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Original Research Article

Overview of Financial Efficiency in India's Power Sector

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Abstract

Power is an important tool for economic growth of the country. Power is vital for every form of human activity-domestic, agricultural and industrial infrastructure, such as telecommunication and transport. The demand for electricity in India is enormous and is growing steadily. This growth has been slower than a country's economic growth. The big challenge of the power industry is to balance the demand and supply of electricity. Financial management involves planning, organizing, directing, and controlling the financial activities of an organization. Its primary goal is to maximize shareholder wealth and ensure the efficient use of resources. Financial efficiency refers to how effectively an organization utilizes its resources to generate revenue or profits. It involves minimizing costs and maximizing output or outcomes relative to inputs. The financial efficiency of India's power sector is a critical aspect of its energy infrastructure, impacting both economic growth and sustainability. The main needs of the study are the source and use of funds of the company and how to evaluate the financial performance of the company. The objective of this study is to critically evaluate and assess the financial performance of Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati.

Keywords: Economic Growth, Financial Efficiency, Power Industry, India

1. INTRODUCTION

Infrastructure services upgrade the government assistance of the individuals, encourage financial development and profitability, and help to improve the quality of life in general. In this manner, it has been said that the framework resembles the wheels of monetary Activity. Its disappointment, particularly in significant territories, for example, power, diminishes profitability and drastically influences the personal satisfaction. Infrastructure has gotten remarkably significant for a country's economic improvement. As it gives the fundamental auxiliary establishment to it. Furthermore, it is unmistakably more so on account of creating nations of the world as their economic improvement, which had been disregarded for long, for different reasons, relies particularly on their raising a viable and proficient foundation which can react to request and offer the necessary types of assistance quickly and productively. Successful and offer the necessary types of services quickly and effectively. Powerful assistance is the brilliant proportion of infrastructure development There is each motivation to accept that in the creating nations today nations today's interests in the framework have been inappropriate regardless of significant expense, and thusly have not been rendering the administrations expected of its appropriately.

The Economic advancement of any nation independent of its size essentially relies on the improvement of the force area, which in reality is a key marker of the country's general financial advancement. Force is focal not exclusively to all family unit exercises, however to monetary improvement too. Actually, it is the fuel of financial advancement in all divisions, farming and modern as well as completely united territories. Individuals' way of life relies upon their utilization of vitality when all is said in done and access to power specifically. It is the main consideration on which the strategy producers need to truly concentrate and direct their endeavours. Contrasted and a few different nations of the world, India is falling behind numerous as far as creation just according to capita utilization of vitality Economic progress relies particularly on how effectively and productively a nation oversees its power sector. Horticulture, industry and other core areas of monetary at last depend on their advancement and accomplishment on the accessibility of sufficient power continually and uninterruptedly consistently. How significant is power

utilization in the economic advancement a nation, aside from different components, might be mulled over known by taking its power utilization. In the event that power utilization by all parts supposedly increases, at that point the record of eco-improvement as a proportion of its encouraging is additionally found to increment. Generally, the connection between the utilization of power and the development of the economy is taken as a proportion of progress. The production of electricity is a fundamental pointer of a nation's size and level of improvement in all circles. A few nations are sending out power for a huge scope and others are bringing in it for an enormous scope. In India, the majority of the utilization is by the farming part, where the pace of income is extremely low. Extending the inventory of power to fulfil the developing need of consistently expanding urbanized Indian economy without bringing about unsatisfactory expenses is a significant test to it.

Financial Management

Financial management is the strategic planning, organization, and control of a company's financial resources to achieve its business objectives. It encompasses activities such as budgeting, investing, and managing cash flow to ensure the efficient use of capital. Financial management is the process of managing a company's financial resources, including the acquisition, allocation, and effective utilization of funds to achieve the organizations goal's the primary objectives of financial management are to maximize the value of the firm, ensure long-term financial stability goals of the organization. Financial management encompasses the planning, organizing, directing, and controlling of financial activities within an organization. It involves managing financial resources to achieve the organization's financial goals and objectives effectively.

1.1 Financial Efficiency

Financial efficiency is the key to achieving financial stability and growth. This exhibition will cover essential strategies to help you optimize your finances, from budgeting and expense management to maximizing savings and investments. Financial efficiency refers to the optimal use of a company's financial resources to achieve its goals and maximize returns. It involves making informed decisions about investing, budgeting, and cost management to enhance profitability and long-term sustainability. Financial efficiency is concerned about the intense of a business which exploit its financial resources to make gross income.

Financial efficiency involves the effectiveness of purchasing, producing, pricing, financing besides to make key financial decisions. It is the internal course of action that leads to output and primarily focuses on the way to achieve the desired end. As per the saying of Peter Drucker "Doing the things in right way is efficiency." This means that the completion of goal with lowest sacrifice of available scarce resources. Financial efficiency is a measure of organization's ability to transform its financial resources in achieving mission related activities regardless of individual mission or structure. It assesses how competently a business has been managed in certain tradeoff especially between risk and return, liquidity and profitability.

At a micro level, financial efficiency involves the analysis of the efficiency with which resources are properly allocated among competing users at a given time. It is a management tool for judging the performance of a company, and the levels of profitability, productivity, liquidity, and capital strength can be considered the ultimate evidence of financial efficiency. Conversely, it is worth noting that in some cases, reasonable profits may mask inefficiencies, as good financial efficiency may be masked by a lack of profits. Simply put, efficiency is about getting more performance from the same resources or getting the same performance from fewer resources. It shows the relationship between the resources invested in a company and the results obtained from it. Financial efficiency measures help a company achieve organizational objectives with minimum available resources and gain competitive advantage over rival companies. Financial efficiency refers to how well an organization manages its resources to achieve its financial goals and objectives while minimizing waste and maximizing output. It is a measure of how effectively a company utilizes its assets and liabilities to generate profit and increase shareholder value.

1.2 The Importance of Financial Efficiency Analysis

- **Improved Decision Making:**

Financial efficiency analysis provides valuable insights that inform better strategic decisions, leading to more effective resource allocation and enhanced financial performance.

- **Cost Optimization:**

By identifying areas for cost reduction and process improvements, financial efficiency analysis helps companies streamline operations and improve their bottom line.

- **Competitive Advantage:**

Achieving financial efficiency can give companies a competitive edge, allowing them to offer more competitive pricing, invest in innovation, and outperform their peers.

1.3 Need for Financial Efficiency Analysis

Market volatility and recent high-profile corporate bankruptcies have brought the need for financial analysis into the spotlight more than ever before. In the information age, efficiency analysis enables company management to respond quickly to dynamic market conditions. It also enables managers to proactively address external and internal threats and weaknesses in their environment. It is essential for companies to demonstrate financial efficiency as

transparently as possible to drive value creation for stakeholders. There are many financial lessons that can be learned from analyzing financial efficiency. Market volatility and recent high-profile corporate bankruptcies have brought the need for financial analysis into the spotlight more than ever before. In the information age, efficiency analysis allows company management to respond quickly to dynamic market conditions. It also allows managers to proactively respond to external and internal threats and environmental weaknesses. It is important for companies to demonstrate financial efficiency as transparently as possible to drive value creation for stakeholders. Analyzing financial efficiency can provide a number of financial insights.

2. Power Scenario in India

Power is among the most critical components of infrastructure, crucial for the economic growth and welfare of nations. The existence and development of adequate power infrastructure is essential for sustained growth of the Indian economy. The fundamental principle of India's power industry has been to provide universal access to affordable power in a sustainable way. The Ministry of Power has made significant efforts over the past few years to turn the country from one with a power shortage to one with a surplus by establishing a single national grid, fortifying the distribution network, and achieving universal household electrification. India's energy sector is one of the most diverse in the world. Power generation sources range from conventional sources such as coal, lignite, natural gas, oil, hydroelectricity, and nuclear energy to viable non-conventional sources such as wind, solar, agriculture, and domestic waste. The country's demand for electricity has been growing rapidly and is expected to continue to do so in the coming years. To meet the country's growing electricity demand, installed generating capacity needs to be significantly expanded. India ranked 4th in wind and solar power generating capacity and 4th in renewable energy installed capacity in 2021. India is the only G20 country that is on track to meet the goals of the Paris Agreement.

2.1 Market Size

India is the third largest producer and consumer of electricity in the world, with an installed power capacity of 429.96 GW as of January 31, 2024. As of January 31, 2024, India's installed renewable energy capacity (including hydropower) was 182.05 GW, accounting for 42.3% of the total installed power capacity. As of January 31, 2024, solar energy contributed 72.31 GW, followed by 44.95 GW from wind, 10.26 GW from biomass, 4.99 GW from small hydro, 0.58 GW from waste to energy, and 46.93 GW from hydropower. The non-hydro renewable energy capacity addition stood at 15.27 GW in FY23, up from 14.07 GW in FY22. India's power generation witnessed its highest growth rate in over 30 years in FY23. Power generation in India increased by 6.80% to 1,452.43 billion kilowatt-hours (kWh) as of January 2024. According to data from the Ministry of Power, India's power consumption stood at 1,503.65 BU in April 2023. The peak power demand in the country stood at 243.27 GW in January 2024. The coal plants registered a PLF of 73.7% for the first nine-months period in FY23 compared to 68.5% in FY22 for the same period. Thermal power plant load is estimated to improve by 63% in FY24, fuelled by strong demand growth along with subdued capacity addition in the sector.

