Financial Modelling and Analysis of 10 MW Solar/Wind Power Project in Porbandar, Gujarat IN

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Having the opportunity to deliver this project on "***Financial Modelling and Analysis of 10 MW Solar/Wind Power Project in Porbandar, Gujarat IN***" is undoubtedly a source of immense pleasure and proud responsibility.

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EXECUTIVE SUMMARY

This study provides performance analysis results obtained from the 10-MW (five 2-MW turbines) Shagaya pilot wind farm located in a desert area of Kuwait, where hot and dusty conditions prevail and constitute engineering challenges. The 2-year operational data analyzed here provide unique results that elucidate the effects of such conditions on turbines' operation. With a long-term average wind speed of 7.9 m/s at 80-m height, the site offers excellent wind power development potential. The performance analysis of the wind farm conducted here includes: power curve, power coefficient, capacity factor, turbulence intensity, and turbine availability. The study also includes a comparison between the actual and potential annual energy production, as well as wind farm energy losses due to the technical availability. The wind farm recorded a remarkably high-capacity factor (70%) during the hot summer months, as a result of sustained high wind speeds and high technical availability. For the first year of operation, the wind farm's annual capacity factor and energy production were 45.2% and ≈40 GWh, respectively, decreasing to 42.1% and ≈37 GWh in the second year. This analysis presents new information for the wind energy industry to consider in the development of wind farms in hot desert environments.

INTRODUCTION

Real estate pioneer Techvardhan Infra Pvt. Ltd. engages in its businesses. It is a non-government organisation with a registered office at VARDHAN HOUSE, Anand Bazar, Danapur Cantt, Patna801503, Bihar. It was formed in the year 2018. They carry out the duties of a real estate developer by adopting fashionable and clever initiatives, regularly announcing new viable projects, and adopting a customer-friendly strategy, all of which reduce or eliminate complaints. They prioritise providing residents with affordable housing options and maintaining a solid record of accomplishments.

The business has completed more than 30 projects and is growing its services throughout India. They initially do research before making appropriate plans while keeping the clients in mind. In the regions of Hyderabad, Gurgaon, and Bengaluru, it has constructed a number of projects. For the next stage of expansion, they intend to diversify their company by creating IT parks and industrial warehouse parks.

The project is titled "Financial Modeling and Analysis" with the goal of analyzing the various ratios from the preceding three years in order to make a financially sound and beneficial choice for the "10 MW Wind Power Project in Porbandar." Ratio analysis is a key element of financial decision-making for a company's future prospects. The act of figuring out and analyzing a numerical connection based on a financial statement's ratio in order to

analyze the financial statement is known as ratio analysis. I've gathered both primary and secondary information from the company's financial statements and conversations with various employees. Financial statements that provide a well-organized compilation of financial data derived from the foundations of financial analysis In order to avoid duplication, it is discussed here how the various ratios should be used in order to reach any particular conclusion. This highlights the importance of financial ratio analysis and the usefulness of the financial ratio to those who manage a firm as well as to those who are related to it in any way, such as creditors, investors, financial analysis, and so on.

ORGANIZATION OVERVIEW

A group of engineers who have excellent academic backgrounds and decades of managerial expertise from working in businesses all across the world created VCE, a consulting firm. Complex engineering, managerial, and financial problems faced by clients are addressed by VCE.

For energy projects, we offer engineering and project management consulting. In particular, Solar PV power projects (Utility Scale, Large-Sized Projects), and Pyrolysis Projects (Plastic to Oil). Feasibility Analysis, Detailed Project Report, and Financial Analysis are just a few of the services we offer (IM).

- Project financing that achieves financial closure through debt or private equity.

- Project management and EPC-management services, both on- and off-site.
- Transaction and Documentation Services for Project Sale.
- Rights Transfer and Project Development at NTP.

PURPOSE OF THE ORGANIZATION

VCE have different business horizons and revenue sources such as;

1. **Engineering and Management Consulting.**
2. **Importing and Branding Pearl Jewellery.**
3. **Stock Market and Cross-Currency Trading.**
4. **Insurance and Investment Advisory.**

The details of each of the above business activities can be discussed on request. Please send us an email to **business@techvardhan.com** for more details. From past 3 years we saw a good growth in our all business and expecting good returns to all our stakeholders.

