

# A Research Paper on Analysis of Capital Structure Decisions of Specific Bio Power Generating Firms in the State of Andhra Pradesh and Telangana State

Sayyad Saadiq Ali, K. Hema Divya

**Abstract --** 'Biomass'- one of the most convenient sources of energy generation in the most populated countries like China, India etc. As the necessity of variety of food grains is growing up continuously due to the only reason of drastic increase in population globally, it directs towards upward trend in wastage generation also. By converting the biomass wastage in to the energy, it generally helps the society in dual ways that one is fulfilling the needs of energy requirements cyclically and second, environmental safeguard also. In the present study, the analyse of the capital structure decisions of few biomass energy generation companies in the state of Andhra Pradesh and Telangana State belongs to India is done. For the purpose, statistical techniques like mean, standard deviation and coefficient of variation are used. The results found that capital structure decisions have influence on performance of biomass energy generation firms of Andhra Pradesh and Telangana State.

**Keywords--** capital reserve, paid-up capital, revenue reserve, secured loans, unsecured loans

## I. INTRODUCTION

### A. capital structure definitions

"Capital structure is exclusively related with how the organization decides to allocate between its cash inflows into two broad components, a fixed component that is stretched to meet the obligations toward debt capital and a leftover component that belongs to equity shareholders"-P. Chandra.<sup>[1]</sup>

According to Gerestenberg, 'capital structure of a company refers to the mixture or make up of its capitalization and it includes all long term capital resources viz., loans, reserves, shares and bonds'.<sup>[1]</sup>

Keown et al. defined capital structure as, 'balancing the array of funds sources in an acceptable manner, i.e. in relative magnitude or in proportions'.<sup>[1]</sup>

### Objectives of the Study

To analyse the changes in the components of the capital structure of specified biomass energy generation firms of Andhra Pradesh & Telangana States of India.

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\* Correspondence Author

**Sayyad Saadiq Ali\***, Research Scholar, Department Of Commerce & Management, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur District, Andhra Pradesh, Pin- 522502.

**Dr. K.hema divya**, Associate Professor, Department Of Commerce & Management, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram,, Guntur District, Andhra Pradesh, Pin- 522502.

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## II. REVIEW OF LITERATURE

**Chengho Hsieh and Tibor Szarvas** have stated that, in an imperfect market where we cannot find healthy competition between sellers and buyers with respect to a targeted product, the optimal capital structure cannot be decided exactly and it may be fallen between any proportions of debt of 0 to 100% depends on the expected returns.<sup>[2]</sup>

**Dr. M Sekar, Ms. M. Gowri and Ms. G. Ramya**, from their research has concluded that whatever the profits earned by the firm Tata Motors was done by efficient design of capital structure. They found that in the financial year 2012-13 the firm has faced losses due to the reason of down trend in sales, lower sales realization, high depreciation, high amount of production and high stock management. They also found that firm value and equity value are positively correlated, debt value and firm value are also positively correlated and finally weighted average cost of capital and net worth are negatively correlated.<sup>[3]</sup>

**Guihai Huang and Frank M. Song** have narrated in their article from China's economy perspective. They have found that government domination or financial institution domination in capital share does not influence on value of the firm and Chinese firms believe that higher debt content leads to more tax effect therefore they mostly preferred less amount of long term borrowings in their structure of the capital.<sup>[4]</sup>

**Jiaxu Jiang, Futang Dong and Bingxin Dul** have found that there are no exact reasons for designing the capital structure especially in China's medium and small scale enterprises. There are so many drawbacks of designing of such capital structures like low contribution from internal financing, limiting to dependability on single external financing source and finally huge dependability on short term liabilities.<sup>[5]</sup>

**Kinga Mazur** in his research has found that actually companies are not having any particular target of inserting debt into their capital structure. When there is a paucity of equity funds, generally they move towards debt collection for fulfilling their capital needs. This statement was already proposed by "pecking order theory" and evidences shown from polish firms collected for the purpose of analysis have supported the theory.<sup>[6]</sup>

**Michael Faulkender and Mitchell A. Petersen** in their research have observed that in case of imperfect markets the cost of designing the capital structure is more costly because the risk of cost is affected by not only the operating ability of the firm but also depends on the monitoring cost of verifying the viability of their projects.