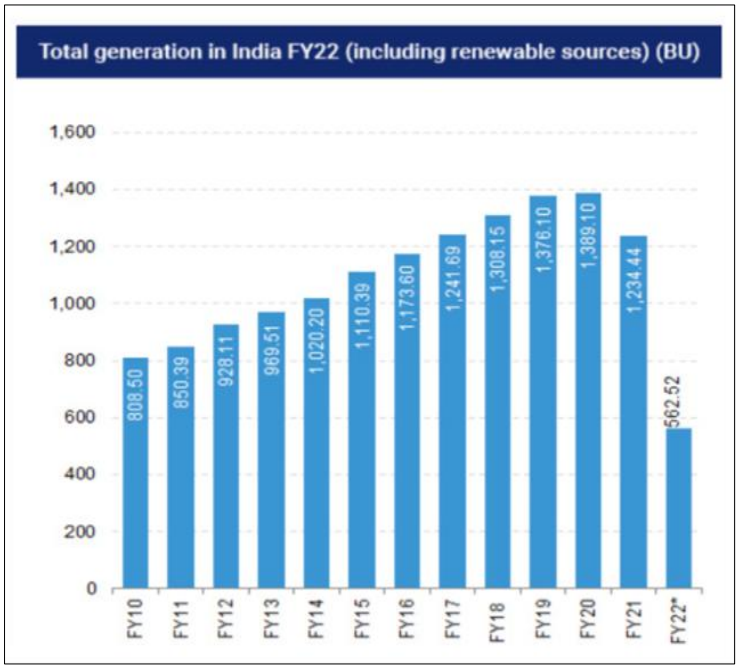


Chart-1
Source: https://www.ibef.org/industry/power-sector-india

2.2 Generation

The sources of electricity generation in India can be broadly classified into conventional and non-conventional. The conventional sources of power generation are thermal (coal, lignite, natural gas, and oil), hydro and nuclear power, whereas non- conventional sources of power generation (renewable energy sources) include solar, wind, agricultural and domestic waste, etc. Table-1(a) and Figure-1(a) show the installed electricity generation capacity in India by different sources.

Table 1(a): Installed Electricity Generation Capacity in India (GW), 2008-09 to 2022-23

Year	Thermal	Hydro	Nuclear	RES**	Total
2008-09	93.73	36.88	4.12	13.24	147.97
2009-10	102.45	36.86	4.56	15.52	159.40
2010-11	112.82	37.57	4.78	18.45	173.63
2011-12	131.60	38.99	4.78	24.50	199.88
2012-13	151.53	39.49	4.78	27.54	223.34
2013-14	168.26	40.53	4.78	34.99	248.55
2014-15	188.90	41.27	5.78	38.96	274.90
2015-16	210.68	42.78	5.78	45.92	305.16
2016-17	218.33	44.48	6.78	57.24	326.83
2017-18	222.91	45.29	6.78	69.02	344.00
2018-19	226.28	45.40	6.78	77.64	356.10
2019-20	230.60	45.70	6.78	87.03	370.11
2020-21	234.73	46.21	6.78	94.43	382.15
2021-22	236.11	46.72	6.78	109.89	399.50
2022-23*	237.27	46.85	6.78	125.16	416.06
Source: CEA, Growth of Electricity Sector in India, various issues.					
*** RES includes Small Hydro Project (≤ 25 MW)*					

As shown in Figure 1(a), heat is one of the major sources of electricity generation in India, accounting for 57% of the total installed capacity in 2022-2023, followed by renewable energy sources (RES) (30.1%), hydropower (11.3%) and nuclear (1.6%). However, the share of thermal power generation capacity in the total installed capacity is gradually declining from 63.3% in 2008-2009 to 57% in 2022-23. During this period, the share of hydropower generation capacity also declined from 24.9% to 11.3%, while renewable generation capacity increased from 8.9% to 30.1%. The average annual growth rate of total installed electricity generation during this period was around 7.7%, compared to 17.4% for RES and 5.7% for all other sources.

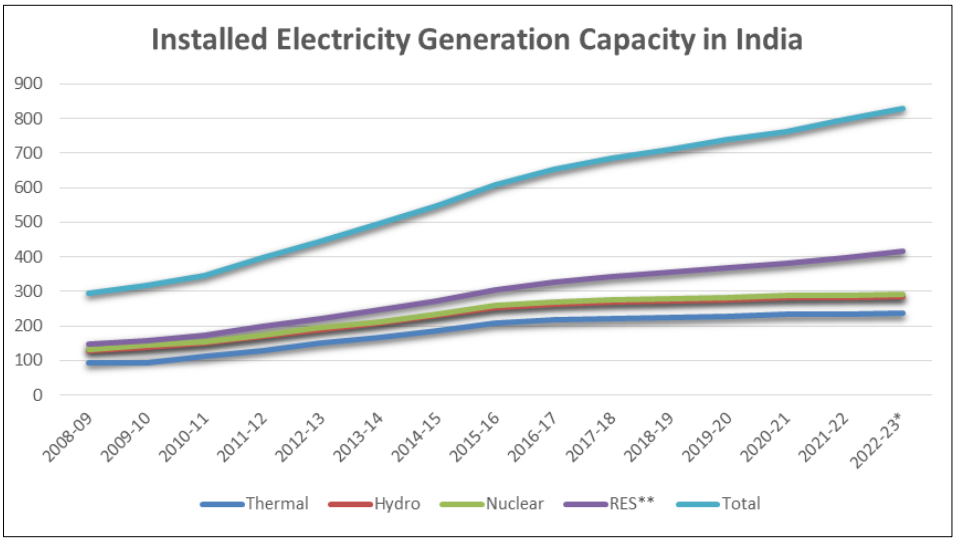


Figure 1(a)
Source: CEA, Growth of Electricity Sector in India, various issues.

Table 1(b) shows the installed RES capacity from different sources and Figure 1(b) shows the share of different sources in the installed RES capacity. As shown in the figure, solar energy will account for about

53.4% of India's total renewable energy capacity in 2022-23, followed by wind (34.1%), bioenergy (8.6%) and small hydro (4%). Though the capacity from all sources has increased over the years, the relative share of solar energy has increased significantly from less than 1% in 2008-2009 to about 53% in 2022-23.

Table 1(b): Installed RES Capacity in India (GW), 2008-09 to 2022-23

Year	SHP	Wind	Bio-Power	Solar	Total RES
2008-09	2.16	9.34	1.74	0	13.24
2009-10	2.6	10.65	2.26	0.01	15.52
2010-11	2.91	12.81	2.7	0.03	18.45
2011-12	3.41	16.9	3.26	0.94	24.5
2012-13	3.64	18.49	3.73	1.69	27.54
2013-14	3.8	21.04	7.51	2.63	34.99
2014-15	4.06	23.35	7.81	3.74	38.96
2015-16	4.27	26.78	8.11	6.76	45.92
2016-17	4.38	32.28	8.3	12.29	57.24
2017-18	4.49	34.05	8.84	21.65	69.02
2018-19	4.59	35.63	9.24	28.18	77.64
2019-20	4.68	37.69	10.02	34.63	87.03
2020-21	4.79	39.25	10.31	40.09	94.43
2021-22	4.85	40.36	10.68	54	109.89
2022-23	4.94	42.63	10.8	66.78	125.16

Source: CEA, Growth of Electricity Sector in India, various issues

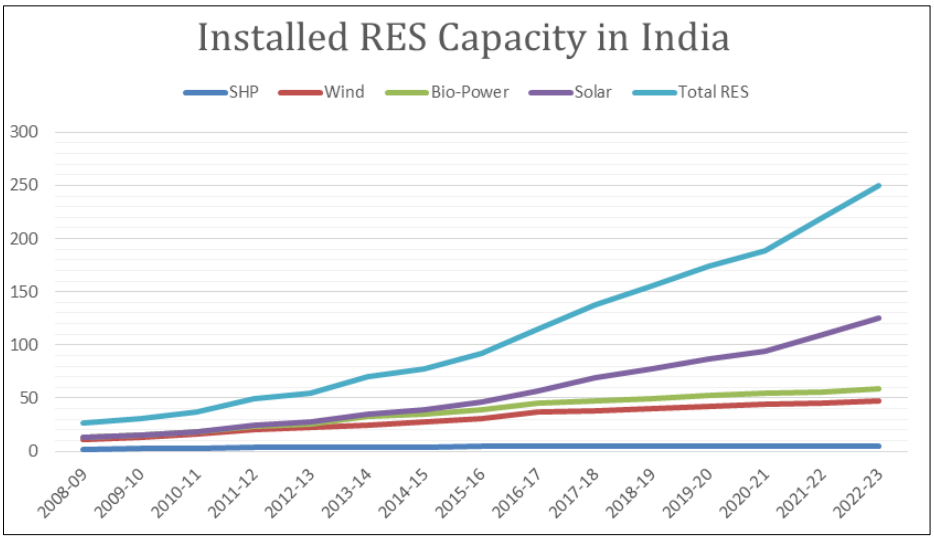


Figure 1(b)