Apart from the businesses mentioned above, **VCE** also believe in give back to the society for building a greater future of our country. The various initiatives on **VCE Society Pay Back** are;

Vardhan Merit Scholarship :

In this initiative, we pay scholarship to poor under-privileged girls and pay their entire educational expense till class 12th. So that, financial burden never be the reason for them to drop out from schools. It also encourages the kids to study with more focus. Currently, we grant **Rs. 50,000 (Fifty Thousand Rupees)** per year for this. We believe, this amount is going to increase in future. (Amount Spent so far, **Rs. 3.00 Lakhs+**).

VCE Internships and Training :

In this initiative, we select students from various engineering and management colleges and provide them internship and training. Our internships and training are very unique in nature and its specially for the students of Core Engineering Sector (Electrical, Mechanical, Civil and Energy Engineering) and Finance Management for preparing them to corporate / industry ready. We provide them mentor from the industry. All this is done without taking any fee / favor from the students. Currently. We grant **Rs. 60,000 (Sixty Thousand Rupees)** per year for this. Majority of the amount will be paid as stipend to the best interns as encouragement.

VCE believes in Society Pay Back and hence we provide Scholarships, Internships and Training for **FREE** to deserving students. But, this is NOT just a CSR activity of VCE, there are other reasons also which gives us the energy to keep continuing this endeavor for the betterment of society and students.

- The manpower requirement of core sector is huge but it required skilled persons ONLY. Hence, by providing this internship VCE wants to enhance the skills of young core engineering graduates.
- The finance sector is highly diversified but also linked to the core knowledge. It creates lots of confusion in young management students to decide which field of finance that they should select for career. Hence these internships will help them to have a clear picture.
- Many students didn't understand that apart from the technical/academic skills, they also need corporate skills to

enter, survive, sustain and grow in an organization and hence they need corporate skill development training provided by VCE.

- Students needed to face the most difficult phase of their life alone, which is the Job Hunt Phase and that's a very stressful phase. VCE want to help the student in this phase by JHT Program.
- VCE is interested to invest more in education sector. In terms of starting new institutes which is affordable with world class quality education and hence providing internships and training will help in getting experience.

OBJECTIVE OF THE PROJECT/STUDY

To evaluate the financial ranking:

An organization's financial posture is determined by its financial reserves, monetary structure, liquidity, and ability to adapt to changes in the market where it competes.

To assess the performance of the company:

Performance is an organization's capacity to generate revenues that have been invested in it. Knowing the potential and variability of revenues helps the company forecast the expected cash flows from its present reserves as well as the potential for further funding inflow from other resources that may be invested in the business.

To evaluate the alterations in Fiscal Ranking:

Users of fiscal reports search for information about the endowments, subsidies, and operational activities that the firm engages in over the

treatment period in order to assess the changes in fiscal ranking. This information aids in assessing how successfully the business can raise capital and make use of the flood of cash.

Utility of Finance Project Report :

Current and potential investors, staff, shareholders, clients, governments, and their intermediaries are the main kinds of users of financial information. All of these information searchers entirely rely on financial reports to help them with their decision-making. Because investors put up risk capital for the firm, every fiscal project report needs to match their expectations. All of these information seekers are interested in a company's capacity to generate cash and cash equivalents outside of the time and guarantee of predicted cash flows. The financial repercussions of previous events are discussed in the project report on finance, deals that the majority of information searchers must relate to the coming events. Only a small percentage of the non-fiscal information needed by those looking for financial statements is provided by finance project reports.

RESEARCH METHODOLOGY

10-MW wind power project Porbandar:

Wind power is one of the few viable sources of **alternative energy** that are available to homeowners today. It's especially popular in areas that have regular high wind seasons.

However, it's important to consider not just the natural circumstances that are going to affect your wind turbine's power generating abilities, but also the technical aspects involved.

One of the most important characteristics to look out for in a wind turbine is its power rating. This is usually measured in kilowatts **(kW)** and is similar to a vehicle's horsepower.

Small wind turbines, sometimes referred to as home wind turbines, are much smaller than the turbines you see on wind farms. While larger wind turbines can have a blade diameter that spans the length of a football field, small wind turbines typically have a diameter up to 10 meters wide.

Because of the smaller blades, these wind turbines have a much smaller power output than large turbines. That makes small wind turbines perfect for projects with smaller electricity needs, such as residential, portable, or off-grid applications.

The best locations for small wind turbines are places that experience frequent, high wind speeds. Generally speaking, the taller the turbine, the windier the environment and the more electricity it's capable of generating. Most of the best spots for small wind turbines are on rural properties, as they tend to have a lot of space and few obstructions that would impact wind speeds. In certain instances, a small wind turbine has the potential to offset 100 percent of a home's electricity bill.