According to their study it is clear that the firms with good rating of collecting public debt can enjoy less cost when compare to the firms depend on only collecting private debt.<sup>[7]</sup>

**Murray Z. Frank and Vidhan K. Goyal** have encompassed that six factors mostly influence the leverage of the firm. A) Industry median leverage: the median firm in the whole industry generally with high leverage exhibits high leverage B) Tangibility: the company with more amount of tangible assets obviously exhibit high leverage C) Profits: Firms with more profits generally have lower level of leverage D) Firm size: those firms with bigger size (in terms of assets) have higher level of leverage E) Market to book assets ratio: firms with higher market to book assets ratio pose to lower level of leverage F) Expected inflation: when expected inflation is high automatically firms tend to have high leverage.<sup>[8]</sup>

**Pietro Gottardo and Anna Maria Moisello** have observed that low-leverage firms have generally occupied higher average market-share, and, at the same time, they are more profitable and hold larger cash balances. They observed that a firm's market-share is the result of factors like related to technologies, output quality, managerial characteristics and competing firms' behaviour stockpiling, low to moderate external leverage levels, the efficient use of internal capital markets, a competitive position in the commercial trade credit, debt markets and a strict control on inventory levels.<sup>[9]</sup>

**Philip G. Berger, Eli Ofek and David L. Yermack** from their analysis have stated that leverage of a firm is lower when top managers of the firm have long tenure in the firm, have weak stock and compensation incentives and does not face strong monitoring from board of the directors, these managers use leverage to inflate the voting power of their equity.<sup>[10]</sup>

**Rataporn Deesomsak, Krishna Paudyal and Gioia Pescetto** in their article have stated that country economic policies which favours external investors like debts from lenders will tend to increase their contribution in the capital structure proportions. The attractiveness of external debt is also dependent on volume of ownership held by the owner.<sup>[11]</sup>

**Sreedhar T. Bharath, Paolo Pasquariello and Guojun Wu** have stated that companies generally prefers to procure the capital initially in the form of debt then finally prefers equity capital to cover their required capital. According to their study it is clear that due to the reason of information asymmetry gap between managers and equity investors, generally the capital structure merely covered by debt capital in a maximum extent than equity capital.<sup>[12]</sup>

**Tarek I. Eldomyaty and Mohamed A. Ismail** has tried to find the influence of the following variables on the determination of capital structure. They are long term debt ratio, short term debt ratio, target debt ratio, average industry leverage, structure of tangible assets, relative tax effects, growth of the industry, investment growth opportunities, bankruptcy risk, agency costs, industry classification, size of the firm, profitability, financial flexibility, liquidity position, interest rates, timing effect and transaction costs.<sup>[13]</sup>

### III. INDUSTRY PROFILE

Biomass energy generation industry was introduced in Andhra Pradesh so earlier to its bifurcation into Andhra

Pradesh and Telangana State. As of 2010, totally 40 firms were established with capacity between 1MW\* – 12 MW. In which most of them are capacitated with 6 mw.

According to the data available from ministry of corporate affairs, only 28 plants are in active condition at this stage. From which the sample is chosen for analysis by considering the continuity of operations, data availability and finally according to the title.

#### *Companies' profile*

Rithwik Power Projects Limited is a 6.0 MW power production loaded biomass related company. It was established in the year of 2002 in the state of Andhra Pradesh, a 1 1/2 decade long back to bifurcation in the district of Khammam. Now it is located in Telangana States Jyoti Bio Energy Limited is a 4.5 MW power production capacity loaded biomass oriented company. It was established in the year of 2000, in Prakasham district of Andhra Pradesh. Satya Maharshi Power Corporation Limited is a 6.0 MW power production capacity loaded biomass basis company. It was established in the year of 2004, in Guntur district of Andhra Pradesh.

### IV. RESEARCH METHODOLOGY

The standard deviation of a component reveals that how far it deviates from its mean value and coefficient of variation reveals that minimum values indicate less variation from aggregate values.

**A. Period of Study--** 2008-09 to 2015-16

#### **B. Sample selection**

Out of 40 firms 3 firms are taken into consideration for analysis according to the title of the article and data availability.

#### **C. Limitations of the study**

Only three firms are being considered for analysis due to the ready availability of financial data up to 2017-18.