Source: CEA, Growth of Electricity Sector in India, various issues

The Electricity Act of 2003 liberalised the process of electricity generation by shifting towards a license-free regime. This has resulted in increased competition in the generation segment and the share of private players witnessed a significant increase in the total electricity generation. The players in the electricity generation segment can be divided into three types based on ownership and operations. These are: (i) Central public sector undertakings, (ii) State public sector undertakings/State Electricity Boards, and (iii) Private sector companies. The sector-wise growth in installed generation capacity is shown in Table 2 and Figure 2. From the table, it can be seen that the average annual growth rate of total installed generation capacity during the period 2008-09 to 2022-23 was around 7.7%. During this period, the share of state sector in total installed generation capacity declined from 54% to 25% and the central sector share declined from 31% to 24%, whereas the private sector share increased significantly from 15% to 51%.

Table 2: Sector-wise Growth of Installed Electricity Generation Capacity, 2008-09 to 2022-23

Year	Installed Generation Capacity (GW)			
	State	**Central**	**Private**	Total
2008-09	79.31	45.78	22.88	147.97
2009-10	82.91	47.48	29.01	159.40
2010-11	87.42	50.76	35.45	173.63
2011-12	85.92	59.68	54.28	199.88
2012-13	89.13	65.36	68.86	223.34
2013-14	92.27	68.13	84.87	245.26
2014-15	95.08	72.52	104.12	271.72
2015-16	101.79	76.30	124.00	302.09
2016-17	103.97	80.26	142.62	326.85
2017-18	103.97	84.52	155.51	344.00
2018-19	105.08	86.60	164.43	356.10
2019-20	103.32	93.48	173.31	370.11
2020-21	103.87	97.51	180.77	382.15
2021-22	104.85	99.00	195.64	399.50
2022-23	105.73	100.05	210.28	416.06
Source: CEA, Growth of Electricity Sector in India, various issues.				

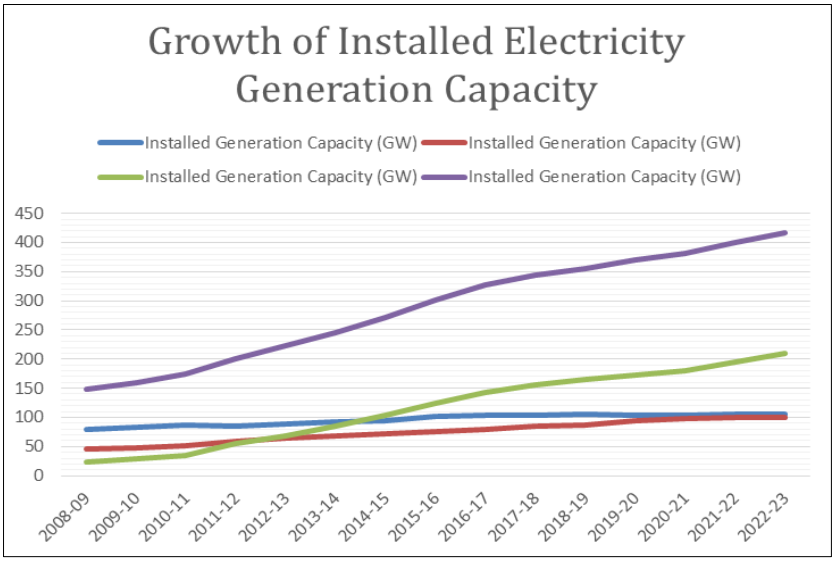


Figure 2

3. Company Profile

AP Power Sector Reforms envisage creation of Distribution Companies as Government Undertakings. The Andhra Pradesh Gazette No.37 published by the Government of Andhra Pradesh on Friday the 31st of March 2000 declared formally formation of Distribution Companies. In this process, Andhra Pradesh Southern Power Distribution Company was formed for the following six districts of Andhra Pradesh. The Corporate Office and Headquarters of APSPDCL is at Tirupati City.

Quality power at economic rates acts a catalyst in transforming the state by fostering growth in agricultural, industrial and commercial areas while meeting the increasing domestic demand. On Feb 1, 1999, Government of Andhra Pradesh initiated the first phase of reforms and restructuring in AP's power sector by unbundling APSEB into APGENCO and APTRANSCO to cater to Generation and Transmission & Distribution respectively. APTRANSCO was further reorganized into four distribution companies to cater to the needs to the different districts of AP. APSPDCL was formed in April 1, 2000 to serve Krishna, Guntur, Prakasam, Nellore, Chittoor and Kadapa districts with a vision to become an efficient utility supplying reliable and quality power, promoting economic development and being self-reliant commercially. After the bifurcation of the erstwhile Andhra Pradesh into the two new states of Andhra Pradesh and Telangana on 2nd June-2014, two more districts Anantapur and Kurnool were added to the Southern Power Distribution Company of AP Ltd.

Andhra Pradesh Power Sector at a Glance

The total installed capacity in Andhra Pradesh is 19,832 MW as on March 31, 2023. The total number of consumers in the state is 207.18 million, of which

16.317 million are in residential sector, 1.96 million in commercial sector, 1.4 million in industrial sector and 19.34 million in agricultural sector (as on February 28, 2023). The total energy consumption (around utilities) in Andhra Pradesh is 72,400 MU in FY 2022-23 with the previous peak demand being 12,653 MW in May 2023. The maximum daily network consumption is 251 MU.

The State Electricity Plan (SEP) of Andhra Pradesh for the period 2023-24 to 2028-29 takes into consideration the projection of energy demand for the said period. Various factors were taken into consideration while projecting the energy demand of the state up to 2033-34, including historical trends, growth of cities of Vizag, Vijayawada, Guntur, Tirupati and Kurnool, growth due to Vizag-Chennai Industrial Corridor (VCIC), Kakinada Special Economic Zone, Sri City Special Economic Zone, Vizag Tech Park, irrigation schemes, new airport and seaport, etc. As per the resource plans submitted by DISCOMs, the energy demand is expected to grow at about 6.64% per annum during the raid period. The increased availability of power generation from various sources (long and medium term) and increasing generation capacity of various types of fuels (coal, gas, hydro, nuclear and renewable energy) are expected to meet the growing demand. Between FY2023-24 and FY2028-29, approximately 1,064 MW of thermal power capacity, 100 MW of nuclear power capacity, approximately 8,159 MW of renewable energy capacity, approximately 1,190 MW of hydroelectric power capacity and approximately 1,350 MW of pumped storage capacity are scheduled to be added. No thermal power plant closures are scheduled till FY 2034. Hence, the SEP also takes into account APTRANSCO's planned expansion of substations and transmission lines up to FY 2028-29. Around 71 substations and 4,837.2 kkm of transmission lines are to be added between FY 2023-24 and FY 2028-29. The SEP also takes into account the tentative plans for FY 2029-30 to FY 2033-34.

4. RESEARCH METHODOLOGY

4.1 Need for the Study

1. The main need of the study is the source and use of funds of the company and how to evaluate the financial performance of the company.
2. The financial pattern of APSPDCL can be found by using cash flow statement analysis.
3. Capital flow clearly indicates the cause of APSPDCL's financial difficulties.
4. It is important to know the capital required for business growth and the working capital status of the company. Financial efficiency allows us to estimate the cash balance of the company.
5. To find out the financial efficiency of funds on APSPDCL.

4.2 Scope of the Study

- The subject of this study was Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati. The company is a public company.
- This study is done at the micro level. Through the analysis of the financial statements of the last five years, it mainly focused on the "Financial Efficiency" of Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati.
- By identifying the strengths and weaknesses of an organization, financial efficiency can be used to determine how effectively resources are used for development and improve performance.
- Financial performance assessment of Andhra Pradesh Southern Power Distribution Company, Tirupati is provided.

4.3 Objectives

The objective of this study is to critically evaluate and assess the financial performance of Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati.

1. To analyze the financial performance of Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati.
2. The objective is to assess the financial health and performance of Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati.
3. Recommendations for Improvement of Tirupati South Power Distribution Company, Andhra Pradesh

4.4 Statement of the Problem

Previous studies have focused on financial analysis, asset and liability management and working capital management of Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati. No specific analysis has been done regarding financial efficiency of Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati. Financial efficiency of Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati is the subject of this study.

