complete Conceptual Framework About SME Finance. World Bank Conference on SME: Overcoming Growth Constraints.
8. Bharath, S. T., J. Sunder, and S. V. Sunder (2008). Accounting quality and debt contracting. The Accounting Review 83 (1), 1-28
9. Chen, L., D. A. Lesmond, and J. Wei (2007). Corporate yield spreads and bond liquidity. Journal of Finance 62 (1), 119-149.
10. Credit Suisse, 1997. Creditrisk+: A credit risk management framework. Credit Suisse Financial Products.
11. Crouhy, M., Galai, D., Mark, R., 2000. A comparative analysis of current credit risk models. Journal of Banking & Finance 24, 59–117.
12. Damodaran, Aswath, Risk Management: A Corporate Governance Manual (September 23, 2010). Available at SSRN: http://ssrn.com/abstract=1681017
13. Damodaran, Aswath, Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE): Measurement and Implications (July 2007). Available at SSRN: http://ssrn.com/abstract=1105499
14. FASB (2010). Statement of Financial Accounting Concepts No. 8. Conceptual framework for financial reporting.
15. Fernandez, Pablo, Company Valuation Methods: The Most Common Errors in Valuations (February 28, 2007). Available at SSRN: http://ssrn.com/abstract=274973
16. Fernandez, Pablo, WACC: Definition, Misconceptions and Errors (September 22, 2011). Available at SSRN: http://ssrn.com/abstract=1620871
17. Fernandez, Pablo, EVA and Cash Value Added Do Not Measure Shareholder Value Creation (May 22, 2001). Available at SSRN: http://ssrn.com/abstract=270799
18. Lopez, J. A. and M. R. Saidenberg (2000). "Evaluating credit risk models." Journal of Banking and Finance 24: 151-165.
19. Página web del Ministerio de Energía y Minas y de OSINERGMIN.

[9] Peruvian taxes regulator.

© 2013 Global Journals Inc. (US)

20. Página web de Bolsa de Valores de Lima– www.bvl.com.pe y de la Superintendencia del Mercado de Valores (SMV) – www.smv.gob.pe
21. Rothschild, Michael and Joseph E. Stiglitz (1970). "Increasing Risk: I. A De…nition." Journal of Economic Theory, 2(3), pp. 225-243.
22. Varotto, S. (2011),"Liquidity risk, credit risk, market risk and bank capital," International Journal of Managerial Finance. 7 (2): 134 – 152
23. Zenios, S., Ziemba,W., 2007. Handbook of Asset and Liability Management: Applications and Case Studies. Handbooks in finance, Elsevier.

Annex No.1 – The electricity sector in Peru[10]

Regulatory framework of the Electricity Sector

Inside the most representative characteristics of the Peruvian regulatory model for the development of electric activities are:

- Segmentation in three activities: generation, transmission and distribution.
- Self-determination of generation prices (power and energy) for the electric supply to Free Users.
- Generator electricity sales to distributors to attend the Public Service of Electricity through: a) bilateral contracts with the Busbar Tariff that the article 47° of the Electricity Concessions Law is referred, or, b) firm price contracts, resulting from tenders referred to the Law N° 28832.
- The tariff transmission regulation and the distribution of every type of supplies.
- Private management of the interconnected electric system operations under efficiency principles, minimizing costs and quality guarantee and reliable supply of electricity.

Structure of the Electricity Sector

The electricity sector in Peru is divided in three sub-sectors: generation, transmission and electricity distribution. The **generation activities** can be developed by companies that generate electricity using hydraulic resources or geothermal or fuel. The **transmission activities** are generally developed by companies that transmit the energy produced by generation companies for the sale of this to third parties. The **distribution activities** of electricity are developed by distribution companies that acquire electricity from the generation companies for the sales of this to the final clients that can be free or regulated.

The Law of Electric Concessions establishes as the main principle the division of the activities that are from the electricity sector in a way that more than one activity (generation, distribution and transmission). This allows the existing companies that are related in different activities but the same company cannot do both two activities at the same time.

Under the terms of the Antimonopoly and Antioligopoly Law of the Electricity Sector, the vertical and horizontal integration of the activities mentioned before need to have a previous authorization in charge of the Free Competence Committee of the National Institute of Defense of Competition and the Protection of Intellectual Property (INDECOPI), when some of the target parameters established on the norm are overcome. Furthermore, the Law of Electric Concessions allows vertical integration on the cases of isolated systems where the same company is in charge of more than one activity.

When the electric power is transmitted from the generator to the distributor, is divided into two types of clients:

- *Regulated clients:* around 4.6 millions of users[11] (supplies) with a maximum demand less or equal to 250Kw per supply[12]. If the demand is between 250Kw and 2500Kw they freely choose if it is a regulated or a free client.
- *Free clients:* 258 big electricity consumer (important mining complexes, commercial and industrials) with a potential demand equal or superior to 2,500Kw[13].