### V. INTRODUCTION ABOUT CAPITAL STRUCTURE WITH RESPECT TO BIOENERGY FIRMS

Capital structure enables the viewer to know about the firm's broad strategy. It generally demonstrates the ability of its existence and mode of opportunities the company can has in the market and the efficiency of it to grab them in a timely basis manner. A sound capital structure makes the company to withstand on its own strength without support of any external superiority and it will make the firm to plan for its own vision without bringing manipulations in their objectives. All biomass power production firms are unlisted and privately owned firms either established by a single owner or by the form of partnership by several individuals. So as usually, they cannot offer shares to the public as per the guidelines of SEBI. So definitely they have limited scope to broaden their capital structure skeleton to collect the required amount of investment to finance for the establishment of the firm. They can procure the fund through either complete own fund or through capital reserve & revenue reserve or by the way of debt collecting from banks & financial institutions.

Better performing firms are still preferring debt capital and less performing firms prefer still to issue equity/inside fund. [14]  
\*MW= mega watt

**VI. ANALYSIS & INTERPRETATION** A.

**Analysis & interpretation of Rithwik Power Projects Private Limited**

**Table1: Components of the capital structure of Rithwik Power Projects Limited for the period of 2008-09 To 2017-18 (in lakhs)**

Details		Paid-up capital	Capital reserve	Revenue reserve	Total owned fund	Secured loans	Unsecured loans	Total
2008-09	Rs.	800.00	0.00	-96.13	703.87	608.24	2243.20	3555.31
	%	22.50	0.00	-2.70	19.80	17.11	63.09	100.00
2009-10	Rs.	800.00	0.00	-92.06	707.94	1361.55	1325.15	3394.64
	%	23.56	0.00	-2.72	20.84	40.11	39.04	100.00
2010-11	Rs.	800.00	0.00	-149.74	650.26	1341.25	1325.15	3316.66
	%	24.12	0.00	-4.51	19.61	40.44	39.95	100.00
2011-12	Rs.	800.00	0.00	-157.96	642.04	597.00	1373.77	2612.81
	%	30.62	0.00	-6.04	24.58	22.85	52.58	100.00
2012-13	Rs.	800.00	0.00	-387.73	412.27	543.21	1035.37	1990.85
	%	40.18	0.00	-19.47	20.71	27.30	52.02	100.00
2013-14	Rs.	800.00	0.00	-389.03	410.97	326.04	553.83	1290.84
	%	61.97	0.00	-30.14	31.83	25.25	42.92	100.00
2014-15	Rs.	800.00	0.00	-245.34	554.66	150.55	553.83	1259.04
	%	63.54	0.00	-19.49	44.05	11.96	43.99	100.00
2015-16	Rs.	800.00	0.00	39.18	839.18	250.15	703.83	1793.16
	%	44.61	0.00	2.18	46.79	13.95	39.25	100.00
Mean		800.00	0.00	-184.85	615.15	647.25	1139.27	2401.66
Std. Dev.		0.00	0.00	138.147	148.87	459.34	564.25	946.97
CV		0.00	ND	-74.7344	24.201	70.97	49.53	39.43

[15]Source : Extracted and Calculated from annual reports of Rithwik Power Projects Limited for the above years & mca.gov.in

From the table 1, it is clear that the capital structure of Rithwik Power Projects Limited is having the components in capital structure are paid-up capital, capital reserve, revenue reserve, secured loans and unsecured loans. The paid-up capital is the capital contributed by the owners themselves. The paid-up capital for entire time period of analysis is constant at Rs.800.00 lakhs. The capital reserve is the fund created to replace the old/damaged fixed assets with new fixed assets. There is no place for capital reserve in this capital structure. The revenue reserve is the reserve created from profits for the purpose of general reserve, employee’s welfare fund, general insurance fund and family security fund for employees. The revenue reserve has been going on decreasing almost continuously from Rs.-96.13 lakhs in 2008-09 to Rs.-389.03 lakhs in 2013-14 and then in the year of 2014-15 to 2015-16 it was turned into upward trend from Rs.-245.34 lakhs to Rs.39.18 lakhs respectively. The total owned fund also has shown downward trend due to the reason of continuous decrease in the revenue reserve from 2009-10 to 2013-14 and from Rs.703.87 lakhs to Rs.410.97 lakhs respectively. The reason for the above down trend is due to the excessive cost incurred for production of electricity over the revenue obtained from the sale of electricity. The state government has not been increasing the price per unit electricity purchasing from the