Research Design

The study specifically aims to gain a deeper understanding of the issue of 'Financial Efficiency' using some distributions of Southern Andhra Pradesh Power Distribution Company, Tirupati. Throughout the study, emphasis was placed on presenting facts and opinions in an accessible and understandable manner.

4.6 Data Collection

The current analysis is based on secondary data collected from the Southern Power Distribution Company of Andhra Pradesh Limited in Tirupati. The Southern Power Distribution Company of Andhra Pradesh Limited, Tirupati, provides the majority of secondary data through publications, email, and a review of annual reports and audit reports.

4.7 Tools of Analysis

This study examines Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati from the perspective of financial efficiency. It compares the financial position and performance of the study over a period of five years from 2019-20 to 2022-23. This time frame is considered sufficient to analyze Southern Power Distribution Company of Andhra Pradesh State Limited, Tirupati from the perspective of financial efficiency.

4.8 Data Analysis and Interpretation

Profitability of Position:

The profit margin is a familiar measure of accounting ratio which provides a quick glimpse into a company's performance and efficiency. Profitability can be measured either on the basis of operating profit or net profit in general. In this study, the profitability performance of integrated and non -integrated sugar companies are analyzed with appropriate profitability ratios. The profit margin is a familiar measure of accounting ratios which represent the ultimate goal of the firm's earning. The company can generate the profit in such a way of sales revenue, reducing cost and return on investment.

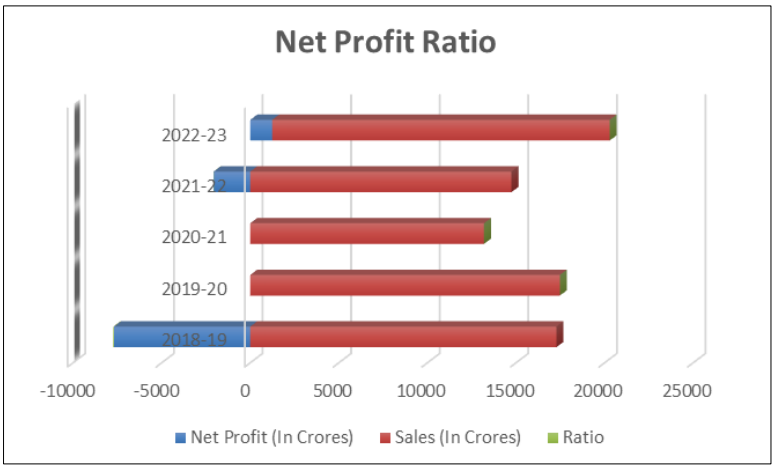
1. Net Profit Ratio: It measures the relationship between net profit and sales of the business. Depending on the concept of net profit, it can be calculated as:

$$\text{Net Profit Ratio} = \frac{Net\ Profit}{Sales} X\ 100$$

Where Net Profit is taken as Profit after Taxes

Table 1: Net Profit Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Net Profit (In Crores)	-7680.87	1.10	1.59	-2054.24	1,233.80
Sales (In Crores)	17278.01	17476.13	13193.21	14741.18	19,048.15
Ratio	-44.4546	0.006294	0.012052	-13.9354	6.4772



Graph 1: Net Profit Ratio of APSPDCL

Inference:

Here, the value of net profit margin was negative in 2020-21, but registered a sharp decline in 2021-22 as compared to 2020-21, followed by a gradual increase in 2022-23.

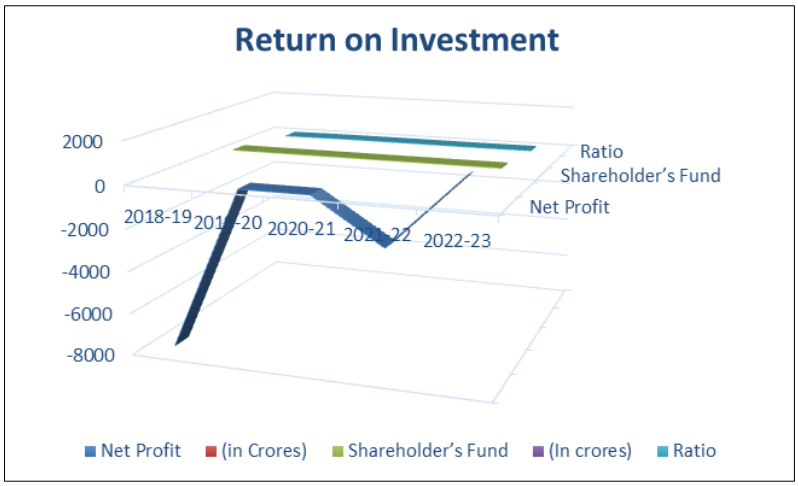
2. Return on Investment Ratio:

Return on Investment Ratio is the most important ratio which is used to calculate the percentage of return on funds invested in the business by its owners. This ratio tells the owner whether or not all the effort put into the business has been worthwhile. It compares earnings/returns/profit with the investment in the company. The ROI is calculated as

$$\text{Return on Investment} = \frac{Net\ Profit\ after\ Interest\ and\ Tax}{Shareholder's\ Fund}$$

Table 2: Return on Investment of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Net Profit (in Crores)	-7680.87	1.10	1.59	-2054.24	1233.80
Shareholder's Fund (In crores)	358.72	358.72	358.72	358.72	358.72
Ratio	-21.4119	0.003066	0.004432	-5.72658	3.4394



Graph 2

Inference:

The return on capital in 2021-22 has declined substantially compared to 2020-21 and increased substantially in 2022-23. Thus, the owners have incurred huge losses in 2021-22 but minimal losses in 2020-21.

3. Return on Total Assets Ratio

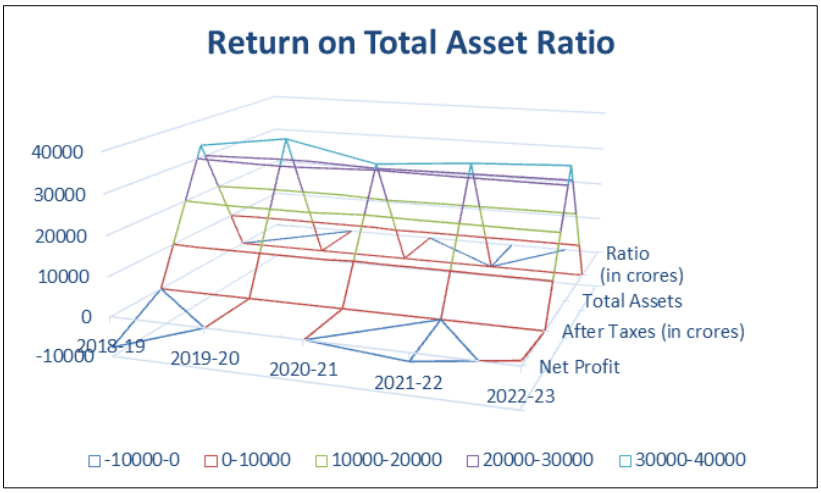
This ratio explains about the relationship between the earnings and a total asset employed in the business enterprise. This ratio is considered to be an indicator of how effectively a company is using its assets to generate earnings before contractual obligations must be paid. The Return on assets Ratio measures the productivity of the assets and computed by dividing net profit after taxes by total asset.

$$\text{Return on Total Assets} = \frac{Net\ Profit\ after\ Taxes}{Total\ assets} \times 100$$

The measure indicates whether management can effectively utilize assets to generate a reasonable return. Higher the ratio illustrates that the firm has greater effectiveness in the utilization of overall resources (Total Assets), which means greater profits reaped by the total assets and vice versa.

Table 3: Return on Total Assets Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Net Profit After Taxes (in crores)	-7680.87	1.10	1.59	-2054.24	1233.80
Total Assets (in crores)	33218.91	36409.59	31363.71	33187.49	34253.03
Ratio	-23.122	0.003021	0.00507	-6.1898	3.6020



Graph 3: Return on Total Assets Ratio

Inference:

The return on assets graph also shows that the company's assets are not utilized effectively in 2021-22 as compared to 2022-23. There was a significant improvement in the performance or utilization of assets in 2022-23 and remained constant in the following year, whereas in 2023-24 there was a marginal increase in the utilization of assets.

4. Liquidity Position

Liquidity ratios are highly useful to creditors and commercial banks that provide short-term credit. Short-term refers to a period not exceeding one year. Liquidity ratios measure the firm's ability to meet current obligations, as and when they fall due. A firm should ensure that it does not suffer from lack of liquidity and also does not have excess liquidity. In the absence of adequate liquidity, the firm would not be able to pay creditors, who have supplied goods and services, on the due date promised. If the firm maintains more liquidity, it will not experience any difficulty in making payments. However, a higher degree of liquidity is bad, as idle assets earn nothing, while there is cost for the funds. Both inadequate and excess liquidity are not desirable.