How Much Electricity Does a Wind Turbine Produce?

This basically represents a combination of the power that's been used multiplied by the amount of time during which that power was used.

For instance, let's say you have a 100-watt light bulb in your living room and you happen to leave it switched on for 10 hours straight.

During that time period, it would have used something like one kWh. Conversely, industry experts estimate that a 10kW wind turbine energy system has the potential to produce up to **10,000 kWh worth** of energy per year.

However, this estimation is based on a turbine that's operating under favorable conditions, which won't always be possible in real life.

The reality is that there will be days, weeks and even months where there just isn't enough wind for your turbine to produce this amount of energy.

On some days it will only be able to generate a small fraction of its expected energy output. A soft breeze is not enough to power a wind turbine and extreme heat will render it practically useless.

The best way to calculate how much electricity does a **wind turbine** produce is to multiply the air density with the mechanical efficiency of the turbine.

Then, multiply the answer by the length of the rotor blade and the speed of the wind. Wind speed

Wind speed is one of the most fundamental determining factors to how much power does a wind turbine produce. It's more important than the **turbine's mechanical** construction actually.

Although the use of wind turbines has picked up among residential areas all over the **U.S.,** most areas in the country just don't experience the amount of wind needed to power a turbine consistently.

It doesn't matter which brand or manufacturer you buy your wind turbine from, it won't generate much power if the weather conditions aren't favorable.

The **U.S. Department** of Energy is a great resource to consult on this matter, and it shows the average annual wind speed at **50 meters** above the ground. If your area has wind speeds that are below the 10 miles per hour threshold then your turbine simply won't generate the power you need to effectively run your household.

However, if the average wind speed increases marginally to **12 mph** then you can expect to experience a significant boost in the amount of energy that's generated by your wind turbine.

Another factor that contributes to how much power does a wind turbine produce is altitude. The higher you place the turbine the more power it will generate.

For example, a wind turbine that's placed on a 100-foot tower will **produce 30% more energy** than a wind turbine that's placed on a **60-foot tower.**

The numbers will improve even more if you make sure that there are no obstructions around or near the turbine, such as trees or other structures.

A common concern among homeowners wanting to purchase wind turbines is that the rotor blades will fall off and hurt someone during high winds.

Luckily, most manufacturers factor this into the production process, as most wind trines shut down automatically whenever wind speeds reach the **25 mph threshold.**

How much do wind turbines cost?

Home or Farm Scale Wind Turbines

Wind turbines under 100 kilowatts cost roughly $3,000 to $8,000 per kilowatt of capacity. A 10 kilowatt machine (the size needed to power a large home) might have an installed cost of $50,000-$80,000 (or more).

Wind turbines have significant economies of scale. Smaller farm or residential scale turbines cost less overall, but are more expensive per kilowatt of energy producing capacity. Oftentimes there are tax and other incentives that can dramatically reduce the cost of a wind project.

Commercial Wind Turbines:

The costs for a utility scale wind turbine range from about $1.3 million to $2.2 million per MW of nameplate capacity installed. Most of the commercial-scale turbines installed today are 2 MW in size and cost roughly $3-$4 million installed.

Total costs for installing a commercial-scale wind turbine will vary significantly depending on the number of turbines ordered, cost of financing, when the turbine purchase agreement was executed, construction contracts, the location of the project, and other

factors. Cost components for wind projects include things other than the turbines, such as wind resource assessment and site analysis expenses; construction expenses; permitting and interconnection studies; utility system upgrades, transformers, protection and metering equipment; insurance; operations, warranty, maintenance, and repair; legal and consultation fees. Other factors that will impact your project economics include taxes and incentives.

FINANCIAL MODELLING AND ANALYSIS

A financial model is simply a tool that's built-in spreadsheet software such as MS Excel to forecast a business' financial performance into the future. The forecast is typically based on the company's historical performance, assumptions about the future, and requires preparing an income statement, balance sheet, cash flow statement, and supporting schedules (known as a 3 statement model). From there, more advanced types of models can be built such as discounted cash flow analysis (DCF model), leveraged-buyout (LBO), mergers and acquisitions (M&A), and sensitivity analysis. Below is an example of financial modeling in Excel.

Financial modeling is hard if you're trying to figure it out on your own, but with the help of a professional training program like CFI's, the modeling process becomes a lot easier. Many finance professionals find it hard to link the three financial statements

together in Excel, so once you know how to do that, you'll be off to a great start.

