BIJU PATNAIK INSTITUTE OF INFORMATION TECHNOLOGY & MANAGEMENT STUDIES (BIITM), BHUBANESWAR
Plot No. F/4, Chandaka Industrial Estate, Infocity, Patia, Bhubaneswar-24
Approved by AICTE, Govt. of India | Affiliated to BPUT, Odisha | NAAC Accredited | ISO 9001 : 2015

SUMMER INTERNSHIP PROJECT 2024

REPORT TITLE

"A STUDY ON DOMESTIC FINANCING PROCESS FOR RENEWABLE ENERGY PROJECTS AT ADANI GREEN ENERGY LTD."

SUBMITTED BY

INDRAJEET NAYAK
MBA Batch: 2023-2025
University Regn. No.: 2306258071

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CERTIFICATE OF FACULTY/INTERNAL GUIDE

This is to certify that Mr. Indrajeet Nayak, bearing university registration no. 2306258071 of 2023-25 batch, has completed her summer internship at Adani Green Energy Limited from 3rd June 2024 to 15th July 2024 under the supervision of Mr. Ashish Maheswari (GM, Finance & Accounts) and has submitted this project report under my guidance in partial fulfilment of the requirements for award of the degree of Master of Business Administration at Biju Patnaik Institute of Information Technology and Management Studies, Bhubaneswar. To the best of my knowledge and belief, this project report has been prepared by the student and has not been submitted to any other institute or university for the award of any degree or diploma.

Date:

Place: Bhubaneswar

Signature of the Faculty/Internal Guide

Name: Prof. Ajitav Acharya

Designation: Asst. Professor (Finance)

Date: 16-July-2024

Internship Certificate

This is to certify that **Mr. Indrajeet Nayak,** 1st Year Student of Master of Business Administration (MBA) from Biju Patnaik Institute of Information Technology & Management Studies has successfully completed the Internship Programme with **Adani Green Energy Limited** from 03-Jun-2024 to 15-July-2024.

His Internship Project was on **"A Study on Domestic Financing Process for Renewable Energy Projects".**

We found him to be sincere and hardworking.

For **Adani Green Energy Ltd**

Pramath Nath
Head HR

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DECLARATION

I, Mr. Indrajeet Nayak, bearing university registration no. 2306258071 (2023-25 batch), hereby declare that the project report titled "A STUDY ON DOMESTIC FINANCING PROCESS FOR RENEWABLE ENERGY PROJECTS AT AGEL" is based on my internship at Adani Green Energy Limited (AGEL), during the period 3rd June 2024 to 15th July 2024 and is an original work done by me under the supervision of Mr. Ashish Maheswari (corporate guide) and Prof. Ajitav Acharya (internal guide). This report is being submitted to Biju Patnaik Institute of Information Technology and Management Studies, Bhubaneswar, affiliated to Biju Patnaik University of Technology, Odisha, in partial fulfilment of the requirements for the award of the degree of Master of Business Administration. This project report has not been submitted to any other institute/university for the award of any degree or diploma.

Date:

Place: Bhubaneswar Signature:

ACKNOWLEDGEMENT

My internship with **Adani Green Energy Limited** (AGEL) was a great opportunity for learning and professional development. Therefore, I consider myself fortunate as I was provided such a great opportunity and became a part of it. I am also grateful for having a chance to meet so many people and professionals who provided me guidance during this internship.

I would like to express my gratitude to Adani Green Energy Limited for giving me an opportunity to work with their organization and providing me with the necessary exposure in practical world. My sincere thanks to **Mr. Ashish Maheswari, General Manager, Finance & Accounts, Adani Green Energy Limited, Ahmedabad** for her unreserved co-operation, encouragement, and sincere advice throughout the course of this study program. I would also like to thank my colleagues for their invaluable assistance, patience and shared lessons.

With a profound and unfading sense of gratitude, I express my heart full thanks and indebtedness to **Prof. Ajitav Acharya, Asst. Professor, Finance Dept. of MBA, BIITM, Bhubaneswar** for her valuable guidance, encouragement, and constant supervision during the course of preparation of this report.

I express my gratitude to **Dr. Mihir Ranjan Nayak (Principal), K. Chandrashekar, (Head of Training and placement Dept), BIITM** for their kind approval of the summer internship program at AGEL, Ahmedabad.

I cannot conclude this acknowledgement without thinking my family, relatives, acquaintances and friends who offered their valuable cooperation to me at every stage in the research and project report.

EXECUTIVE SUMMARY

Financing large infrastructure projects, especially in renewable energy, requires a blend of equity and debt due to the significant capital involved. In India's rapidly growing renewable energy sector, with a target of 450 GW of capacity by 2030, companies like Adani Green Energy Ltd. (AGEL) are at the forefront, using a mix of equity and debt to finance their ambitious projects.

This project aims to develop a comprehensive financing framework for AGEL's renewable energy initiatives, ensuring an organized and transparent process for securing and managing funds. The focus is on aligning financial strategies with the company's strategic goals. Key activities include conducting thorough feasibility studies and due diligence to evaluate the technical, environmental, and financial viability of projects. These steps help assess legal, regulatory, and financial risks.

Detailed financial models will be created to project costs, revenues, and overall financial performance, with sensitivity analyses to account for various scenarios. The project will identify optimal funding sources—whether equity, debt, or grants—and structure the financing to reduce costs and ensure compliance with regulations. Engaging with stakeholders, including government bodies and financial institutions, will be crucial for securing favourable terms.

Additionally, the project will standardize financial operations within AGEL. This includes implementing robust budgeting and forecasting processes to improve financial planning and resource allocation. Systematic capital allocation will ensure strong returns on investment, and financial reporting will be maintained in line with regulatory standards. Effective cash flow management will be prioritized to optimize liquidity, while internal controls will be strengthened to enhance risk management and prevent fraud.

Overall, this project aims to establish a solid financial foundation for AGEL's renewable energy initiatives, enabling the company to meet its growth targets and contribute significantly to India's renewable energy goals.

TABLE OF CONTENTS

CHAPTER-1

INTRODUCTION

The world has significant decarbonization targets to reach by 2050, and the energy transition is estimated by Bloomberg and McKinsey to cost about $200 trillion. Renewable energy is a critical solution in combating climate change. Renewable energy comes from unlimited, naturally replenished resources, such as the sun, tides, and wind. Renewable energy can be used for electricity generation, space and water heating and cooling, transportation. By transitioning to a low carbon energy mix, we can reduce greenhouse gas emissions, improve energy security and provide millions of people access to clean, reliable and affordable energy.

India's energy demand is expected to increase more than that of any other country in the coming decades due to its sheer size and enormous potential for growth and development. Therefore, it is imperative that most of this energy demand is met by low carbon, renewable sources. India's announcement that it intends to achieve net zero carbon emission by 2070 and to meet 50% of its electricity needs from renewable sources by 2030 marks a historic point in the global effort combat climate change.

AGEL is focused on decarbonization of power generation and is helping India meet its sustainability goals. The electricity generated is supplied to central and state government entities and government backed corporations. AGEL has a presence in 12 states through its operating and under construction SPVs. The presence across multiple state reduces resource risk.

- What is Project Financing?

Project financing for renewable energy involves raising capital to develop, construct and operate renewable energy projects. Investors provide long term debt and equity financing, often using the project assets and revenue streams as collateral. The financing structure and terms vary depending on the project's characteristics, such as technology, size, location, and regulatory environment. Financing of the long-term infrastructure project is usually done through non-recourse financing, which requires the project's cash flows as debt repayment. Non-recourse means that the project sponsor is not held personally liable for the payment of the loan if the project doesn't generate enough cash.

For example, in case of AGEL, the parent company, sets up an SPV as a project company. The debt financing comes from a bank, and the equity finance is from the sponsor (AGEL itself). Debt is repaid in dividends from the cash flow generated by the project. Debt financing is

provided on a non-recourse basis so the bank can't go to the project if something goes wrong with the project.

Renewable energy is an industry that requires significant investment and cannot be supported solely by owner funds. As a result, the corporation finances the project through debt and succeeds in its goal. Usually, project finance includes equity provided by the project sponsor and debt provided by lenders. Debt providers are key players in project finance for renewable energy projects.

The most common type of debt facility used in project finance for renewable energy projects is a term loan. This is usually provided by a group of institutional lenders or a commercial bank and is usually secured against the assets of the project. The terms and conditions of this loan will depend on a variety of factors, including the size and nature of the project and the creditworthiness of the borrower.