5. Current Ratio

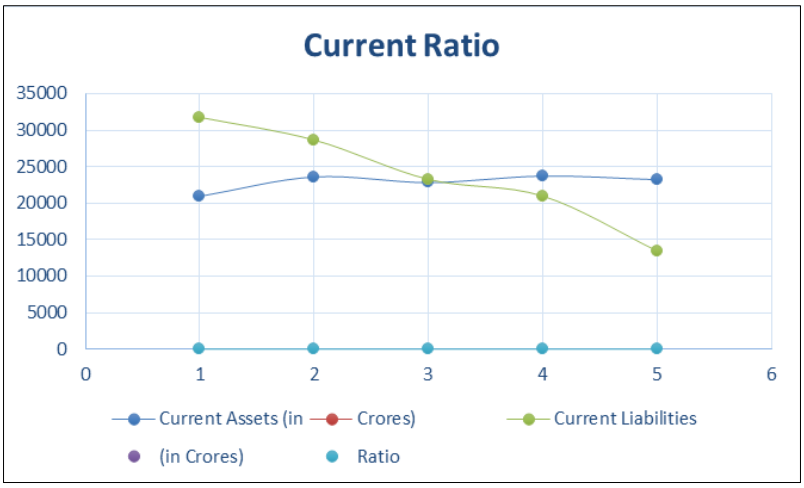
This ratio helps determine the link between current assets and liabilities. It assesses a company's capacity to meet short-term financial commitments. To calculate this ratio, the following formula is employed.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\textit{Current Liabilities}}$$

This ratio has two essential components: current assets and current liabilities. Current assets are cash or cash equivalents that can be turned into cash within a year. Current liabilities are those that must be paid within a year or less. The optimal current ratio is 2:1, which means that one rupee of current liabilities is transformed into two rupees of current assets. A high current ratio indicates a company's capacity to meet its current obligations on schedule using its current assets. A low current ratio indicates the firm's inability to meet its short-term obligations.

Table 4: Current Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Current Assets (in Crores)	20945.96	23604.88	22838.02	23724.38	23229.58
Current Liabilities (in Crores)	31789.37	28668.54	23276.95	20984	13464.47
Ratio	0.65889824	0.82337224	0.98114315	1.13059379	1.7252502



Graph 4

Inference:

The liquidity will increase in 2018-19 and the value will rise till 2022-23, which is a good sign as it was very close to the ideal ratio.

6. Quick Ratio:

This is a more accurate version of the current ratio that reflects the relationship between quick assets and current liabilities. It's also known as acid test or liquid ratio. It is additional and substitutes the bottleneck of the present ratio. The acid test ratio solely evaluates liquid assets that can be easily converted into cash to pay financial obligations as they become due.

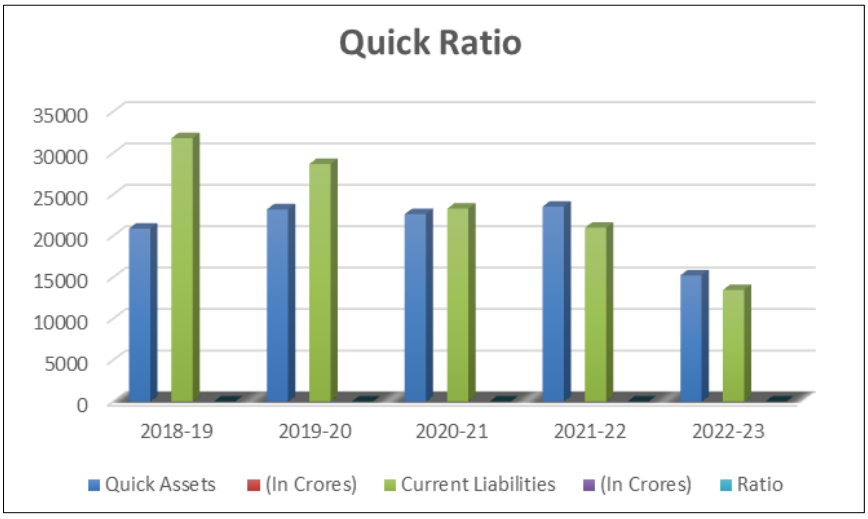
To compute this ratio, use the following formula:

$$\text{Liquid Ratio} = \frac{\text{Liquid Assets}}{\textit{Current Liabilities}}$$

The optimal Quick Ratio of 1:1 is deemed satisfactory. This means that for every rupee of current liabilities, there is an equal amount of quick assets. Firms with high ratios are better positioned to meet financial commitments in a timely manner. A low or below the optimal quick ratio indicates a firm's liquidity status, which can lead to problems satisfying current obligations.

Table 5: Quick Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Quick Assets (In Crores)	20880.72	23195.32	22627.13	23531.81	15233.12
Current Liabilities (In Crores)	31789.37	28668.54	23276.95	20984	13464.47
Ratio	0.656846	0.809086	0.972083	1.121417	1.131356



Graph 5: Quick Ratio of APSPDCL

Inference:

The ideal second-class liquidity is 1:1. The company had the lowest ratio in 2018-2019 but has improved significantly in the following years. The ratio for 2022-2023 is above the ideal ratio, indicating that the company is relatively well-positioned to meet its financial obligations in the near term.

7. Absolute liquid Ratio

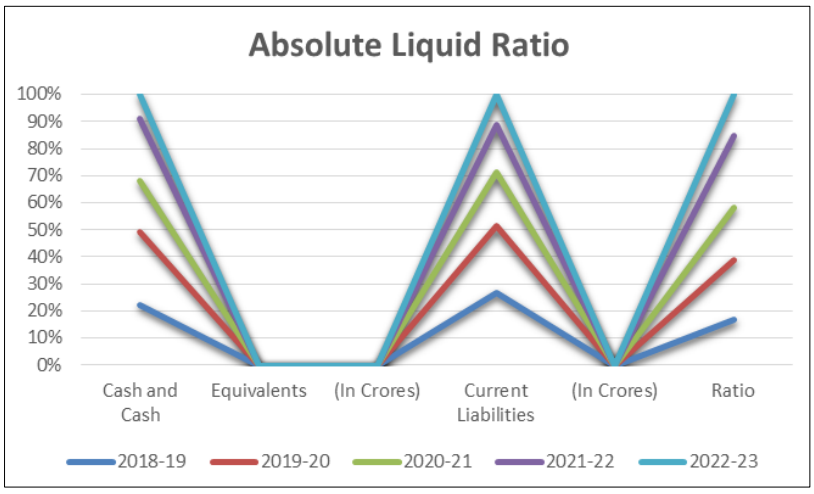
Absolute Liquidity Ratio is also known as Cash Position Ratio or Overdue Liability Ratio. This ratio compares the firm's absolute liquid assets to its current liabilities. Absolute liquid assets are current assets that can be easily changed into cash, including bank balances and marketable securities. To determine the absolute liquid ratio, divide the total of absolute liquid assets by total current liabilities. Thus,

$$\text{Absolute Liquid Ratio} = \frac{\textit{Cash and Bank Balances}}{\textit{Current Lisbilites}}$$

The ratio's usual form is 50%, meaning that assets with an absolute value of 50% are thought to be sufficient to pay off 100% of current liabilities within a reasonable time frame. A ratio that is significantly less than 0.50 indicates that the company's daily cash management is subpar. If the ratio is significantly higher than 0.50, it indicates that there is sufficient cash on hand to cover the company's short-term obligations on schedule.

Table 6: Absolute Liquid Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Cash and Cash Equivalents (In Crores)	427.04	515.81	360.42	450.14	167.29
Current Liabilities (In Crores)	31789.37	28668.54	23276.95	20984	13464.47
Ratio	0.013433	0.017992	0.015484	0.021452	0.012424



Graph 6: Absolute Liquid Ratio of APSPDCL

Inference:

As the ideal value for cash balance is 50%, the graph shows that the company's cash management was very poor in 2020-21, but increased in 2021-22 and again decreased in 2022-23.

8. Solvency Ratios

The ability of a business to pay its long-term debts is shown by solvency. A company's solvency ratio shows how well-positioned it is financially to satisfy all of its obligations and run its operations efficiently. Debentures, long-term loans, unpaid hire purchase instalments, and long-term creditors make up a company's long-term obligation. Long-term creditors are

interested in measures that show the company's long-term financial standing because they want to be sure they will get their money back when the principle and interest on their debts mature.