If you're interested in financial modeling, chances are, you're planning to land a job offer in the finance industry. You may want to be an investment banker, a private equity research specialist, or an analyst or associate in a hedge funds firm. It's really not a question of whether financial modeling is hard or not. It's about your willingness and determination to learn new skills or hone your current skill set.

Completing a financial modeling course opens more opportunities for career growth, and in an industry such as finance, you would need continuous learning so you can quickly adapt to change and be one step ahead of your peers.

The Basics of Financial Modeling

Financial modeling is a representation in numbers of a company's operations in the past, present, and the forecasted future. Such models are intended to be used as decision-making tools. Company executives might use them to estimate the costs and project the profits of a proposed new project.

Financial analysts use them to explain or anticipate the impact of events on a company's stock, from internal factors, such as a change of strategy or business model to external factors such as a change in economic policy or regulation.

Financial models are used to estimate the valuation of a business or to compare businesses to their peers in the industry. They also are used in strategic planning to test various scenarios, calculate the

cost of new projects, decide on budgets, and allocate corporate resources.

Examples of financial models may include discounted cash flow analysis, sensitivity analysis, or in-depth appraisal.

Real-World Example:

The finest financial models offer a set of fundamental presumptions to users. For instance, forecasts frequently include a line item for sales growth. The gross in the most recent quarter as compared to the prior quarter is used to measure sales growth. The only two inputs a financial model need to determine sales growth are these two.

The financial modeler produces two samples: sample A for sales from the previous year and sample B for sales from the current year. A formula that divides the difference between samples A and B by sample A is utilized with the third sample, sample C. The growth formula is as follows. The formula, sample C, is hard-coded into the model. sample A and B are input sample that can be changed by the user.

In this case, the purpose of the model is to estimate sales growth if a certain action is taken or a possible event occurs.

Of course, this is just one real-world example of financial modeling. Ultimately, a stock analyst is interested in potential growth. Any factor that affects, or might affect, that growth can be modeled.

Also, comparisons among companies are important in concluding a stock. Multiple models help an investor decide among various competitors in an industry.

Accounting of financial modeling:

In investment banking, corporate finance, and the accounting profession, financial modeling is mainly synonymous with cash flow forecasting. This generally includes preparing detailed company specific models which are used for the purpose of decision making and financial analysis. The applications mainly include:

- Business valuation, particularly discounted cash flow, but counting other valuation problems.
- Management decision making and scenario planning (like "what is", "what if", "what has to be done", and similar more.
- Cost of capital
- Capital budgeting
- Project finance
- Financial statement analysis

Why is financial modeling important?

Financial modeling acts as a useful tool which enables business options and risks to be estimated in a cost-effective way against various assumptions, recognize optimal solutions in estimating financial returns and understand the effect of resource constraints thus leading to more effective business decisions.

Financial modeling can be referred as an art and like any other art form, it requires constant [practice and commitment to develop expertise in this area. In the present day world, many companies are becoming globally integrated with the international economy through the way of acquiring/establishing international operations. This calls for the requirement of strong financial models which can

assist in performing the evaluation of every country's operations, reflect on multiple currencies in their model, estimate varying capacity utilizations to estimate the optimal capacity under changeable industry demand-supply scenarios and similar more cases. Introduction to 3-statement modeling

An integrated 3-statement financial model is a type of model that forecasts a company's income statement, balance sheet and cash flow statement. While accounting enables us to understand a company's historical financial statements, forecasting those financial statements enables us to explore how a company will perform under a variety of different assumptions and visualize how a company's operating decisions (i.e. "let's reduce prices"), investing decisions (i.e. "let's buy an additional machine") and financing decisions (i.e. "let's borrow a bit more") all interact to impact the bottom line in the future.

A well-built 3-statement financial model helps insiders (corporate development professionals, FP&A professionals) and outsiders (institutional investors, sell side equity research, investment bankers and private equity) see how the various activities of a firm work together, making it easier to see how decisions impact the overall performance of a business.

Formatting a 3-statement model:

It is critical that a complex financial model like the 3-statement model adheres to a consistent set of best practices. This makes both the task of modeling and auditing other people's models far more transparent and useful. We have written an Ultimate Guide

to Financial Modeling Best Practices, but we'll summarize some key takeaways here. Periodicity one of the first decisions to make in a 3-statement model concerns the periodicity of the model. Namely, what are the shortest time periods the model will be partitioned into: annual, quarterly, monthly or weekly. This will typically be determined by the 3statement financial model's purpose.