OBJECTIVES

1. To know more about financing framework for renewable energy projects at Adani Green Energy Ltd (AGEL)
2. To explore General Financing Standard Operating Procedures (SOPs) to standardize and streamline financial operations across the organization.

METHODOLOGY

The methodology adopted in conducting this study is discussed below. For this project only secondary data have been used.

Secondary Data:

Secondary data refers to information that has already been collected, processed, and published by someone else for a different purpose.

Sources of Data:

Secondary data in the organization was collected from various secondary sources like AGEL's internal documentation, sanctions documentation contracts, security documents, financial information, financial model, Project term sheet, AGEL's Annual Report, latest Investor presentation & Information memorandum.

Details:

The methodology began with extensive research and a comprehensive literature review to understand various aspects of renewable project financing and general financing activities in the field of renewable energy. A review of existing literature on financing mechanisms and frameworks for large renewable energy projects has been done.

A critical part of the methodology was a thorough examination of key financial documents. This phase included: Documentation of the sanctioning process: evaluation of the procedures and criteria for sanctioning project funds, including approval hierarchies, documentation requirements and compliance controls.

- Loan Agreements: Review of agreements that define the terms of the financing agreement, including interest rates, repayment schedules and covenants.
- Security documents: Analyse the documents that explain the financial security and collateral agreements and make sure that the interests of the company are protected.

This analysis helped to understand the complex details of financial agreements and the associated legal and financial obligations.

The next step was to develop detailed financial models to predict the costs, revenues and financial performance of renewable projects. Evaluation of various financing structures to determine the optimal mix of debt, equity and grants. Financial models were important for making informed decisions about project profitability and financing strategies.

Risk management was integrated into each step of the method. Actions included:

Identify potential risks in various dimensions such as market, operational, financial and regulatory. Assessment of the probability and impact of identified risks using qualitative and quantitative methods. Developing risk management strategies, including insurance, hedging, contingency plans and incorporating risk buffers into financial models. A proactive approach to risk management ensured that potential problems were anticipated and dealt with effectively.

The methodology also included mechanisms for continuous review and continuous improvement. This included: Regularly reviewing financial models, SOPs and risk management strategies to ensure they are relevant and effective. Updating processes and documentation based on stakeholder feedback, changes in market conditions and regulatory

developments. Periodic audits and evaluations are conducted to identify areas for improvement and implement corrective measures.

This iterative approach ensured that financial processes and SOPs evolved according to the best practices of the industry and organizational needs.

SCOPE

The scope of this study at Adani Green Energy Limited is to create a clear and effective plan for financing renewable energy projects within India. This includes:

1. Evaluating the technical, environmental, and financial aspects to ensure the proposed projects are viable and practical.
2. Developing financial models to determine costs and identifying the best sources of funding, such as loans, equity, or grants, that meet regulatory requirements and align with the company's goals.
3. Identifying possible risks, such as market or operational issues, and developing strategies to reduce these risks.
4. Working with important stakeholders, like government bodies and financial partners, to secure favourable financing terms and ensure everyone is aligned with the project's goals.
5. Setting up clear guidelines for budgeting, financial forecasting, capital allocation, reporting, cash flow management, and internal controls specific to financing domestic renewable energy projects.
6. Making sure that all financing activities follow relevant laws and internal policies.

Overall, this study aims to provide Adani Green Energy Limited with a well-organized and transparent process for financing renewable energy projects in India, ensuring these projects are successful and sustainable.

REVIEW OF LITERATURE

Overview of search methods:

This literature review provides a foundation for understanding the various aspects of financing domestic renewable energy projects. It highlights the importance of financial models, policy frameworks, risk management, stakeholder engagement, and innovative financing mechanisms in the successful execution of these projects. The search was conducted using databases such as Research gate, Google scholar, Bloomberg, and Reuters.

Summaries of Key studies:

1. **Challenges in Renewable Energy Financing - Baker & Wurgler (2015)** This study talks about the high costs and long time it takes to get returns from renewable energy projects. The authors emphasize the need for government support like tax breaks and subsidies, and suggest using new financial tools like green bonds to help overcome these challenges.

2. **Financial Modelling for Renewable Projects - Hirsh & Koomey (2013)** The authors focus on how important it is to create detailed financial models for renewable projects. These models help predict costs and profits, and include a way to test how different factors (like energy prices) might affect the project's success.

3. **The Role of Public Policy in Renewable Energy Financing - Lipp (2007)** Lipp's study shows how government policies can make or break renewable energy projects. Supportive regulations and incentives, like fixed prices for energy (PPAs), are key to attracting investment and making these projects financially viable.

4. **Risk Management in Renewable Energy Projects - Brealey, Myers, & Allen (2019)** This study covers how to manage the various risks involved in renewable energy projects, such as market changes or operational issues. The authors discuss using tools like insurance or public guarantees to protect investments.

5. **Stakeholder Engagement in Renewable Energy Financing - Freeman & McVea (2001)** The authors explain how involving key stakeholders, like government agencies and financial partners, early on in the project can lead to better financing terms and stronger project support.

6. **Innovative Financing Mechanisms for Renewable Energy - Flannery (2005)** Flannery discusses new ways to finance renewable energy projects, such as green bonds and crowdfunding. These methods can help attract a wider range of investors, especially for smaller, local projects.

7. **Market Dynamics and Renewable Energy Financing - REN21 (2020)** This report looks at how changes in the energy market, like price fluctuations and demand, affect the financing of renewable energy projects. Understanding these market trends is crucial for planning and securing funding.

LIMITATIONS

During my study on the domestic financing process for renewable projects, I encountered several limitations:

- I faced challenges in obtaining detailed and accurate data on financing terms, loan structures, and financial models. Many companies and financial institutions were reluctant to share proprietary or sensitive information, which limited the depth of my analysis.
- Throughout the study, changes in government policies, subsidies, or regulations introduced uncertainty, making it difficult to draw definitive conclusions at times.
- The availability of relevant case studies was limited, particularly in emerging markets where renewable energy projects are still relatively new. This restricted the scope of my analysis and made it challenging to draw broader insights.
- Understanding the complex financial instruments and models used in renewable energy financing required specialized knowledge, which was a significant challenge at certain stages of the study.

- The rapidly evolving nature of the renewable energy sector posed time constraints that affected how comprehensively I could explore the subject, especially when working under tight deadlines.
- I encountered limitations in accessing research tools, financial databases, or specialized software, which impacted the depth of my analysis.

These limitations highlighted the complexities of studying domestic financing processes for renewable projects and underscored the need for careful consideration when interpreting the findings.

CHAPTER-2

COMPANY PROFILE

Adani group, started during 1988 as a partnership firm and founded by Mr. Goutam Adani has now developed into a leading energy and infrastructure conglomerate in India having interests in various industrial segments such as Power generation (Thermal/Renewable). Power distribution and Transmission, Trading Activity (Coal/Power etc.), Refining of Edible Oils (Fortune Brand), Infrastructure Projects, Real Estate & Mining, Ports & Logistics, Airports, City Gas Distribution, Agri Business, Defence, Data centre solutions, Agri-infrastructure, Media etc.

The Adani Group has eleven listed entities namely (i) Adani Enterprise Limited-AEL (ii) Adani Ports and Special Economic Zone Limited-APSEZ (iii) Adani Energy Solutions Limited-AESL (iv) Adani Power Limited-APL (v)Adani Green Energy Limited-AGEL (vi)Adani Total Gas Limited-ATGL (vii) Adani Wilmar Limited-AWL (viii)Ambuja Cements Limited-ACL (ix)ACC Limited-ACCL (x) NDTV Limited (xi) Sanghi Cement

Combined market cap of above 11 listed companies is INR 17,18,821 Crores (USD 206 Bn) as on July 01, 2024.