Participants of the Electricity Sector

Ministry of Energy and Mines (MINEM): is a governing body of Energetic and Mining Sector that meets regulatory work. Has a mission to promote the sustainable and competitive development of energetic and mining activities ensuring the supply of energy in an effective and efficient way. Furthermore, they are in charge of enforcing the valid legal framework (Law of Electric Concessions) and its function is to conduct the medium and long term energetic politics oriented to the optimum use of the resources without prejudicing the environmental background. It is important to mention that MINEM is the only agency the power of ceding so they give concessions and authorization to participate on the electric business in the Country.

Supervision System Energy Investment: this system is composed by these institutions: Supervisory Agency of Investment in Energy and Mining (OSINERGMIN), which monitors, supervises and regulates the activities made by the energy sector, they regulate the tariffs and sets the different prices regulated by the electronic service; INDECOPI, is in charge of regulating free competence; and finally, the Deputy Manager Rate Regulation (GART), which is in charge of setting tariffs.

Committee on Economic Operation of the System (COES-SINAC): technical agency which

[10] At the moment of the study, at the beginning of 2011.

[11] According to the Ministry of Energy and Mines.

[12] According to the Ministry of Economy the regulated clients are 4'624,534.0

[13] Source: Pacific Credit Ratings. Sector report – Peru: Electricity Sector (17.01.2011).

© 2013 Global Journals Inc. (US)

purpose is to coordinate the operation at the minimum cost, security guarantee and quality of the provision of electric energy and the best use of energetic resources. Is composed by the generation power holders and transmission systems whose installations are interconnected on the National System.

Electric Companies: the electric companies are the ones that are in charge of generation, transmission or distribution of electric energy to the economic agents that demand that resource. According to the Ministry of Energy and Mines, there are 22 generator companies, 7 transmission companies and 23 distribution companies.

Regulators and Supervisor Agencies

The generation, transmission and distribution activities of electricity in Peru are regulated by the Law of Electric Concessions and its regulation. On the legal framework of the sector, there are two entities (The Ministry of Energy and Mines – MINEM – and the Supervisor Agency of Investment on Energy and Mining – OSINERGMIN -) in charge of look after the implementation and fulfillment of the applicable norms to the electric sector activities.

- MINEM establishes the general politic of the sector, regulates the matters related to environmental protection and the grant, supervision and termination or caducity of authorizations and concessions for the development of the generation, transmission and distribution of electricity activities.
- OSINERGMIN looks after the fulfillment of the dispositions contained on the applicable laws for the activities of the sector and sanction the ones that not meet what is regulated on the Regulation of Supervision of Energetic Activities.

Energy Demand

During 2010 the total production of energy of the system was of 35,764 GWh, which represents a growth of the electric demand at a national level of 9.4% with respect of 2009, according to the preliminary number published by the Ministry of Energy and Mines[14].

The demand of electric energy in Peru has grown in 8.1%, with respect of 2009, while the Distribution Company of Peru did in 7.4%.

A growth of the demand have been registered (energy purchase), without including toll of 7.0%. About the maximum potencies (without toll) had grown 5.04% with respect of the maximum demand registered in 2009.

Tariffs

According to the Law of Electric Concessions, for the supply of Public Electricity Service (Regulated Users) and Free Users, different princes have been established b OSINERGMIN[15].

The sales of electricity that are made by generation companies to the distribution companies fluctuates at the tariff applicable that was established by OSINERGIN for the respective point (Bar) of deliver (Bar Tariff). The Bar Tariffs are composed by the Price of Power Point in Bar, the Price of Energy in Bar, the charges of the principal system's transmission and the loss determine by each bar of the interconnected system. The tariffs in Bar are the maximum princes of electricity acquire by distribution companies that they can move to its Regulated Users.

[14] MINEM numbers.

[15] Peruvian regulator of the electric sector.

© 2013 Global Journals Inc. (US)

Annex No. 2: Components of the Regulated Tariff

Components		Participation (%)	Tariff	Regulation Periods
Generation	Energy	36.40%	Tariff in Bar	Is regulated annually and the periods tariffs are set between May and April of the next year. The evaluation considers the demand and offer of 2 years in the future over the base of the previous year at March 31st of every year.
	Power	14.10%		
Transmission	Principal System of Transmission	13.30%		
	Secondary System of Transmission	3.50%	Tariff for Secondary Systems of Transmission (SST)	Is regulated every 4 years. The last regulation entered into force in May 2007 and will end on 2011.
Distribution	Added value of distribution	32.70%	Tariff of distribution (VAD)	Is regulated every 4 years. The last regulation entered into force in November 2009 and will end on October 2013.
Total Regulated Tariff		**100.00%**		

Source : OISNERGMIN

© 2013 Global Journals Inc. (US)