Below we outline some general rules of thumb:

Model structure:

When models get large, adhering to a strict structure is critical.

Key rules of thumb include:

- Use roll-forward schedules when forecasting balance sheet items.
- Aggregate inputs in one worksheet or one section of the model and separate them from calculations and outputs.
- Avoid linking files together.

3-statement models include a variety of schedules and outputs, but the core elements of a 3-statement model are, as you may have guessed, the income statement, balance sheet and cash flow statement. A key feature of an effective model is that it is "integrated," which simply means that the 3-statement models are modeled in a way that accurately captures the relationship and inter-linkages of the various line items across the financial statements. An integrated model is powerful because it enables the user to change an assumption in one part of the model in order to

see how it impacts all other parts of the model consistently and accurately.

The income statement:

The income statement illustrates a company's profitability. All three statements are presented from left to right, with at least 3 years of historical results present in order to provide historical rations and growth rates from which forecasts are based. Inputting the historical income statement data is the first step in building a 3-statement financial model. The process involves either manual data entry from the 10K or press release, or the use of an Excel plugin such as Factset or Capital IQ to drop historical data directly into Excel.

Forecasting typically begins with a revenue forecast followed by the forecasting of various expenses. The net result is a forecast of the company's income and earnings per share. The income statement covers a specified period such as quarter or year.

The balance sheet:

Unlike the income statement, which shows operating results over a period of time (a year or a quarter), the balance sheet is a snapshot of the company at the end of the reporting period. The balance sheet shows the company's resources (assets) and funding for those resources (liabilities and shareholder's equity). Inputting historical balance sheet data is similar to inputting data in the income statement. The data is inputted either manually or through an Excel plugin.

In large part, the balance sheet is driven by the operating assumptions we make on the income statement. Revenues drive the operating assumptions in the income statement, and this continues to hold true in the balance sheet: Revenue and operating forecasts drive working capital items, capital expenditures and a variety of other items. Think of the income statement as the horse and the balance sheet as the carriage. The income statement assumptions are driving the balance sheet forecasts. Cash flow statement

The final core element of the 3-statement model is the cash flow statement. Unlike on the income statement or the balance sheet, you aren't actually forecasting anything explicitly on the cash flow statement and it isn't necessary to input historical cash flow statement results before forecasting. That's because the cash flow statement is a **pure reconciliation of the year-over-year changes** in the balance sheet. Every individual line item on the cash flow statement should be referenced from elsewhere in the model (it should not be hardcoded) as this is a reconciliation. Constructing the cash flow statement correctly is critical to getting the balance sheet to balance. To see how this done, watch this free lesson on cash flow statement modeling.

What is a financial model used for?

The output of a financial model is used for decision making and performing financial analysis, whether inside or outside of the company. Inside a company, executives will use financial models to make decisions about:

- Raising capital (debt and/or equity)

- Making acquisitions (businesses and/or assets)
- Growing the business organically (e.g., opening new stores, entering new markets, etc.)
- Selling or divesting assets and business units
- Budgeting and forecasting (planning for the years ahead)
- Capital allocation (priority of which projects to invest in)
- Valuing a business
- Financial statement analysis/ratio analysis
- Management accounting

Who builds financial models?

There are many different types of professionals who build financial models. The most common types of career tracks are investment banking, equity research, corporate development, FP&A, and accounting (due diligence, transaction advisory, valuations, etc).

To learn more about jobs and careers that require building financial models, explore our interactive career map.

How can you learn financial modeling?

The best way to learn financial modeling is to practice. It takes years of experience to become an expert at building a financial model and you really have to learn by doing. Reading equity research reports can be a helpful way to practice, as it gives you something to compare your results to. One of the best ways to practice is to take a mature company's historical financials, build a flat-line model into the future, and calculate the net present value per share. This should compare closely to the current share price or the target prices of equity research reports.

It's also important to establish a solid base understanding by taking professional financial modeling training courses such as ours offered at CFI, with many locations across North America or directly online. In the meantime, you may also be interested in having a go at building your own financial models. Feel free to use our available free templates to get a jump start before taking one of our courses.

THEORETICAL BACKGROUND OF THE STUDY

Classification of Ratios:

A financial ratio is a useless piece of information. In context, however, a financial ratio can give a financial analyst an excellent picture of a company's situation and the trends that are developing. A ratio gains utility by comparison to other data and standards.