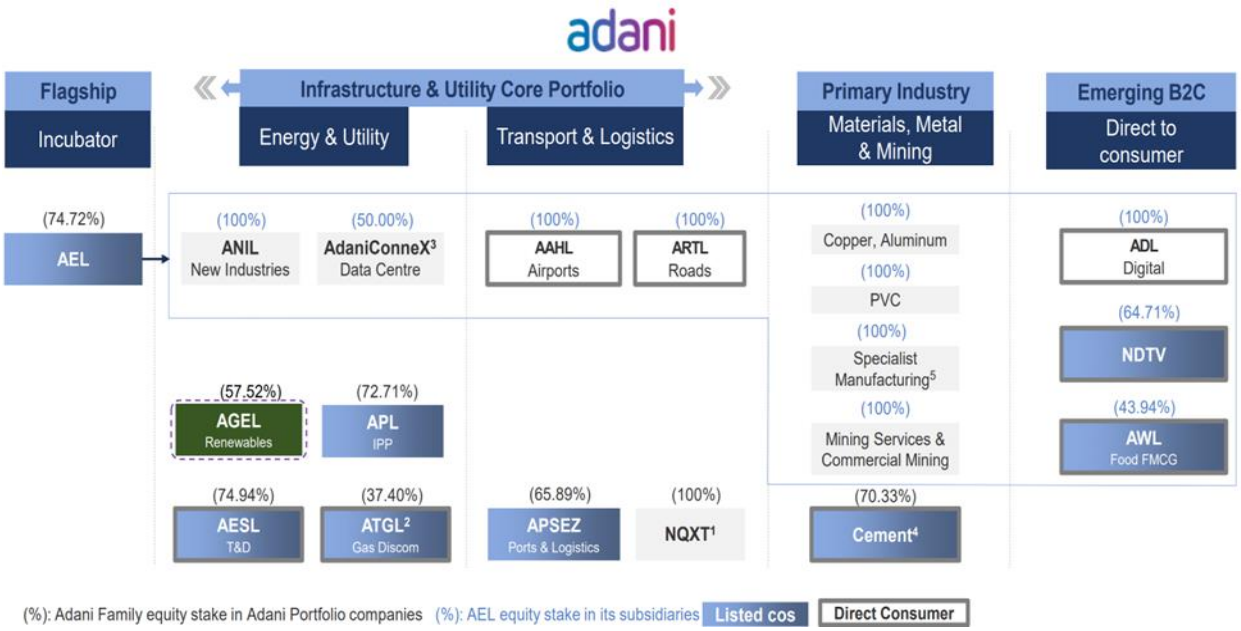


Fig: Adani Group Portfolio

Adani Green Energy Limited (AGEL) is an Indian renewable energy company, headquartered in Ahmedabad, India which is incorporated in 2015. It is majority owned by Indian conglomerate Adani Group. It is the largest renewable companies in India, with an operational portfolio of 10,934 MW and a locked in portfolio of 23,822 MW. The company has been listed at Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) since 2018. It is India's largest renewable player and world's 2nd largest solar Pv (photovoltaic cell) developer. The company focuses on developing, owning and operating utility grid connected solar, wind and hybrid renewable energy plants as well as hydro pump storage projects. The company has an extensive presence across 12 resource rich states, focussing on solar, wind, hybrid renewable power generation.it operates through two segments: renewable power generation and other related ancillary activities and sale of solar power equipment. The sale of solar power equipment segment is comprising of an associate, Mundra Solar Energy Limited. It has strategically established plant in Rajasthan and Gujarat, where it has large scale operations. It also has operation in Australia, Vietnam, Singapore and the US. AGEL's electricity generated is supplied to central and state government entities and government corporations.

AGEL is aligned with the Adani Group's commitment to usher in a cleaner and more sustainable future for India. Guided by the Group's principle of 'Growth with Goodness', the company is devoted to developing, constructing, owning, operating, and maintaining large-scale solar and wind farm projects connected to the grid. The electricity generated is then supplied to government-backed corporations, as well as central and state government entities.

The registered office of the Company is located at "Adani Corporate House", Shantigram, Near Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad, 382421, Gujarat. The company generate its power through multiple location in India. The company have locked in growth capacity of ~ 20.6 GW under the long term PPA for 25 years with average tariff of INR 3.02/kwh, out of which 8.4 GW is already commissioned and able to supply electricity to various parties. Out of total locked in growth capacity, 86% of the capacity are backed by sovereign and sovereign equivalent counter parties to demonstrate strength of the portfolio.

AGEL operates through various subsidiaries that focus on different renewable energy

Projects, including solar and wind power plants. Some key subsidiaries include:

- Adani Renewable Energy Holding Fifteen Limited
- Adani Wind Energy Kutch Five Limited
- Adani Renewable Energy Park Rajasthan Limited
- Adani Renewable Energy Forty-Two Limited

Vision

To be a world class leader in businesses that enrich lives and contribute to nations in building infrastructure through sustainable value creation.

Mission

To establish an integrated renewable energy portfolio, focusing on innovation, operational excellence, and stakeholder value creation.

Strength and Core Competencies

- Reputation and track record of executing projects successfully
- Access to Financing
- Expertise in site selection
- Strong operational expertise
- Geographically diversified portfolio (spread across 12 states)
- Long-term fixed-tariff PPAs with sovereign counterparties
- Robust internal O&M infrastructure, including ENOC (Energy Network Operation Centre)
- New Technology Adaptation and Technical Expertise (Automated Centralised Operation, In house Weather Forecasting Module, Advanced artificial intelligence and machine learning algorithms)
- Best Operational and Maintenance Strategy monitored by a dedicated Project Management and Control Group (PMCG)
- Robust long-term financial platform with a strong Credit Profile ('Ba3' by Moody's, IND AA by India Ratings, 96% of AGEL's projects debt are rated between 'A' to 'AAA')
- Strategic Alliance with Total Energy (Largest energy player in the world)
- Assurance backed ESG framework

Operational Highlights

AGEL's portfolio size of 23,822 MW. Out of which 10,934 MW is operational, 12,888MW is under construction / execution as of May 2024. AGEL has emerged as a pan-India renewable player having well diversified portfolio.

Particulars	Hybrid	Solar	Wind	PSP	Grand Total (MW Capacity)
Operational	2,140	7,393	1,401		10,934
Under construction / Under execution	1,000	10,144	1,244	500	12,888
Total	3,140	17,537	2,645	500	23,822

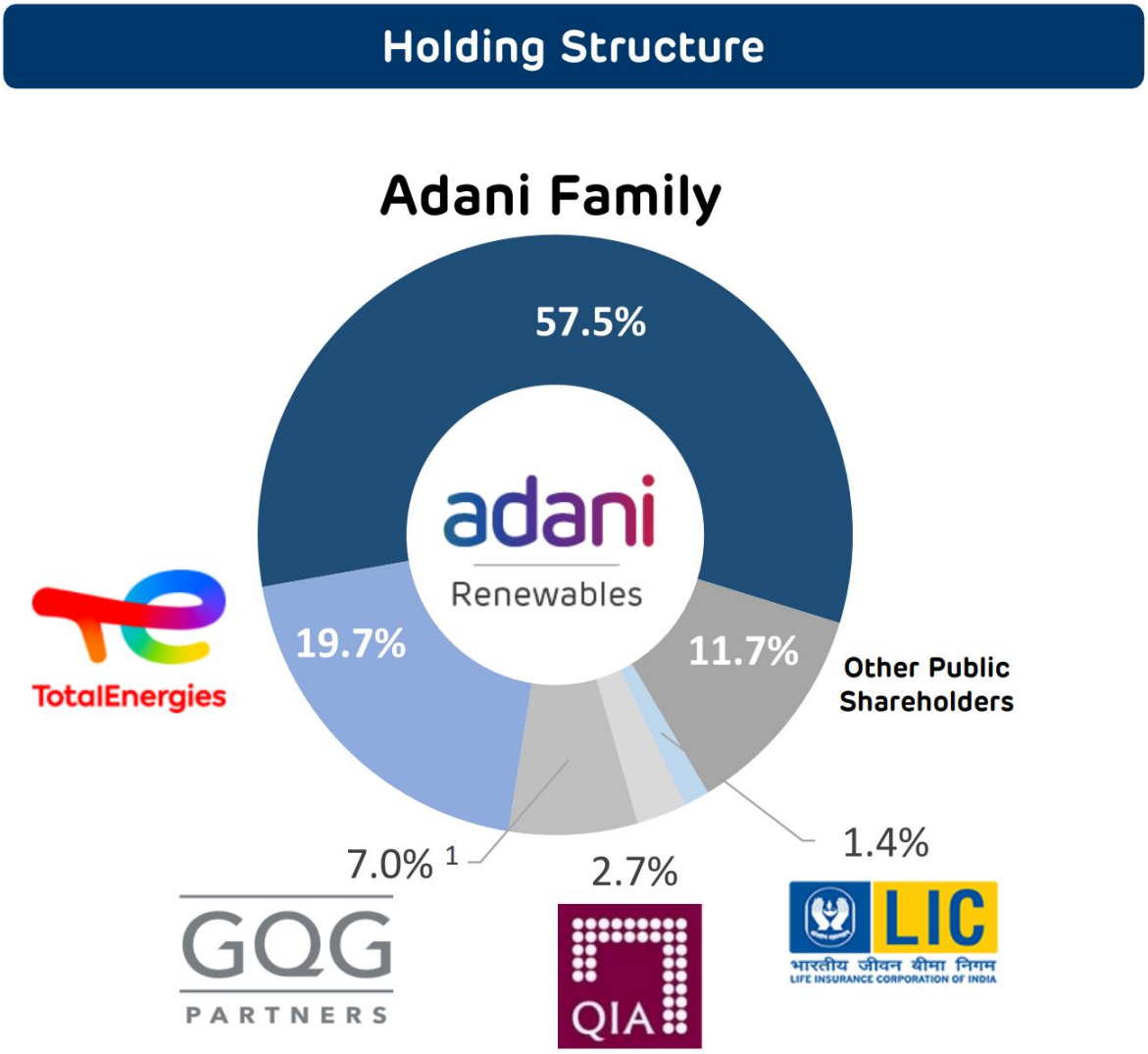
Capital Structure & Shareholding Pattern