biomass energy generating firms and not issuing the due bills immediately to the suppliers. The next component of capital structure of Rithwik Power Projects Limited is secured loans means usually offer lower interest rates, higher borrowing limits and longer repayment terms than unsecured loans. If the firm is unable to repay a secured loan, the lender has recourse to the collateral the firm have pledged and may be able to sell it to pay off the loan. Due to the paucity of own funds enough to establish total firm and its operations, the capital structure of Rithwik Power Projects Limited is mostly depends upon the external borrowings. 80.20% of total capital was procured from external borrowings and only 19.80% of fund was collected through internal sources. The trend of secured loans went on upward direction from 2008-09 to 2009-10 and from Rs.608.24 lakhs to Rs.1361.55 lakhs respectively, then the trend down falling from 2010-11 to 2014-15 and from Rs.1341.25 lakhs to Rs.150.55 lakhs respectively and then again raised in the year of 2015-16 to Rs.250.15 lakhs. The next item of capital structure belongs to Rithwik Power Projects Limited is unsecured loans. Unsecured loans are the opposite of secured loans.



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Lenders take more of risk by making such a loan, with no property or assets to recover in case of default, which is why the interest rates are considerably higher. If the firm has been turned down for unsecured credit, it may still be able to obtain secured loans, as long as it has something of value or if the purchase it wish to make can be used as collateral. By observation, it is clear that out of total borrowings, a major portion was contributed by unsecured loans only. The trend has been shown a downward direction from 2008-09 to 2010-11 and from Rs.2243.20 lakhs to Rs.1325.15 lakhs

respectively and then upward trend in the year of 2011-12 to Rs.1373.77 lakhs, then again downward trend from 2012-13 to 2014-15 and from Rs.1035.37 lakhs to Rs.553.83 lakhs respectively, then again followed by an upward trend of Rs.703.83 lakhs in the year of 2015-16. From the totals of capital structure for each and every year, it is clear that, year by year the total capital was decreased from 2008-09 to 2014-15 and from Rs.3555.31 lakhs to Rs.1259.04 lakhs respectively then in the year 2015-16 it was again raised to Rs.1793.16 lakhs, a considerable position.

## *B. Analysis & interpretation of capital structure of Jyoti Bio Energy Limited*

**Table 2: Components of the capital structure of Jyoti Bio Energy Limited for the period of 2008-09 To 2017-18 (in lakhs)**

Details		Paid-up capital	Capital reserve	Revenue reserve	Total owned fund	Secured loans	Unsecured loans	Total
2008-09	Rs.	436.63	0.00	2852.33	3288.96	315.60	0.00	3604.56
	%	12.11	0.00	79.13	91.24	8.76	0.00	100.00
2009-10	Rs.	436.63	0.00	2971.90	3408.53	210.31	0.00	3618.84
	%	12.06	0.00	82.12	94.18	5.82	0.00	100.00
2010-11	Rs.	436.63	0.00	3020.96	3457.59	105.31	0.00	3562.90
	%	12.25	0.00	84.79	97.04	2.96	0.00	100.00
2011-12	Rs.	436.63	0.00	3033.23	3469.86	0.00	0.00	3469.86
	%	12.58	0.00	87.42	100.00	0.00	0.00	100.00
2012-13	Rs.	436.63	0.00	3104.91	3541.54	0.00	0.00	3541.54
	%	12.33	0.00	87.67	100.00	0.00	0.00	100.00
2013-14	Rs.	873.26	0.00	3267.22	4140.48	0.00	0.00	4140.48
	%	21.10	0.00	78.90	100.00	0.00	0.00	100.00
2014-15	Rs.	873.26	0.00	3383.20	4256.46	0.00	0.00	4256.46
	%	20.52	0.00	79.48	100.00	0.00	0.00	100.00
2015-16	Rs.	873.26	0.00	3494.39	4367.65	0.00	0.00	4367.65
	%	19.99	0.00	80.01	100.00	0.00	0.00	100.00
Mean		600.37	0.00	3141.02	3741.38	78.90	0.00	3820.29
Std. Dev.		225.98	0.00	219.98	435.31	122.54	0.00	367.66
CV		37.64	ND	7.00	11.64	155.31	ND	9.62