Financial ratios quantify many aspects of a business and are an integral part of financial statement analysis. Financial ratios are categorized according to the financial aspect of the business which the ratio measures. Although these categories are not fixed in all over the world however there are almost the same, just with different names:

Profitability ratios which use margin analysis and show the return on sales and capital employed.

Gross profit ratio: This ratio indicates the relation between production cost and sales and the efficiency with which goods are produced or purchased. If it has a very high gross profit ratio it may indicate that the organization is able to produce or purchase at a

relatively lower cost. Gross profit is the profit we earn before we take off any administration costs, selling costs and so on.

Net profit ratio: This ratio is so important because it tells us the amount of net profit of the turnover (sales) a business has earned. The net profit ratio indicates that's portion of sales available to the owners after the consideration of all types of expenses & costs.

Rate of Return Ratio (ROR) or Overall Profitability Ratio the rate of return ratios are thought to be the most important ratios by some accountants and analysts. One reason why the rate of return ratios is so important is that they are the ratios that we use to tell if the managing director is doing their job properly.

Return on assets: This ratio shows the profitability of investment in the firm so higher the ratio is better and more desirable while the company is earning less and less profitability ratio. Although it is better than four years ago, however it is generally earning less profitability.

Return on equity: This is so crucial ratio from the shareholders point of view. The higher it is the better will be the position. While in this company the ratio is going down ward which shows all the problems the company having and a not desirable financial position. Liquidity ratios measure the availability of cash to pay debt, which give a picture of a company's short-term financial situation.

Current ratio: This ratio measurers the solvency of the company in the short term. Current assets are those assets which can be converted into cash within a year. Current liabilities and provisions

are those liabilities that are payable within a year. A current ratio 2:1 indicates a highly solvent position.

Quick ratio: Liquid ratio indicates the backing available to liquid liabilities in the form of liquid assets. Primarily because the current ratio includes inventory assets which right not be able to term to cash immediately. A liquid ratio of 1:1 is supposed to be standard &ideal.

Debt-Equity Ratio: Solvency or Gearing ratios measures the percentage of capital employed that is financed by debt and long-term finance. The higher the gearing, the higher the dependence on borrowing and long-term financing. The lower the gearing ratio, the higher dependence on equity financing. Traditionally, the higher the level of gearing, the higher the level of financial risk due to the increase volatility of profits. It should be noted that the term "Leverage" is used in some texts.

In this ratio shareholders' fund is the share capital plus reserve and surpluses. In case of high debt equity, it would be obvious that the investment of creditors is more than owners. And if it is so high then makes the firm in a risky position. Or if it is too low it might indicate that the organization has not utilized its capacity of borrowing which must be utilized and that is because the borrowing from outsiders is a good source of fund for business with lower returns in compare to equity.

Proprietary ratio: This ratio indicates the relationship between the owner funds & total assets, the assets can be basically fixed or current ratio can be further analyses accordingly.

Turn over Ratios: or activity group ratios indicate efficiency of organization to various kinds of assets by converting them to the form of sales.

Fixed assets turnover ratio: The level of sales generated due to investment in fixed assets. the greater ratio it is inferred the more intensively the fixed assets have been used.

Current assets turnover ratio: This ratio indicates the efficiency with which current assets turn into sales. A higher ratio implies by and large a more efficient use of funds. Thus, a high turnover rate indicates reduced lock-up of funds in current assets. An analysis of this ratio over a period of time reflects working capital management of a firm.

Working capital turnover ratio: A high working capital turnover ratio indicates the capability of the organization to achieve maximum sales with the minimum investment in working capital.

Capital employed turnover ratio: Capital employed can be expressed in different terms, all generally refer to the investment required for a business to function. By "employing capital" you are making an investment. So, capital employed indicated the long-term funds supplied by creditors and owners of the firms.

DATA ANALYSIS AND INTERPRETATION

Wind power generation capacity in India has significantly increased in recent years. As of 30 September 2020, the total installed wind power capacity was 38.124 GW, the fourth largest installed wind

power capacity in the world. Wind power capacity is mainly spread across the Southern, Western and Northern regions.

Wind power costs in India are decreasing rapidly. The levelized tariff of wind power reached a record low of 2.43₹ (3.4¢ US) per kWh (without any direct or indirect subsidies) during auctions for wind projects in December 2017. In December 2017, union government announced the applicable guidelines for tariff-based wind power auctions to bring more clarity and minimize the risk to the developers.

The table below shows India's year on year installed wind power, annual wind power generation and annual growth in wind power generation since 2006.