The authorized share capital of the company is Rs. 2500 Cr divided into 250 Cr equity shares of RS.10/- each.

Particulars	RS. Cr
Authorised Share Capital	
250 Cr Shares of RS.10/- each	2500.00
Issued, Subscribed and paid-up Capital	
1,58,40,32,478 Equity Shares of RS.10/- each fully paid up	1584.03

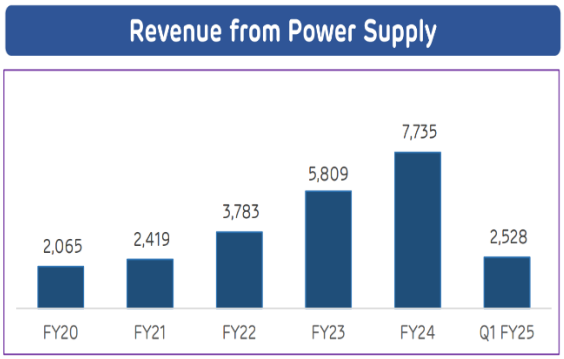
Shareholding Pattern

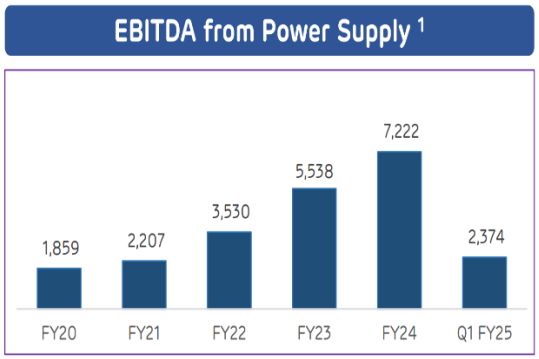
Name of Shareholder	%of Shareholding
Promoter & Promoter Group Companies	56.37%
Public	43.63%
Total	100.00%

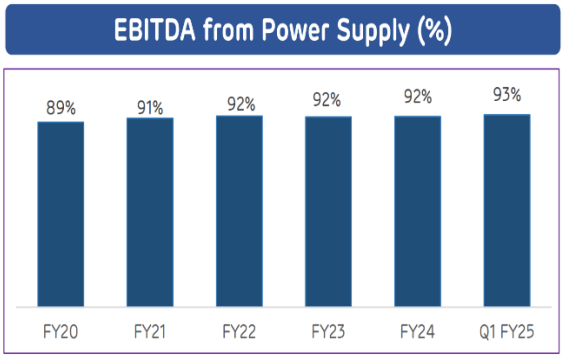


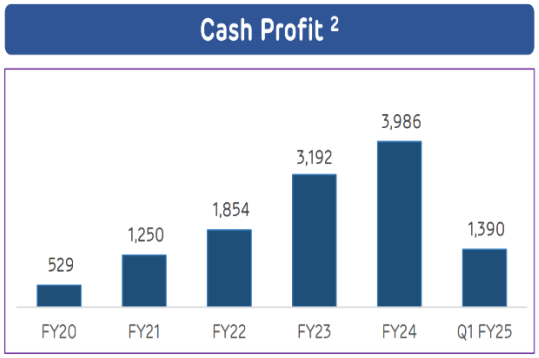
Financial Highlights

- Revenue from power supply increased by 47% CAGR in these two years from Rs. 2,419 Cr to 7,735 Cr from FY-21 to FY-24.
- EBITDA from power supply increased by 48% CAGR in these two years from Rs. 2,207 Cr to 7,222 Cr from FY=21 to FY-24.
- Cash profit increased by 47% CAGR in these two years from Rs. 1,250 Cr to Rs. 3,986 Cr from FY-21 to FY-24.
- Consistent industry-leading EBITDA margins driven by best-in-class O&M practices enabling higher electricity generation at lower O&M cost.
- Total revenue: 12,927 Cr
- Operating Profit: 546 Cr
- Net Profit: 496 Cr
- Total Asset: 41,383 Cr (NCA: 27,536 Cr & CA: 13,847 Cr)
- Market Capitalization of AGEL stands at rupees 2,87,660 Cr









Business Model

AGEL is committed to play a strategic role in the energy transition trajectory. Hence the business model revolves around a just transition to a low-carbon economy and decarbonising the grid. Since inception, AGEL has avoided 36.7 MT CO2, which is equivalent to CO2 absorbed by 1,056.5 million trees per year.

The company bids in renewable energy auctions and then constructs renewable energy plant at the identified resource plant. The company sells renewable power generated from its project under a combination of long-term power purchase agreement (PPA) and on merchant basis and other ancillary activities.

93% of the offtake contracts for AGEL projects are at a fixed tariff and long-term PPA for 25 years. Out of the total locked in growth portfolio, 83% of the projects have PPA with sovereign and sovereign equivalent counter parties.

83% of AGEL's portfolio capacity has PPAs signed with sovereign-rated off takers, namely SECI, NTPC, NHPC, GUVNL and AEML etc. 10% portfolio capacity is with other state DISCOMs and private entities. The remaining % of portfolio capacity is sold/will be sold in the merchant market.

- **PPAs: (Solar & Wind)**

  The PPA is long term agreement between power producer and supplier. It defines the conditions of the agreement, such as the amount of electricity to be supplied, negotiated, pricing, accounting, penalties for non-compliance, rebate, late payment surcharge etc.

  Under the PPA, AGEL assumes all upfront costs, including equipment purchases, labour costs and permitting. AGEL is also responsible for keeping the solar pv system operational, meaning the company also assumes the maintenance costs. In exchange, SECI agree to buy the electricity generated during the contract term. To make the deal attractive, the agreement's kilowatt-hour (kWh) price is set below local electricity tariffs.

  For example, in case of AGEL, the PPA tariff was set at Rs. /2.41 per kWh for a PPA tenor of 25 years while the tariff was Rs. /3.50 per kWh for the merchant market.

- **SECI:**

Solar Energy Corporation of India is a central public sector undertaking (CPSU) under the administrative control of the Ministry of New and Renewable Energy (MNRE). SECI is responsible for implementation of a number of schemes of MNRE, major ones being the VGF schemes for large-scale grid-connected projects under National Solar Missions. SECI also has a power trading license and is active in this domain through trading of solar power from projects set up under the schemes being implemented by it. Under the ISTS scheme (Inter- state Transmission System), SECI is required to select the project developers through a tariff-based competitive bidding process and offtake power generated from project under the scheme, for back-to-back sell to DISCOMs / bulk consumers on long term basis. SECI has entrusted responsibility of purchasing power from projects and selling it to various DISCOMs etc. through back-to-back PPAs.

SECI draws comfort from its strong parentage holding (Government of India) and its strategic role in promoting the solar and wind energy sector in India which is a thrust area of the government. SECI is also beneficiary of the tripartite agreement (TPA) signed between centre, states and the Reserve Bank of India. Nearly all states / UTs have either already signed the TPA or have provided in principle approval. The TPA insulates SECI from the payment delays by DISCOMs of the signatory states / UTs. With this tripartite agreement SECI can issue a regulation notice in case the DISCOMs default in payment to SECI and they can exercise their rights available under the tripartite agreement and Reserve Bank of India will set-off the amount payable by DISCOMs from state budgetary allocation and pay to SECI.