<sup>[15]</sup>Source : Extracted and Calculated from annual reports of Jyoti Bio Energy Limited for the above years & mca.gov.in

From the table 2, it is clear that the capital structure of Jyoti Bio Energy Limited is having the components in capital structure are paid-up capital, capital reserve, revenue reserve, secured loans and unsecured loans. The paid-up capital from 2008-09 to 2012-13 time period of analysis is constant at Rs. 436.63 lakhs and increased to Rs.873.26 lakhs from 2013-14 to 2015-16 and maintained constantly. There is no place for capital reserve in this capital structure also. The revenue reserve was going on increasing continuously in 2008-09 from Rs.2852.33 lakhs to Rs.3494.39 lakhs in 2015-16. The total owned fund also shown upward trend from 2008-09 to 2015-16 and from Rs.3288.96 lakhs to Rs.4367.65 lakhs continuously. The reason for the above upward trend is due to the additional paid-up capital was included in the year of 2013-14 and continuous increase in revenue reserve from 2008-09 to 2015-16. The next component of capital structure of Jyoti Bio Energy Limited is secured loans. Due to almost enough

capacity of own funds to establish the firm and its operations, the capital structure of Jyoti Bio Energy Limited depends upon the external borrowings for minimum proportion only. 8.76% of total capital was procured from external borrowings and 91.24% of fund was collected through internal sources in the year of 2008-09. The trend of secured loans went on downward direction from 2008-09 to 2010-11 and from Rs.315.60 lakhs to Rs.105.31 lakhs respectively, then fatherly the firm did not depend on external borrowings from 2011-12 to the end period of the analysis. The next item of capital structure belongs to Jyoti Bio Energy Limited is unsecured loans. From the table 2 it is clear that Jyoti Bio Energy Limited has not been showing interest on unsecured loans throughout the period of study.

From the totals of capital structure for each and every year, it is clear that the total capital was increased from 2008-09 to 2009-10 and from Rs.3604.56 lakhs to Rs.3618.84 lakhs respectively then in the year 2010-11 it was going to start decrease from Rs.3562.90 lakhs to Rs.3469.86lakhs in the

year 2011-12. The total spent capital was again increased from 2012-13 to 2015-16 and from Rs.3541.54 lakhs to Rs.4367.65 lakhs respectively.

**C. Analysis & interpretation of capital structure of Satya Maharshi Power Corporation Limited**

**Table 3: Components of the capital structure of Satya Maharshi Power Corporation Limited for the period of 2008-09 To 2015-16 (in lakhs)**

Details		Paid-up capital	Capital Reserve	Revenue reserve	Total owned fund	Secured loans	Unsecured loans	Total
2008-09	Rs.	1542.71	0.00	0.00	1542.71	175.45	1942.22	3660.38
	%	42.15	0.00	0.00	42.15	4.79	53.06	100.00
2009-10	Rs.	1542.71	0.00	0.00	1542.71	0.00	1509.99	3052.70
	%	50.53	0.00	0.00	50.53	0.00	49.47	100.00
2010-11	Rs.	1542.71	0.00	-1112.13	430.58	1149.04	495.19	2074.81
	%	74.35	0.00	-53.60	20.75	55.38	23.87	100.00
2011-12	Rs.	1542.71	0.00	-1616.05	-73.34	1015.70	1424.29	2366.65
	%	65.18	0.00	-68.28	-3.10	42.92	60.18	100.00
2012-13	Rs.	1542.71	0.00	-2273.41	-730.70	885.07	632.51	786.88
	%	196.05	0.00	-288.91	-92.86	112.50	80.36	100.00
2013-14	Rs.	1542.71	0.00	-2784.85	-1242.14	778.35	1697.88	1234.09
	%	125.00	0.00	-225.66	-100.66	63.08	137.58	100.00
2014-15	Rs.	1542.71	0.00	-2552.05	-1009.34	653.33	1544.99	1188.98
	%	129.76	0.00	-214.65	-84.89	54.95	129.94	100.00
2015-16	Rs.	1542.71	0.00	-2063.65	-520.94	466.67	1559.44	1505.17
	%	102.49	0.00	-137.10	-34.61	31.00	103.61	100.00
Mean		1542.71	0.00	-1550.27	-7.56	640.45	1350.81	1983.71
Std. Dev.		0.00	0.00	1090.03	1090.03	402.69	511.33	997.41
CV		0.00	ND	-70.31	-14423.20	62.88	37.85	50.28