9. Debt-Equity Ratio

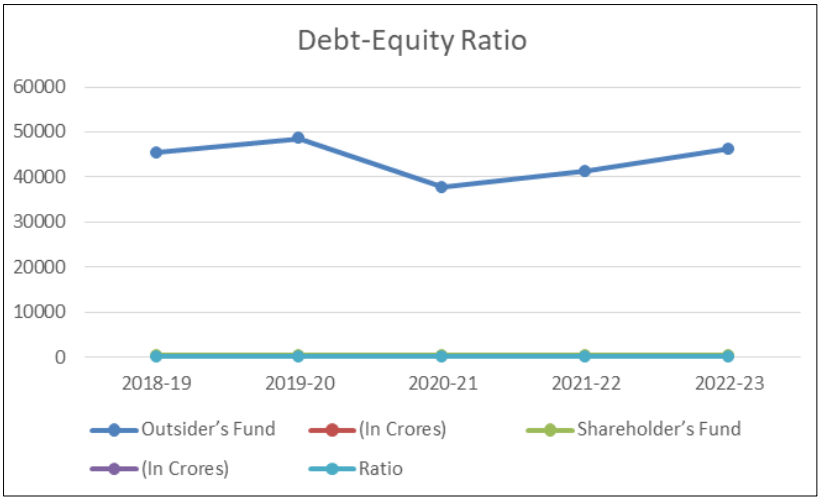
The external-internal equity ratio, commonly known as the owner's share of the company, is a measure of their ownership stake. The relationship between the ownership funds and the outsiders' funds is expressed by this ratio. This ratio is computed to determine the company's debt to creditors relative to the owners' investments. The ratio also indicates how much the company needs on outside parties to operate. It could be computed as

Debt-Equity Ratio = $Outsider's\ Fund\ \%\ Shareholder'sFun$

Standard norm of the Debt-Equity Ratio is 1:2 which means that every one rupee of debt finance is covered by two rupees of shareholder's fund.

Table 7: Debt-Equity Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Outsider's Fund (In Crores)	45399.65	48562.83	37773.93	41282.88	46182.33
Shareholder's Fund (In Crores)	358.72	358.72	358.72	358.72	358.72
Ratio	126.5601	135.3781	105.302	115.0839	128.7419



Graph 7

Inference:

The standard for debt-to-equity ratio is 1:2. However, in this case, the value is negative, which may mean that the company is becoming more dependent on outsiders for its survival.

10. Proprietary Ratio

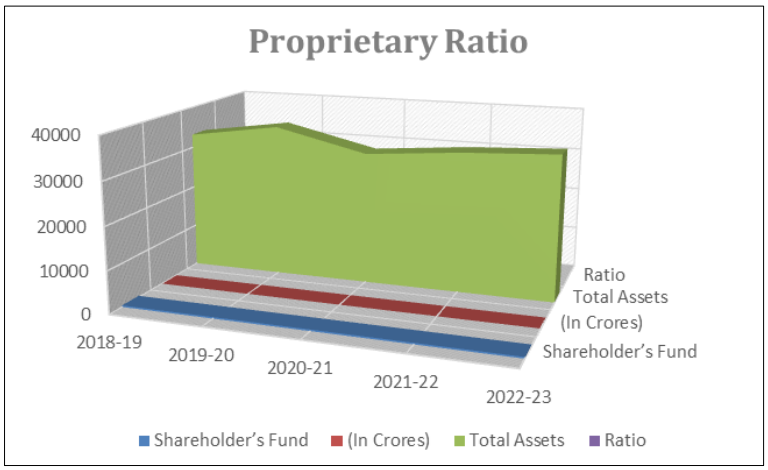
The link between the owners' contribution and the overall amount of assets is depicted by the ratio. Put another way, the amount of money that the owners give to the financing of the company's assets. A higher ratio indicates a larger financial contribution by the owners to the assets. This is one of the debt-to-equity ratio variations.

$$\text{Proprietary Ratio} = \frac{Shareholder'sFund}{Total\ Assets}$$

This ratio is generally used to assess the concern's financial soundness. It functioned as a guide for creditors, enabling them to ascertain the percentage of shareholders' funds allocated to the overall assets utilized by the company. A greater proprietary ratio denotes both a somewhat safer position and a comparatively superior one in the event that the firm becomes solvent. More risk to the creditors is indicated by a lower ratio; in particular, a ratio below 0.5 should raise concerns for the creditors.

Table 8: Proprietary Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Shareholder's Fund (In Crores)	358.72	358.72	358.72	358.72	358.72
Total Assets	33218.91	36409.59	31363.71	33187.49	34253.03
Ratio	0.010799	0.009852	0.011437	0.010809	0.010472



Graph 8

Inference:

According to the ratio standards, the ratio is a negative value, so if it falls below 0.5, it becomes a red flag for creditors. However, comparing 2019 and 2020, the company has been working to improve its capital adequacy ratio.

11. Fixed Assets Ratio

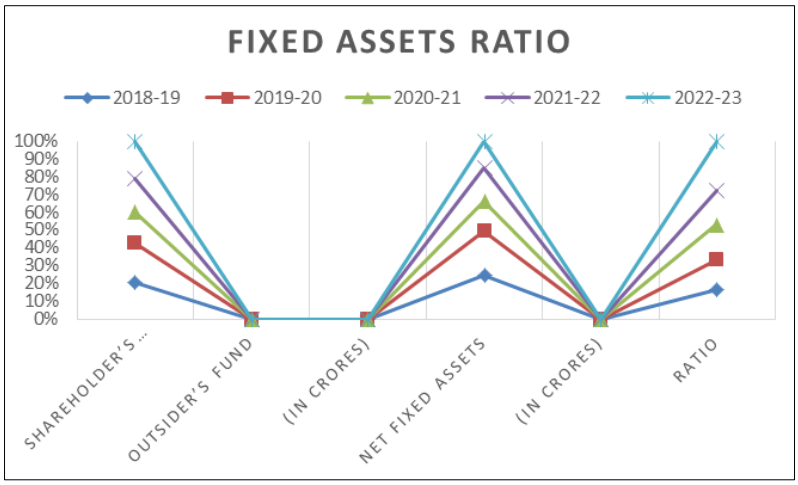
The ratio defines the connection between long-term funding sources and fixed assets. Since the acquisition of fixed assets is the primary application for long-term funding sources, the entire volume of long-term assets and long-term funds should equal one another, or one to the power of two.

$$\text{Fixed Assets Ratio} = \frac{Shareholder'sFund + Outsider'sFund}{Net\ Fixed\ Assets}$$

If the ratio is smaller than 1, it indicates that the company used its short-term funds to buy long- term assets. If the ratio is larger than one, it indicates that the long-term finances obtained for the purpose are bigger than the fixed assets that were acquired. Stated differently, the company utilizes surplus funds to build up its current assets. The ratio should ideally be 1:1, which indicates that the long-term money raised are used to buy the enterprise's long-term assets. It makes it easier to comprehend clearly whether the enterprise's assets are over- or undercapitalized.

Table 9: Fixed Assets Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Shareholder's Funds + Outsider's Fund (In Crores)	45758.37	48921.55	38132.65	41641.6	46541.05
Net Fixed Assets (In Crores)	12272.95	12804.71	8525.69	9463.11	7489.57
Ratio	3.728392	3.82059	4.472676	4.400414	6.214115



Graph 9

Inference

The ideal ratio of fixed assets is 1:1, where the ratio is greater than 3 in all cases, which means that the funds raised in the long term are used for acquiring long-term assets of the company.

12. Turnover Ratio/Sales Efficiency Ratio

It focuses on the relationship between sales and other assets. The ratio demonstrates the firm's speed in transforming assets into sales. Sales efficiency refers to how quickly each task in the sales process may be completed using assets. To improve sales efficiency, organizations should assess turnover ratios and identify weaknesses in their sales processes. The asset turnover ratio compares a company's sales and revenues to its assets. The Asset Turnover ratio indicates how efficiently a corporation uses its assets to generate revenue.

13. Debtors Turnover Ratio

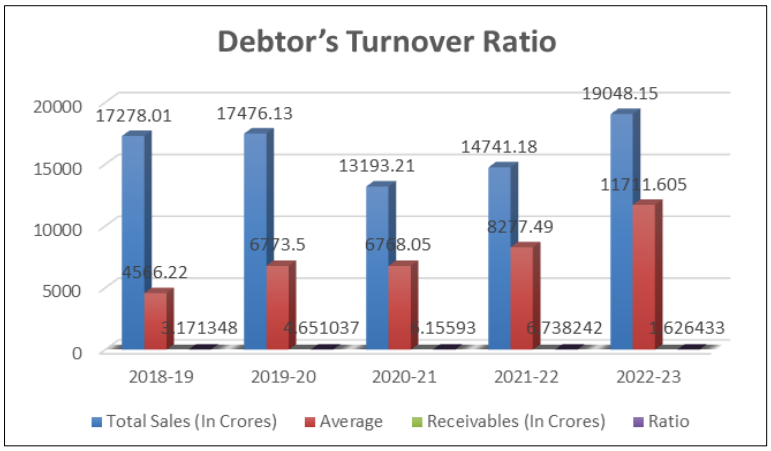
This ratio measures the firm's speed in recovering overdue amounts from debtors and bills receivable. Debtors' velocity is calculated using the Debtors Turnover Ratio to determine their speediness. Debtor velocity refers to how frequently receivables are turned over in a business during a specific time period. In other words, it shows how rapidly debtors are turned to cash. It is used to assess the liquidity position of a company. This ratio determines the link between receivables and sales. Since opening and closing receivables and credit sales are not provided, the ratio can be calculated as follows:

$$\text{Debtor's Turnover Ratio} = \frac{Total\ Sales}{Average\ Receivables}$$

This ratio measures the efficiency of a firm's credit collection and credit policy. A higher ratio indicates a firm's ability to collect outstanding payments and the effectiveness of its collection department, and vice versa. Trade debtors with a greater turnover percentage and shorter debt collection periods are more likely to pay on time. A low turnover percentage and a longer collection timeframe indicate that trade debtors are not paying on time.