- **PSP Hydro Power:**

A Pumped Storage Project (PSP) is a type of hydroelectric power system that serves as a large-scale energy storage facility. It is a configuration of two water reservoir at different elevations that can generate power as water moves down from one to the other. The system also requires power as it pumps water back into the upper reservoir. It works by pumping water from a lower reservoir to an upper reservoir during periods of low energy demand and releasing it back through turbines to generate electricity during peak demand.

CHAPTER-3

INDUSTRY ANALYSIS

Despite the government's intention to pursue strict energy efficiency standards, including LED lighting, efficient cooling, and building standards, India's per capita electricity consumption was 1327 kWh in 2022-23, which is around one-third of the global average per capita electricity consumption. Demand for electricity grew at a CAGR of 6.1% between 2008-09 and 2022-23. Electricity demand is expected to remain robust and grow by 6.67% p.a. till 2026-27 & by 5.33% p.a. from 2026-27 till 2031-32.

India has always shown its willingness in leadership to fight climate change. The country's vision is to achieve Net Zero Emission by 2070, in addition to attaining the short-term targets which include:

- Increasing renewables capacity to 500 GW by 2030
- Meeting 50% of energy requirements from renewables
- Reducing cumulative emissions by one billion tonnes by 2030
- Reducing emissions intensity of India's gross domestic product by 45% by 2030.

India ranks third in the world in terms of installed power generation capacity and accounts for approximately 5% of the world's total electricity generation. India's energy demand is expected to increase more than that of any other country in the coming decades due to its sheer size and enormous potential for growth and development Therefore it is imperative that most of this new energy demand is met by low carbon, renewable sources.

India faces three main challenges: (1) how to increase reliable energy access and use while keeping consumer costs low and Discoms' finances stable; (2) how to simultaneously integrate rising shares of renewable energy in a secure and reliable manner; and (3) how to reduce emissions to achieve ambitious social and climate goals while achieving economic goals.

India stands 4th globally in Renewable energy installed capacity and it is the market with the fastest growth in renewable electricity. With the increased support of the government and improved economics, the sector continues to remain attractive from an investor perspective.

Number of Players:

The renewable energy sector in India has a mix of public and private players, including:

- Large Corporations: Companies like Tata Power, Adani Green Energy, ReNew Power, NTPC, and Suzlon Energy.
- Public Sector: NTPC and other public entities.
- International Players: Companies like Vestas, Siemens Gamesa, and EDF Renewables are also active in India.
- Startups: Emerging companies focusing on solar, wind, and hybrid solutions.

1. Total Market Size:

The world has significant decarbonization targets to reach by 2050, and the energy transition is estimated by Bloomberg and McKinsey to cost about $200 trillion. The global **renewable energy market size was estimated at USD 1.21 trillion in 2023** and is expected to grow at a compound annual growth rate (CAGR) of 17.2% from 2024 to 2030. The shift toward low-carbon fuels and the presence of stringent environmental regulations in most of the developed countries have provided a major boost to renewable energy sector. The energy generation market has witnessed growth in terms of installed capacity of renewable sources in the past few years on account of growing environmental concerns coupled with pressure to reduce harmful effects of greenhouse gases (GHG). This has been a major factor in the expansion of solar and wind energy sectors.

India stands 4th globally in Renewable energy installed capacity and it is the market with the fastest growth in renewable electricity. With the increased support of the government and improved economics, the sector continues to remain attractive from an investor perspective.

- Installed Capacity: As of 2024, India's installed renewable energy capacity stands at over 175 GW, with a target to reach 500 GW by 2030.
    - Solar Power: ~70 GW
    - Wind Power: ~40 GW
    - Biomass: ~10 GW
    - Small Hydro: ~5 GW

- Investment: The sector has attracted over $90 billion in investments between 2014 and 2024.

2. Relative Market Share:

Relative market share refers to a company's market share compared to its largest competitor. In the context of the renewable energy sector in India, here's a breakdown of the relative market share among key players:

➢ **Solar Energy:**

- Adani Green Energy: As of 2024, Adani Green is the largest solar power producer in India with an installed capacity of over 13 GW. They hold a significant market share, dominating the sector.
- Tata Power Solar: With around 3.5 GW of installed capacity, Tata Power Solar is a major player, though its market share is less than that of Adani Green.
- ReNew Power: Another significant player with approximately 6 GW of installed solar capacity.
- NTPC Renewable Energy: With around 2 GW, NTPC is a growing public sector player in solar energy.

Relative Market Share (Solar):

- Adani Green Energy: **High** compared to other competitors.
- Tata Power Solar: **Moderate**.
- ReNew Power: **Moderate**.
- NTPC Renewable Energy: **Low** relative to the top players.

➢ **Wind Energy:**

- Suzlon Energy: Historically one of the largest wind energy companies in India, though their relative market share has declined due to financial issues.
- ReNew Power: A strong player in the wind sector with over 4 GW of installed capacity.
- Adani Green Energy: Increasing its presence with around 2 GW of wind capacity.
- Inox Wind: Another key player with a considerable but smaller market share.

Relative Market Share (Wind):

- Suzlon Energy: **High** historically, but declining.
- ReNew Power: **Moderate to High**, given their recent expansion.
- Adani Green Energy: **Moderate**, but growing.
- Inox Wind: **Moderate to Low**.

- **Overall Renewable Energy:**
  - Adani Green Energy: The largest player in the renewable energy sector overall, with a diversified portfolio across solar and wind.
  - ReNew Power: A significant player with a balanced portfolio in both solar and wind.
  - NTPC: As a public sector entity, NTPC is ramping up its renewable capacity, though its market share is still lower compared to private giants.
  - Tata Power: A key player with a focus on solar energy but also expanding into other renewables.

Relative Market Share (Overall):

- Adani Green Energy: **High** across both solar and wind.
- ReNew Power: **High** in wind and solar, close to Adani Green.
- NTPC: **Moderate** but growing, especially in public sector-driven projects.
- Tata Power: **Moderate** but primarily solar-focused.

3. **Nature of Competition:**

- Highly Competitive: With several large players vying for dominance, the sector is marked by intense competition, particularly in solar and wind energy.
- Price Wars: Due to competitive bidding in auctions, the industry has seen aggressive price cuts, with tariffs dropping significantly.
- Innovation & Technology: Companies are focusing on cost reduction through technological advancements and scale.

4. **Porter's Five Forces Analysis:**

   - Threat of New Entrants (Moderate): Entry barriers are relatively low due to government incentives, but significant capital requirements and the need for technological expertise pose challenges.
   - Bargaining Power of Suppliers (Low): The abundance of raw materials like solar panels and wind turbines reduces supplier power.
   - Bargaining Power of Buyers (High): With several players in the market, buyers (mainly government and large corporates) have significant power.
   - Threat of Substitutes (Low): Fossil fuels and nuclear energy are the primary substitutes, but the global shift towards clean energy and government policies favour renewables.
   - Industry Rivalry (High): Intense competition due to numerous players, frequent bidding wars, and the race for market share.

5. **Barriers to Entry:**

   - High initial investment costs for setting up large-scale renewable energy projects.
   - Navigating government policies, obtaining permits, and adhering to environmental regulations can be complex.
   - The need for advanced technology and innovation is crucial, especially in reducing costs and improving efficiency.
   - Acquiring large tracts of land for solar farms or wind turbines can be challenging and time-consuming.