<sup>[15]</sup>Source : Extracted and Calculated from annual reports of Satya Maharshi Power Corporation Limited for the above years & mca.gov.in

From the table 3, it is clear that the capital structure of Satya Maharshi Power Corporation Limited is having the components in capital structure are paid-up capital, capital reserve, revenue reserve, secured loans and unsecured loans. The paid-up capital from 2008-09 to 2015-16 time period of analysis is constant at Rs.1542.71 lakhs. There is no place for capital reserve in this capital structure also.

The revenue reserve was not allocated in 2008-09 and in 2009-10 as a component of capital structure. Due to the losses faced by the firm in the year of 2010-11 the revenue reserve was in a negative condition and at Rs.-1112.13 lakhs, this negative trend was continuous and increased up to the year of 2013-14 and remarked at Rs.-2784.85 lakhs, and finally this down trend was controlled in the year of 2014-15 and was about Rs.-2552.05 lakhs and decrease to Rs.-2063.65 lakhs in the year of 2015-16.

The total owned fund also shown constant due to the reason of only one source of paid-up capital from 2008-09 to 2009-10 and was at Rs.1542.71 lakhs. A huge down trend started from 2010-11 to 2013-14 and from Rs.430.58 lakhs to Rs.-1242.14 lakhs respectively again an upward trend was started in the year of 2014-15 and continued up to 2015-16 and from Rs.-1009.34 and Rs.-520.94 lakhs respectively.

The next component of capital structure of Satya Maharshi Power Corporation Limited is secured loans. From the table 3, it has been observed that Rs.175.45 lakhs in the year 2008-09 and started down trend up to the year of 2009-10 to Rs.0.00, then again raised in the year 2010-11 to Rs.1149.04

lakhs. Then a continuous down trend followed from 2011-12 to 2015-16 and from Rs.1015.70 lakhs to Rs.466.67 lakhs respectively. The next item of capital structure belongs Satya Maharshi Power Corporation Limited is unsecured loans. From the table 3 it is clear that a down trend from 2008-09 to 2010-11 and from Rs.1942.22 lakhs to Rs.495.19 lakhs respectively then a simultaneous up and down trends have been observed from 2011-12 to 2015-16 respectively.

From the totals of Satya maharshi Power Corporation Limited it has been observed that a continuous down trend from 2008-09 to 2010-11 and from Rs.3660.38 lakhs to Rs.2074.81 lakhs respectively, again raised to Rs.2366.65 lakhs in the year of 2011-12 and then from the year of 2012-13 we can observe up and down trends up to 2015-16.

The mean values of paid-up capital, revenue reserve, secured loans and unsecured loans of Rithwik Power Projects Private Limited are Rs.800.00 lakhs, Rs.-184.85 lakhs, Rs.647.25 lakhs and Rs.1139.27 lakhs respectively.

The overall mean value of Rithwik Power Projects Private Limited is Rs.2401.66 lakhs with coefficient of variation of 39.43%. The mean values of paid-up capital, revenue reserve and secured loans of Jyoti Bio Energy Limited are Rs.600.37 lakhs, Rs.3141.02 and Rs.78.90 lakhs respectively. The overall mean value of in Jyoti Bio Energy Limited is Rs.3820.29 lakhs with coefficient of variation of 9.62 %.



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The mean values of paid-up capital, revenue reserve, secured loans and unsecured loans Satya Maharshi Power Corporation Limited are Rs.1542.71 lakhs, Rs.-1550.27 lakhs, Rs.640.45 lakhs and Rs.1350.81 lakhs respectively. The overall mean value of Satya Maharshi Power Corporation Limited is Rs.1983.71 lakhs with coefficient of variation of 50.28%.

## VII. FINDINGS, SUGGESTIONS & CONCLUSIONS

Firm	Suggestions
Rithwik Power Projects Limited	The firm needs to downsize its debt content in total capital composition.
Jyoti Bio Energy Limited	The firm needs to increase the debt content to increase the financial leverage.
Satya Maharshi Power Corporation Limited	The firm needs to downsize its debt content in total capital composition.