Installed wind power capacity and generation in India since 2007

Financial year	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
Installed capacity (MW)	7,850	9,587	10,925	13,064	16,084	18,421	20,150	22,465	23,447	26,777	32,280	34,046	35,626	37,669
Generation (GWh)									28,214	28,604	46,011	52,666	62,036	64,485

Wind power by state

There is a growing number of wind energy installations in states across India.

Tamil Nadu

Tamil Nadu's wind power capacity is around 29% of India's total. The Government of Tamil Nadu realized the importance and need for renewable energy, and set up a separate Agency, as registered society, called the Tamil Nadu Energy Development Agency (TEDA) as early as 1985. Tamil Nadu is a leader in Wind Power in India. In Muppandal wind farm the total capacity is 1500 MW, the largest wind power plant in India. The total wind installed capacity in Tamil Nadu is 7633 MW. During the fiscal year 2014–15, the electricity generation is 9.521 GWh, with about a 15% capacity utilization factor.

State	Total Capacity (MW)
Tamil Nadu	9231.77
Gujarat	7203.77
Maharashtra	4794.13
Karnataka	4753.40
Rajasthan	4299.73
Andhra Pradesh	4077.37
Madhya Pradesh	2519.89
Telangana	128.10
Kerala	62.50
Others	4.30
Total	**37090.03**

Maharashtra

Maharashtra is one of the prominent states that installed wind power projects second to

Tamil Nadu in India. As of end of March 2016, installed wind power capacity is 4655.25

MW. As of now there are 50 developers registered with state nodal agency

"Maharashtra energy Development Agency" for development of wind power projects. All the major manufacturers of wind turbines including Renew Power, Suzlon, Vestas, Gamesa, Regen, Leitner Shriram have presence in Maharashtra.

Gujarat

Gujarat government's focus on tapping renewable energy has led to sharp rise in the wind power capacity in the last few years. According to official data, wind power generations capacity in the state has increased a staggering ten times in last six years. Gujarat have 16% of total capacity of country. ONGC Ltd. has installed a 51MW wind energy farm at Bhuj in Gujarat. Renewable energy projects worth a massive Rs 1 lakh crore of memorandums of understanding (MoUs) in the Vibrant Gujarat Summit in 2017.

Rajasthan

4298 MW wind power plant has been installed in Rajasthan.

Madhya Pradesh

In consideration of unique concept, Govt. of Madhya Pradesh has sanctioned another

15 MW project to Madhya Pradesh Windfarms Ltd. MPWL, Bhopal at Nagda Hills near Dewas under consultation from Consolidated Energy Consultants Ltd. CECL Bhopal. All the 25 WEGs have been commissioned on 31.03.2008 and under successful operation.

Kerala

55 MW production of wind power is installed in Kerala. The first wind farm of the state was set up in 1997 at Kanjikode in Palakkad district.

The agency has identified 16 sites for setting up wind farms through private developers.

Odisha

Odisha a coastal state has higher potential for wind energy. Current installation capacity stands at 2.0 MW. Odisha has a windpower potential of 1700MW. The Govt of Odisha is actively pursuing to boost Wind power generation in the state. however it has not progressed like other states primarily because Odisha having a huge coal reserve and number of existing and upcoming thermal power plants, is a power surplus state.

West Bengal

The total installation in West Bengal is 2.10 MW till Dec 2009 at Fraserganj, Distt- South

24 Paraganas. More 0.5 MW (approx) at Ganga Sagar, Kakdwip, Distt - South 24

Paraganas. Both the project owned by West Bengal Renewable Energy Development Agency (WBREDA), Govt. of WB and project was executed on turnkey basis by Utility Powertech Limited (UPL).

Kashmir

The union territory of Ladakh and its Kargil district are potential wind energy areas, which are yet to be exploited. Wind Speeds are higher during the winter months in Ladakh, which is

complementary to the hydro power available during the summer months from the snow melt water. Being a Himalayan region located at higher altitude, the heating energy requirements are high which can be met by the renewable energy resources such as wind, solar and hydro power. The union territory is yet to open its account in grid connected wind power installations

Offshore wind power plants:

India has an offshore wind energy potential of around 70 GW in parts along the coast of Gujarat and Tamil Nadu.