6. **Emerging Trends:**

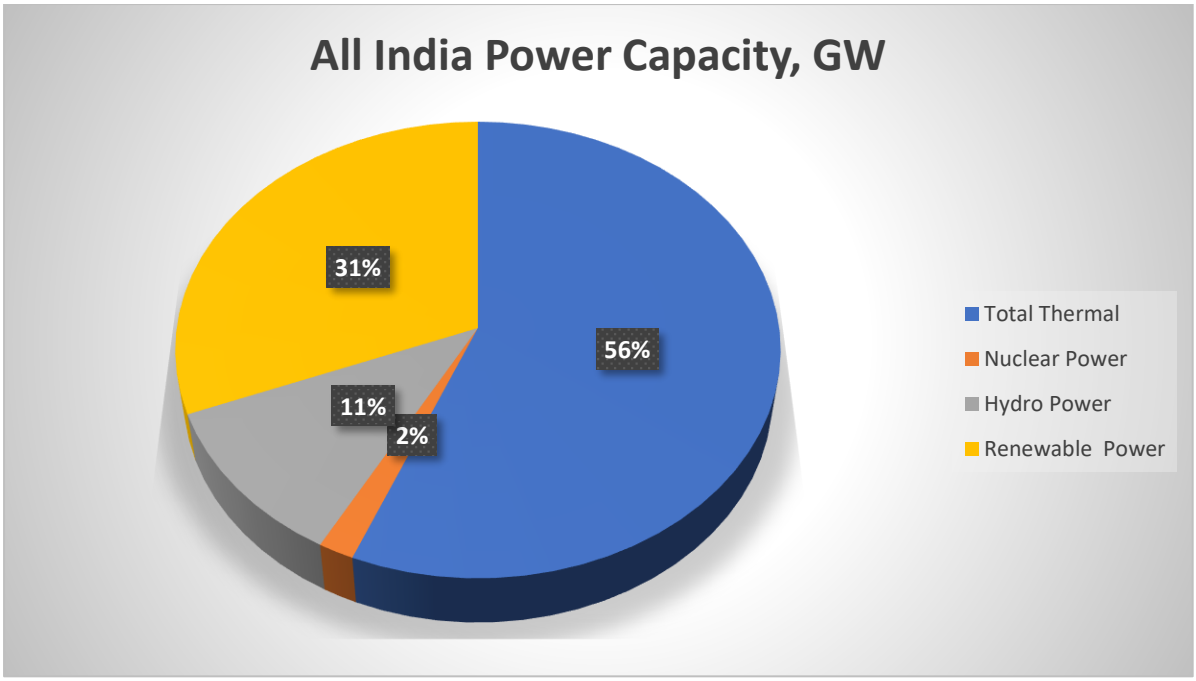
   - Hybrid Projects: Combining solar and wind power to ensure more consistent energy supply.
   - Energy Storage: Growth in battery storage solutions to address the intermittency of renewable energy.

- Green Hydrogen: Increasing interest in green hydrogen as a renewable energy source for industries like steel, chemicals, and transportation.
- Decentralized Energy: Growth in rooftop solar and small-scale wind projects, especially in rural and semi-urban areas.
- Digitalization & Smart Grids: Enhanced grid management through digital solutions and smart grids to integrate renewable energy efficiently.
- Sustainability & ESG Focus: Companies are increasingly focusing on sustainability, Environmental, Social, and Governance (ESG) criteria, which is driving investments and strategic decisions.

India's Power Sector Overview:

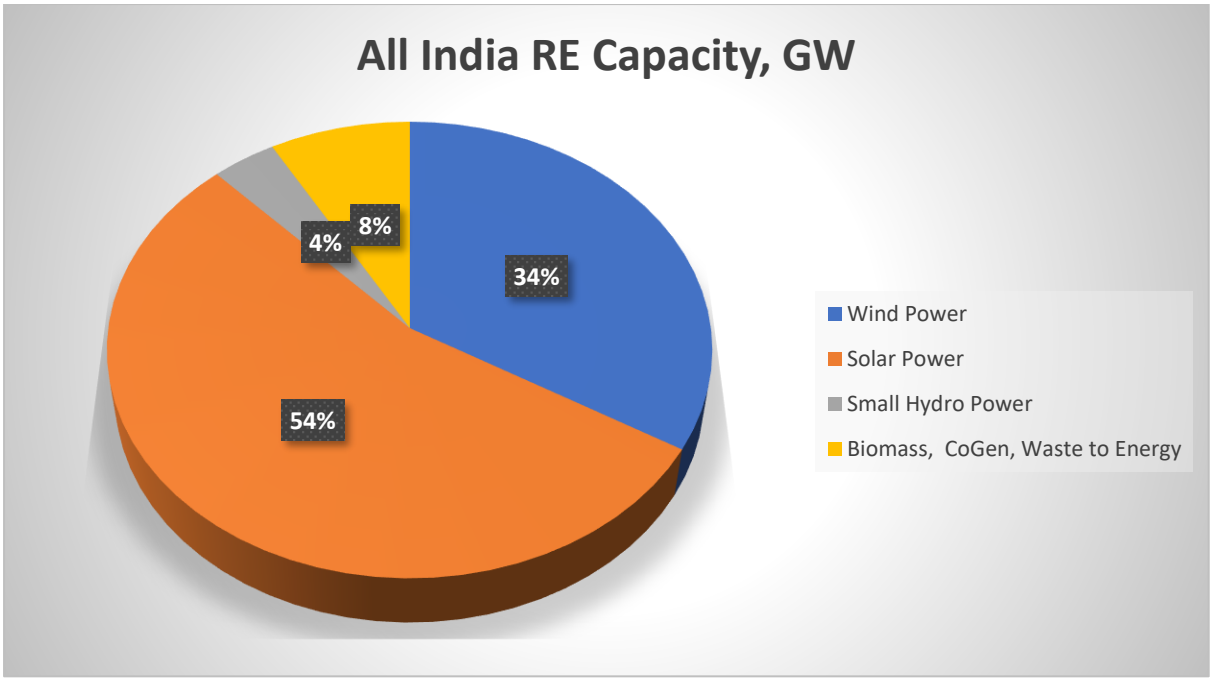
- **Total Installed Capacity**

Power Sector Overview	**Cumulative GW**	**% Capacity**
Coal	206.20	48.60%
Lignite	6.62	1.56%
Gas, Diesel	25.63	6.04%
Nuclear Power	7.48	1.76%
Hydro Power	46.85	11.04%
Renewable Power	131.51	31.00%
Total Installed Capacity	**424.29**	**100%**



- **Total Installed Renewable Energy in India**

Renewable Sector Overview	**Cumulative GW**	**% Capacity**
Wind	44.09	33.52%
Solar	71.61	54.45%
Small Hydro Power	4.98	3.79%
Biomass, Biogas, Waste to Power	10.83	8.24%
Total Renewable Installed Capacity	**131.51**	**100%**



In India, the state-by-state penetration of renewable energy varies greatly. Tamil Nadu, Karnataka, Gujarat, Rajasthan, Andhra Pradesh, Maharashtra, Madhya Pradesh, Telangana, Punjab, and Kerala are India's ten renewable energy-rich states; their percentage of solar and wind energy is much higher than the country's average of 8.2%. Around 29% of the electricity produced annually in Karnataka, 20% in Rajasthan, 18% in Tamil Nadu, and 14% in Gujarat is produced by solar and wind energy. States in India that are abundant in renewable energy already have a larger proportion of variable renewable energy (VRE) than the majority of other nations do. As a result, system integration issues are already present in several states.

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CHAPTER-4

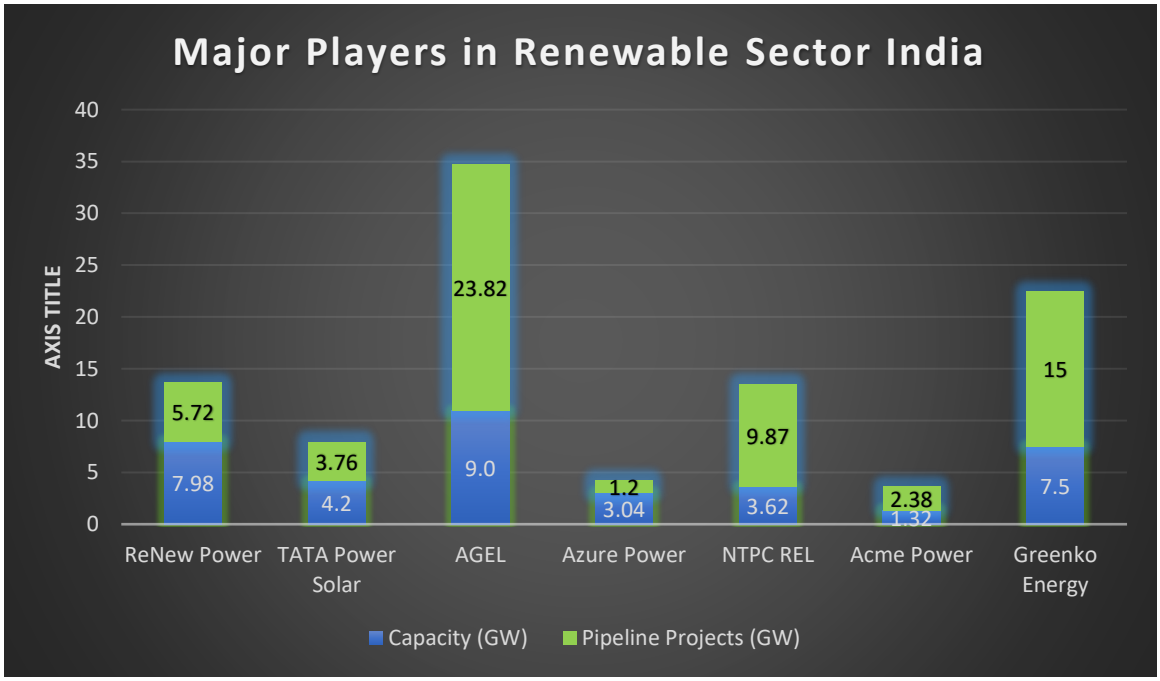
COMPETITOR ANALYSIS

Adani Green Energy Limited (AGEL) is a leading player in the renewable energy sector in India, particularly in solar and wind energy. AGEL holds a leading position in India's renewable energy sector, particularly in solar energy, due to its scale, financial strength, and technological innovation.