The comparative analysis of capital structure reveals that, in Rithwik Power Projects Private Limited and Satya Maharshi Power Corporation Limited, the major components of capital structure were loans from external sources and owner's fund where as scenario is quite different in Jyoti Bio Energy Limited where, owner's capital and revenue reserve are the major components of capital structure. Almost entire capital was procured from the source of internal means only in Jyoti Bio Energy Limited. From the calculations it can be noted that the variation of Jyoti Bio Energy Limited is minimum with respect to two other firms. The main drawback of these firms is either going through internal funds or by the way of external debts. It is very critical to find suitable investor who offers debt with minimum interest rates. So it is bit confusion to the firms to go with either frequent short term debts or a huge long term debt. Firms are better informed about their growth opportunities than outside investor.<sup>[14]</sup>

From the table 1, it has been observed that Rithwik Power Projects Private Limited was unable to go for fulfilling their required capital by issuing equity shares and preference shares. The only outside source of capital is debt either collateral or unpledged. Based on the requirement of energy generation stabilization strategies, sometimes the firm goes with huge amount of borrowings and sometimes stick to fewer amounts. The drawbacks of Rithwik Power Projects Limited in the sense of capital structure were reasoned by its operational inefficiencies only. And it has been observed by its apportionment of revenue reserves clearly.

From the table 2, it has been observable that Jyoti Bio Energy Limited was unable to go for fulfilling their required capital by issuing equity shares and preference shares. The only outside source of capital is debt either collateral or unpledged. Due to its healthy operating profits position, it has been creating a definite portion to revenue reserve, hence further expanded its paid-up capital significantly and due to the reason of high interest rates for both secured and unsecured loans, they preferred maximum capital from internal sources only.

From the table 3, it has been noted that, Satya Maharshi Power Corporation Limited needs to strengthen their

internal operations of producing the electricity, efficient use of raw materials, fund apportionment to different perspectives, debt management and receivables management are the main focusing areas to turn their firm into a profits gaining organisation.

From the table 1, it has found that standard deviation of Rithwik Power Projects Private Limited is at middle level of other two firms. From individual independent variables consideration, the standard deviation of unsecured loans is higher than other variables.

From table 2, it has found that standard deviation of Jyoti Bio Energy Limited is smaller than other two firms of consideration and paid-up capital has higher standard deviation than other variables of capital structure of Jyoti Bio Energy Limited.

From table 3, it has found that standard deviation of Satya Maharshi Power Corporation Limited has higher level of standard deviation among the three firms and revenue reserve has higher standard deviation than other individual variables of capital structure.

From the above three tables, it is clear that co-efficient of variation of Satya Maharshi Power Corporation Limited is greater than other two firms. From individual variables consideration, co-efficient of revenue reserve is higher in case of Rithwik Power Projects Private Limited, in Jyoti Bio Energy Limited secured loans has greater amount of co-efficient of variation and in Satya Maharshi Power Corporation revenue reserve has higher deviation than other independent variables.

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### AUTHORS DETAILS



Research Scholar, <sup>1</sup>Department of Commerce & Management, <sup>1</sup>Koneru Lakhmaiah Education Foundation (KLEF), <sup>1</sup>Green fields, <sup>1</sup>Vaddeswaram, <sup>1</sup>Guntur, <sup>1</sup>PIN- 522502, <sup>1</sup>Andhra Pradesh, <sup>1</sup>Assistant Professor, <sup>1</sup>Marri Laxman Reddy Institute of Technology & Management, <sup>1</sup>saadiqalisayad@gmail.com, <sup>1</sup>Phone no. +91-9553692646;

SECOND AUTHOR: <sup>2</sup>Associate Professor, <sup>2</sup>Department of Commerce & Management, <sup>2</sup>Koneru Lakhmaiah Education Foundation (KLEF), <sup>2</sup>Green fields, <sup>2</sup>Vaddeswaram, <sup>2</sup>Guntur, <sup>2</sup>PIN- 522502, <sup>2</sup>Andhra Pradesh, <sup>2</sup>divya10\_mba@kluniversity.in India  
<sup>2</sup>Phone no- +91-9603742715