Table 10: Debtor's Turnover Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Total Sales (In Crores)	17278.01	17476.13	13193.21	14741.18	19048.15
Average Receivables (In Crores)	4566.22	6773.5	6768.05	8277.49	11711.605
Ratio	3.171348	4.651037	6.15593	6.738242	1.626433



Graph 10

Inference: The accounts receivable turnover ratio was very high from 2018-19 to 2021-22 and has been declining gradually since then.

14. Working Capital Turnover Ratio

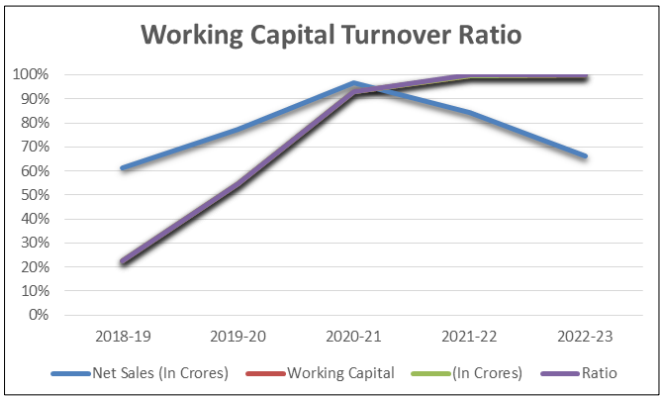
This ratio demonstrates the effective use of working capital in relation to sales. These ratios also reflect the firm's liquidity status. It connects the cost of sales to networking capital. This ratio is computed as follows:

$$\text{Working Capital Turnover Ratio} = \frac{Net\ Sales}{Working\ Capital}$$

This metric assesses the effectiveness of using working capital to generate revenue. A greater working capital turnover ratio implies efficient utilization of working capital, allowing a corporation to repay fixed liabilities using its working capital. A low working capital turnover ratio indicates a deficit of working capital. A lower working capital turnover ratio indicates that the firm may struggle to satisfy its daily business needs due to a lack of working capital. Overtrading may occur when working capital is insufficient to sustain increased sales volume. This could be a dangerous undertaking for the corporation. The ratio will be compared with analyzing industry trends over time can help determine the optimal working capital ratio and prevent overtrading.

Table 11: Working Capital Turnover Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Net Sales (In Crores)	17278.01	17476.13	13193.21	14741.18	19048.15
Working Capital (In Crores)	-10843.4	-5063.66	-438.93	2740.38	9765.11
Ratio	-1.59341	-3.45128	-30.0577	5.379247	1.950633



Graph 11

Inference

The efficient utilization of working capital has declined substantially in 2020-21 but has suddenly increased in 2021-22, indicating that working capital is being utilized efficiently.

15. Creditors Turnover Ratio

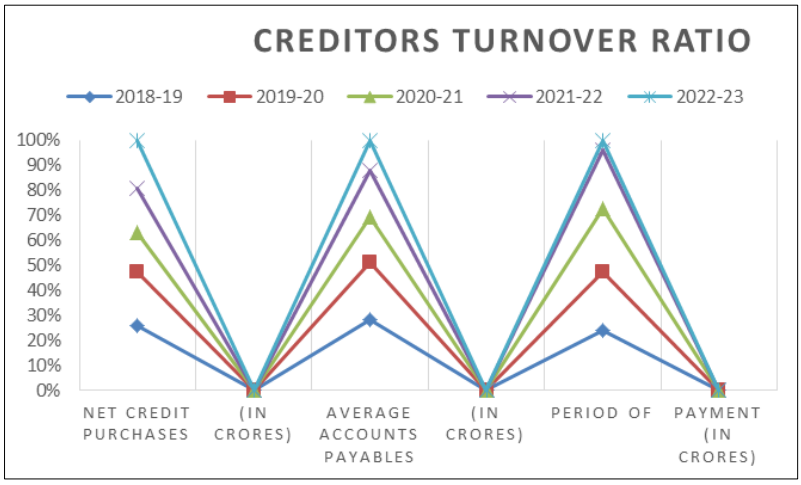
Payables Turnover Ratio or Creditors the turnover ratio is calculated similarly to the receivable's turnover ratio. It assesses how quickly a corporation pays its creditors. It demonstrates the firm's payables payment velocity. The calculation is as follows:

$$\text{Payables Turnover Ratio} = \frac{Annual\ Net\ Credit\ Purchases}{Average\ Accouts\ Payables}$$

A low creditor turnover percentage indicates flexible credit terms from suppliers, whereas a high level indicates prompt account settlement.

Table 12

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Net Credit Purchases (In Crores)	25456.63	21022.16	15309.89	17147.75	19048.15
Average Accounts Payables (In Crores)	23618.35	18984.27	14814.44	15480.07	10108.18
Period of Payment (In Crores)	11.13345	10.83672	11.61166	10.83296	1.88442



Graph 12

Inference: The average loan term offered to customers will shorten from 2022 to 2023, with longer loan terms being offered in subsequent years.

16. Fixed Assets Turnover Ratio

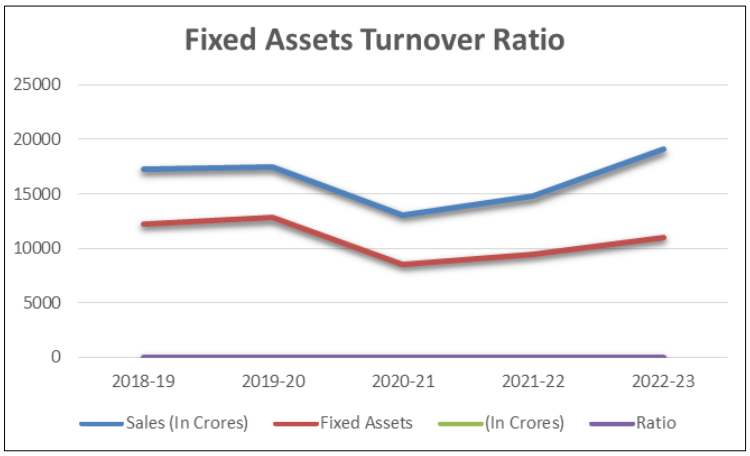
It assesses how efficiently the firm uses its fixed assets. A high fixed assets turnover ratio implies effective use of fixed assets in driving sales. Firms with older plant and machinery may have a greater fixed asset turnover ratio compared to those that have just purchased them.

$$\text{Fixed Assets Turnover Ratio} = \frac{Sales}{Fixed\ Assets}$$

Table 13: Fixed Assets Turnover Ratio of APSPDCL

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Sales (In Crores)	17278.01	17476.13	13139.21	14741.18	19048.15
Fixed Assets (In Crores)	12272.95	12804.71	8525.69	9463.11	11023.45
Ratio	1.407812	1.36482	1.547465	1.557752	1.727966

Inference: In 2022-23 the curve represents utilisation of fixed assets in generating sales.



Graph 13

Interpretation: The curve for 2022-23 depicts the utilization of fixed assets in revenue generation.

1. Current Assets Turnover Ratio

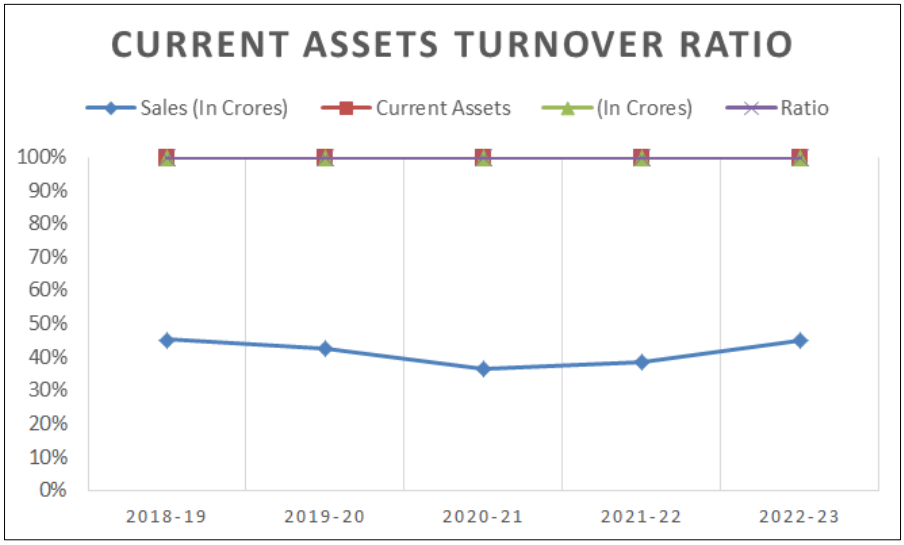
It measures the efficiency of using the current assets by the firm.

$$\text{Current assets Turnover Ratio} = \frac{Sales}{Current\ Assets}$$

The higher the ratio, the more efficient is the utilization of current assets in generating sales.