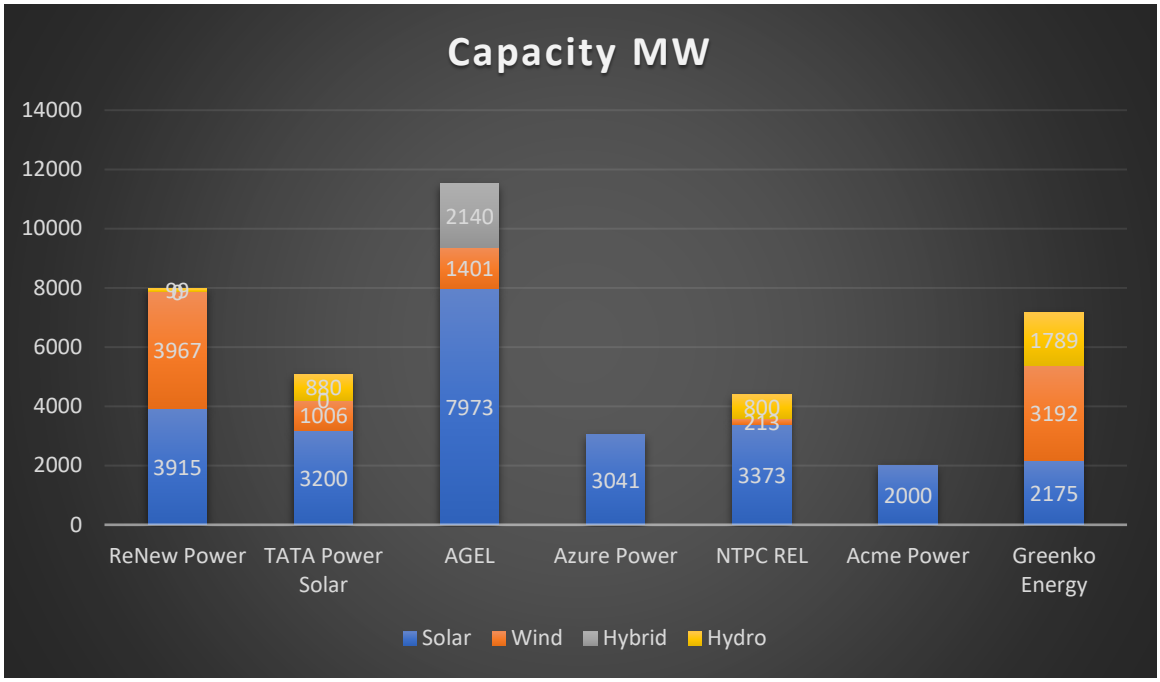
Domestic Players

1. Adani Green Energy Limited
2. TATA Power Renewable Energy Limited
3. Azure Power Global Limited
4. NTPC Limited
5. ReNew Power India
6. Greenko Energy
7. Acme Power

Total Capacity of renewable Players



Capacity Mix of Renewable Players



Product Feature Matrix

Feature/Company	**Adani Green Energy Limited (AGEL)**	**ReNew Power**	**Tata Power Solar**	**NTPC Renewable Energy**	**Suzlon Energy**
Installed Capacity (GW)	15+ GW (Solar + Wind)	12+ GW (Solar + Wind)	3.5+ GW (Solar)	2+ GW (Solar + Wind)	4+ GW (Wind)
Solar Energy	13+ GW	6+ GW	3.5+ GW	2+ GW	N/A
Wind Energy	2+ GW	4+ GW	N/A	~1 GW	4+ GW
Hybrid Projects	Yes (Hybrid solar-wind)	Yes	No	No	No
Energy Storage Solutions	Emerging Focus	Emerging Focus	Limited	Limited	Limited
Geographic Spread	Pan-India	Pan-India	Pan-India	Pan-India	Wind-rich states

Vertical Integration	Strong (from manufacturing to projects)	Moderate	Limited	Limited	Moderate
Technology & Innovation	High focus on technology and scale	High focus	Moderate	Moderate	High focus (Wind)
Financial Strength	Strong	Strong	Strong	Strong	Weaker

Differential Competitor Analysis

1. Adani Green Energy Limited (AGEL)

- **Strengths**:
  - **Scale & Market Leadership**: AGEL is the largest renewable energy company in India by installed capacity, especially in the solar energy sector.
  - **Vertical Integration**: AGEL benefits from being part of the larger Adani Group, allowing it to integrate operations from manufacturing to project execution.
  - **Technological Innovation**: Focuses on large-scale solar and wind projects with advanced technology, including hybrid projects.
  - **Financial Backing**: Strong financial position with significant backing from both domestic and international investors.
- **Weaknesses**:
  - **Dependence on India**: While dominant in India, AGEL's exposure to international markets is limited compared to some competitors.
  - **High Debt Levels**: Large-scale projects and acquisitions have led to high debt, which could be a concern if market conditions change.

2. ReNew Power

- **Strengths**:
  - **Balanced Portfolio**: ReNew Power has a strong presence in both solar and wind energy.

- **Innovation**: Active in energy storage and hybrid projects.
- **International Expansion**: Has been exploring international markets, providing geographic diversification.

- **Weaknesses**:
  - **Scale**: While large, ReNew's capacity is still smaller than AGEL's, particularly in solar.
  - **Vertical Integration**: Less vertically integrated compared to AGEL, which could impact cost competitiveness.

3. **Tata Power Solar**

- **Strengths**:
  - **Brand Equity**: Tata Power benefits from the strong Tata brand, which is associated with reliability and trust.
  - **Focus on Solar**: Leading player in solar rooftop solutions and utility-scale solar projects.
  - **Sustainability Focus**: Strong emphasis on sustainability and ESG criteria, attracting environmentally conscious investors.
- **Weaknesses**:
  - **Limited Wind Presence**: Primarily focused on solar, with little to no presence in wind energy.
  - **Smaller Scale**: Overall capacity is smaller compared to AGEL and ReNew Power.

4. **NTPC Renewable Energy**

- **Strengths**:
  - **Government Backing**: As a public sector entity, NTPC has strong government backing and easier access to land and regulatory approvals.
  - **Expansion Focus**: NTPC is aggressively expanding its renewable portfolio as part of its strategy to transition from coal-based power.

- **Weaknesses**:
    - **Late Entrant**: NTPC is a relatively late entrant to the renewable sector, with a smaller capacity compared to private players.
    - **Innovation**: Slower in adopting new technologies and innovations compared to private competitors like AGEL and ReNew.

5. **Suzlon Energy**

- **Strengths**:
    - **Wind Energy Expertise**: One of the pioneers in wind energy in India, with significant expertise and installed capacity.
    - **R&D Focus**: Strong focus on research and development in wind turbine technology.
- **Weaknesses**:
    - **Financial Struggles**: Suzlon has faced financial difficulties in recent years, impacting its ability to compete effectively.
    - **Limited Solar Presence**: Minimal presence in the solar energy market, which is the fastest-growing segment in India.