India started planning in 2010 to enter into offshore wind power, and a 100 MW demonstration plant located off the Gujarat coast began planning in 2014.In 2013, a consortium (instead of group of organizations), led by Global Wind Energy Council (GWEC) started project FOWIND (Facilitating Offshore Wind in India) to identify potential zones for development of off-shore wind power in India and to stimulate R & D activities in this area. The other consortium partners include the Centre for Study of Science, Technology and Policy (CSTEP), DNV GL, the Gujarat Power Corporation Limited (GPCL) and the World Institute of Sustainable Energy (WISE). The consortium was awarded the grant of €4.0 million by the delegation of the European Union to India in 2013 besides co-funding support from GPCL. The project action will be implemented from December 2013 to March 2018.

The project focuses on the States of Gujarat and Tamil Nadu for identification of potential zones for development through techno-commercial analysis and preliminary resource assessment.

It will also establish a platform for structural collaboration and knowledge sharing between stakeholders from European Union and India, on offshore wind technology, policy, regulation, industry and human resource development. FOWIND activities will also help facilitate a platform to stimulate offshore wind related R&D activities in the country. The consortium published initial pre-feasibility assessment reports for offshore wind farm development in Gujarat and Tamil Nadu on 16 June 2015.In September 2015, the India's cabinet has approved the National Offshore Wind Energy Policy. With this, the Ministry of New & Renewable Energy (MNRE) has been authorized as the Nodal Ministry for use of offshore areas within the Exclusive Economic Zone (EEZ)

India seems pacing up rapidly towards offshore wind energy development as the Nodal

Ministry (MNRE) & Nodal Agency (NIWE) calls with the Expression of Interest (EoI)inviting the bidders for development of first 1000MW commercial scale offshore windfarm in India, near the coast of Gujarat. The EoI published on 16 Apr 2018, specifies the proposed area identified under the FOWIND & FOWPI study funded by European Union. The proposed location of the offshore windfarm could be 23–40 km off the coast from the Pipavav port, Gulf of Khambhat. The proposed area covers about 400sq km. The wind measurements & other data collection are under progress under the supervision of NIWE.

DIAGRAMMATICAL REPRESENTATION OF THE STUDY

Capital expenditure:

Capital expenditures (CapEx) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, plants, buildings, technology, or equipment. CapEx is often used to undertake new projects or investments by a company. Making capital expenditures on fixed assets can include repairing a roof (if the useful life of the roof is extended), purchasing a piece of equipment, or building a new factory. This type of financial outlay is made by companies to increase the scope of their operations or add some future economic benefit to the operation.

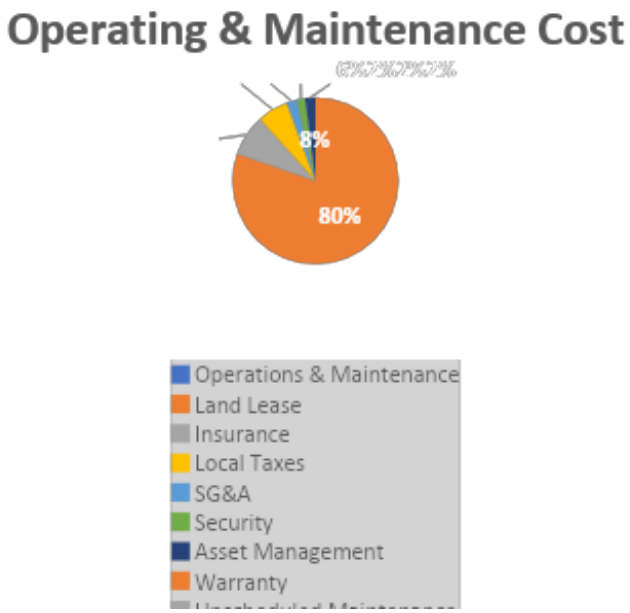
Project graph:



Operating and Maintenance Cost:

Operating expenses (OPEX) are costs not directly associated with the production of the goods or services but commonly incurred during regular business activities. In other words, these are day-to-day expenses that cannot be classified as costs of producing the company's goods or services or costs of purchasing assets.

Project graph:



CONCLUSION

In project period all company member gives many information in this project I Calculate some ratio and analysis some annual accounts to see company's Financial position this is useful interpret company financial position with this study here I conclude that, liquidity position of company is not good so company improve this. Turnover ratios of company increases continuously and Fund management of company is effective and efficient to generate the sales.

Solvency position of company are good and capital structure of company mostly relay on equity or own sources and due to that capital more expensive. Profitability position of company good but Operating expenses of company increases year by year. In overall financial position of company is good and some improvements are to be needed. This project definitely guides the company for formulating the financial strategies in the future.

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