Table 14

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Sales (In Crores)	17278.01	17476.13	13193.21	14741.18	19048.15
Current Assets (In Crores)	20945.96	23604.88	22838.02	23724.38	23229.58
Ratio	0.824885	0.740361	0.577686	0.621352	0.819995



Graph 14

Inference

The ratio is higher in 2018-19 and 2022-23 as compared to other years, which means that liquid assets have been used more efficiently in 2018-19 and 2022-23.

19. Total Asset Turnover Ratio

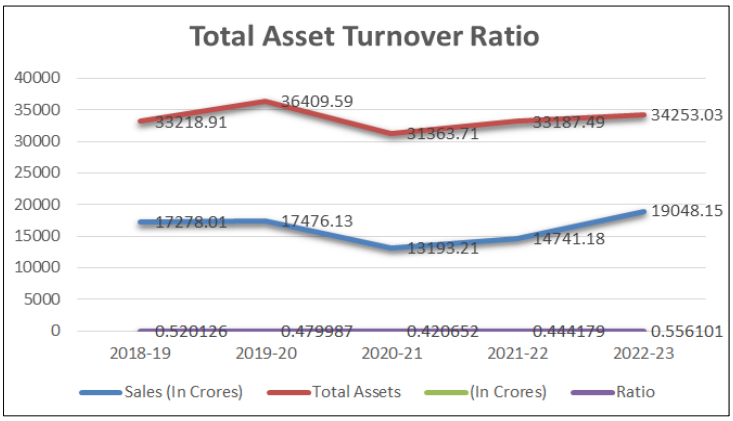
This ratio evaluates how efficiently the company uses its total assets. Higher ratios indicate better results. The ratio is calculated as:

$$\text{Total Asset Turnover Ratio} = \frac{Sales}{Total\ Assets}$$

A high total assets turnover ratio shows efficient use of total assets to generate sales. A low asset turnover ratio shows that total assets are not being used effectively to produce sales.

Table 15: Total Asset Turnover Ratio

Year	2018-19	2019-20	2020-21	2021-22	2022-23
Sales (In Crores)	17278.01	17476.13	13193.21	14741.18	19048.15
Total Assets (In Crores)	33218.91	36409.59	31363.71	33187.49	34253.03
Ratio	0.520126	0.479987	0.420652	0.444179	0.556101



Graph 15

Inference: There has been a sharp and gradual decline in total capital turnover in 2019-20 and 2020-21.

5 FINDINGS

1. Here, the value of net profit margin was negative in 2020-21, but registered a sharp decline in 2021-22 as compared to 2020-21 and then gradually increased in 2022-23.
2. The return on capital in 2021-22 declined sharply as compared to 2020-21 and then increased sharply in 2022-23. Thus, the owners incurred huge losses in 2021-22 but only minimal losses in 2020-21.
3. The return on assets graph also shows that the company's assets are not utilized effectively in 2021-22 as compared to 2022-23. The performance or utilization of assets improved significantly in 2022-23 and remained constant in the following years. There was a slight increase in the utilization of assets in 2023-24.
4. The liquidity increased from 2018-2019 and its value increased from 2022-2023. This is a good sign as it was very close to the ideal value.
5. The ideal second-class liquidity is 1:1. The company had the lowest cash ratio in 2018-2019, but it has improved dramatically in the following years. The ratio for 2022-2023 is above the ideal ratio, indicating that the company is relatively well-positioned to meet its financial obligations in the near term.
6. As the ideal value for cash balance is 50%, the graph shows that the company's cash management was very poor in 2020-21, increased in 2021-22 and then declined again in 2022-23.
7. A debt-to-equity ratio of 1:2 is the norm. But in this case, the value is showing a negative value, which may mean that the company is dependent on outsiders for its survival.
8. According to the ratio criteria, the ratio is a negative value, so if it falls below.
9. 0.5, it will be a red flag for creditors. However, comparing 2019 and 2020, the company is working to improve its capital adequacy ratio.
10. The ideal ratio of fixed assets is 1:1. Here, the ratio is greater than 3 in all cases, which means that long term funds are being used for acquisition of long-term assets of the company.
11. From 2018-19 to 2021-22, the accounts receivable turnover ratio has been very high and has been gradually decreasing.
12. Efficient use of working capital has decreased significantly in 2020-21 but has suddenly

increased in 2021-22 indicating efficient use of working capital.

13. The average credit period provided to customers has decreased in 2022-23 and increased in the subsequent years.
14. From 2022 to 2023, the curve depicts the utilization of fixed assets for generating sales.
15. The ratio was higher in 2018-19 and 2022-23 compared to other years. This means that current assets were used more efficiently in 2018-19 and 2022-23.
16. In 2019-20 and 2020-21, the total capital turnover ratio was good but gradually declined.
17. If we look at the graphs of revenue and expenditure surplus and deficit, we can see that there were large deficits in 2019-20 and 2020-21.

6 SUGGESTIONS

1. The company may want to improve its day-to-day cash management.
2. The utilization of facilities needs to be improved.
3. The company needs to increase its capital adequacy ratio, which is currently negative.
4. Payments by commercial debtors will be delayed depending on the debtor turnover rate. As a result, the company may take appropriate measures to collect payments from commercial debtors.
5. To reduce negative working capital and maintain positive working capital, the company needs to increase current assets or reduce current liabilities.
6. Liquidity and liquidity ratios do not meet standard requirements. Andhra Pradesh Southern Power Distribution Company Limited (APSPDCL) needs to improve working capital management by increasing its liquidity and liquidity ratios.
7. Maximize short-term funds to increase sales.
8. A company needs to increase assets to meet current obligations.

7 CONCLUSION

Electricity is a key enabler for the country's economic growth. Electricity is essential for all forms of human activity - households, agriculture, and industrial infrastructure like communication and transport. India's demand for electricity is huge and continues to grow. This growth is slower than the country's economic growth. A major challenge for the energy industry is to balance the supply and demand of electricity. There is a link between economic growth and per capita electricity consumption. India's steps towards a greener future are being recognised globally. With over 175 GW of added generating capacity in the last nine years, India has moved from an energy deficit to an energy surplus country. The country's commitment to renewable energy sources has played a key role in this success. The impressive growth in solar and wind energy capacity has cemented India's position as a global leader in renewable energy utilization. Currently, India ranks fourth in the world in installed renewable energy capacity, with 43% of the total installed power capacity coming from non-fossil sources. The energy sector, i.e. its boards and companies, cannot be held solely responsible for its failures and mistakes. The consumers from whom the companies seek profits are also responsible. Consumers must be responsible and must not engage in unethical practices and abuses such as illegal electricity tapping and fraudulent use of electricity. In return for the services received, they must develop a sense of responsibility, use electricity properly and be accountable for the electricity they use. They must exercise self-control and pay their bills properly and regularly.

This will enable the power companies to provide better services. Every consumer, as a law-abiding electricity consumer, contributes in his own way to the stability and preservation of the energy sector and the state's economy. Though his contribution may seem insignificant, it would be a mistake to think so or consider him insignificant. As the saying goes, "a million drops make an ocean," and considering the plight of the power sector in the state and across the country, it is crucial that steps are taken seriously towards expansion of generating capacity to maximize it. This will balance the supply of electricity and the growing demand from various consumer categories. Without sufficient power available for industry, a nation cannot achieve industrial progress. Industrial backwardness indicates economic backwardness in today's world. Hence, availability of sufficient power is an indicator of economic development. Just as important as power generation is adequate uninterrupted power supply for consumers. Consumers expect power to be supplied at an affordable price i.e. within their reach. Regular supply of electricity of the required quality will indeed win the confidence of consumers and boost the overall economic development of the country in various ways.

In summary, prioritizing financial efficiency not only streamlines operations, but also promotes sustainability and growth. By continuously optimizing resources, monitoring expenses, and maximizing revenue, companies can achieve long-term success and resilience in a dynamic market.

Financial efficiency analysis evaluates a company's day-to-day performance, including asset utilization, debtor payment schedules, and creditor claims. Financial performance reports summarize a company's financial health and help investors and stakeholders make investment decisions. You can conclude that the company's overall financial performance needs to be improved. Only the operating position of the enterprise should be used efficiently and the liquidity, solvency and profitability of the enterprise should be managed effectively for future performance.

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