CHAPTER-5

CUSTOMER ANALYSIS

Customer drive sales and are key to business growth. Customer analysis for Adani Green Energy Limited (AGEL) is crucial in understanding the diverse range of clients the company serves, as well as identifying potential new markets and customer segments. As a leading player in India's renewable energy sector, AGEL's customer base primarily includes large corporations, government entities, and utility companies that seek reliable and sustainable energy solutions. By analysing current and potential customers, AGEL can better tailor its offerings, enhance customer satisfaction, and maintain its competitive edge in an increasingly crowded market. This analysis also explores AGEL's unique selling propositions, the competitive landscape, and the strategies employed to engage and retain customers across various platforms.

As a leading player in India's energy sector, AGEL is determined to facilitate the nation's economic growth by meeting the ever-increasing demand for energy. In FY2022-23 AGEL successfully delivered 6,81,74,402.40 GJ of electricity through DISCOMs.

83% of AGEL's portfolio capacity has PPAs signed with sovereign-rated off takers, namely SECI, NTPC, NHPC, GUVNL and AEML etc. 10% portfolio capacity is with other state DISCOMs and private entities. The remaining % of portfolio capacity is sold/will be sold in the merchant market.

SECI:

Solar Energy Corporation of India is a central public sector undertaking (CPSU) under the administrative control of the Ministry of New and Renewable Energy (MNRE). SECI is responsible for implementation of a number of schemes of MNRE, major ones being the VGF schemes for large-scale grid-connected projects under National Solar Missions. SECI also has a power trading license and is active in this domain through trading of solar power from projects set up under the schemes being implemented by it. Under the ISTS scheme (Inter- state Transmission System), SECI is required to select the project developers through a tariff-based competitive bidding process and offtake power generated from project under the scheme, for back-to-back sell to DISCOMs / bulk consumers on long term basis. SECI has entrusted responsibility of purchasing power from projects and selling it to various DISCOMs etc. through back-to-back PPAs.

SECI draws comfort from its strong parentage holding (Government of India) and its strategic role in promoting the solar and wind energy sector in India which is a thrust area of the government. SECI is also beneficiary of the tripartite agreement (TPA) signed between centre, states and the Reserve Bank of India. Nearly all states / UTs have either already signed the TPA or have provided in principle approval. The TPA insulates SECI from the payment delays by DISCOMs of the signatory states / UTs. With this tripartite agreement SECI can issue a regulation notice in case the DISCOMs default in payment to SECI and they can exercise their rights available under the tripartite agreement and Reserve Bank of India will set-off the amount payable by DISCOMs from state budgetary allocation and pay to SECI.

NTPC:

NTPC Limited, is an Indian central public sector undertaking (PSU) under the ownership of Ministry of Power and the Government of India, who is engaged in the generation and distribution of electricity to State Electricity Boards in India. The body also undertakes consultancy and turnkey project contracts that involve engineering, project management, construction management and operation and management of power plants. NTPC acts as an intermediary procurer where it procures power from other developers and sell to DISCOMs with a trading margin.

NHPC:

NHPC Limited (National Hydroelectric Power Corporation) is an Indian public sector hydropower company that plan, promote and organise an integrated and efficient development of hydroelectric power.

GUVNL:

Gujarat Urja Vikas Nigam Limited is a state electricity regulation board in the Indian state of Gujarat, India owned by the Government of Gujarat. The company aims towards restructuring the power sector and improving efficiency of its management and distribution of various services to consumers.

Customer Base and Market Focus

Adani Green Energy Limited (AGEL) primarily serves a diverse range of customers, including large corporations, government entities, and utility companies, all of which have significant energy needs and sustainability goals. These customers appreciate AGEL's ability to provide large-scale, reliable renewable energy solutions, supported by the company's leadership in India's renewable energy sector. AGEL's competitive advantage lies in its commitment to sustainability, innovation, and scalability, which allows it to meet the energy demands of its clients efficiently.

Unique Selling Proposition (USP)

The company's Unique Selling Proposition (USP) is further strengthened by its ability to deliver low-cost energy, making renewable energy not just a sustainable choice but also an economically viable one for its customers. This cost-effectiveness is particularly attractive to potential customers such as small and medium enterprises (SMEs) and residential consumers who may seek affordable, sustainable energy solutions in the future. AGEL also targets international markets, particularly in developing countries with growing energy demands, and could expand into the residential market with rooftop solar solutions.

Competitive Landscape

In terms of competition, AGEL's rivals, including Tata Power and ReNew Power, target similar customer segments, particularly large corporations and government projects. Despite this competition, AGEL maintains a competitive edge through its scale of operations, technological innovation, and strong sustainability commitment. This is particularly important in a market where customers are increasingly prioritizing long-term environmental impact alongside cost considerations.

Customer Engagement Strategy: The AIDA Model

AGEL's approach to customer acquisition and retention aligns with the AIDA model, where the company first captures attention through its market leadership and large-scale projects. Interest is generated by emphasizing the sustainability and cost benefits of their energy solutions, leading to a desire among customers to engage with AGEL for their energy needs. Finally, AGEL converts this interest into action by offering tailored, reliable, and low-cost renewable energy solutions.

Platform and Market Potential

The company primarily operates on a B2B platform, focusing on large corporations, SMEs, and government entities. However, there is potential to expand into the B2C market, especially with increasing interest in residential solar energy. AGEL's online presence also plays a crucial role in brand visibility and customer engagement, providing accessible information about projects, sustainability efforts, and facilitating inquiries.

Conclusion

The customer analysis for Adani Green Energy Limited (AGEL) highlights the company's strong positioning in the renewable energy sector, serving a diverse range of clients with scalable, innovative, and sustainable energy solutions. AGEL's ability to provide low-cost, reliable energy has solidified its market standing and opened opportunities for growth in new markets. By focusing on customer needs through tailored solutions and effective CRM strategies, AGEL ensures high customer satisfaction and loyalty. This customer-centric approach will be crucial for AGEL's continued success and competitive advantage in the evolving renewable energy industry.

CHAPTER-6

ACTUAL WORK DONE

During my internship at Adani Green Energy Limited, I was actively involved in various tasks within the Finance and Accounting Department, particularly in the Project Financing division. My responsibilities spanned across document review, data preparation, compliance tasks, and active participation in high-level project discussions. The work was centred on the Khavda, Gujarat project, one of the company's major renewable energy initiatives. My role required a thorough understanding of legal and financial documents, coordination with different teams, and meticulous attention to detail in managing project-related documentation and financial models. This hands-on experience provided me with valuable insights into the complexities of project financing in the renewable energy sector.

Below is a detailed account of the work I accomplished during my internship:

Document Review

At the outset of my internship, I was tasked with reviewing critical documents, including the Memorandum of Association (MOA) and Articles of Association (AOA) of Adani Green Energy Limited. This review provided me with an understanding of the company's legal framework, core principles, and governance structure. Additionally, I analysed the company's annual report and the latest investor presentation, which offered insights into the financial health, performance metrics, and strategic objectives of the organization. This foundational knowledge was essential for my subsequent tasks and helped me align my work with the company's broader goals.

Data Preparation

One of my initial assignments involved preparing an Excel sheet with detailed information about the board of directors. This task required accuracy and attention to detail, as the data was crucial for internal references and decision-making processes. In collaboration with the banking department, I also contributed to the preparation of a PowerPoint presentation on "Banking and Operations." This presentation was designed to provide insights into the company's banking relationships and operational strategies, further enhancing my understanding of the financial operations within Adani Green Energy Limited.

Project Assignment: Khavda, Gujarat

A significant portion of my internship was dedicated to the Khavda, Gujarat project, which focuses on large-scale solar and wind energy production. I was introduced to the project's scope and objectives, including the generation of 30 gigawatts (GW) of electricity over an area of 72,600 hectares. My primary responsibility was to study and analyse the term sheet associated with this project, which detailed the financing structure, terms, and conditions. This analysis was crucial for understanding the financial underpinnings of the project and preparing for subsequent tasks related to securing project financing.

Legal Compliance and Documentation

In weeks two and three, my work expanded to include legal compliance and documentation tasks. I engaged in discussions with my team to thoroughly understand the term sheet's components and implications. I participated in meetings with the lender's legal counsel to align on legal requirements and ensure compliance. My responsibilities included preparing Pre-Commitment Conditions (PCC) and Pre-Disbursement Conditions (PDC) based on the term sheet. Additionally, I collected and certified true copies (CTC) of essential documents, completed KYC documentation for all authorized signatories, and oversaw the signing of documents. These tasks were integral to maintaining regulatory compliance and ensuring that all legal obligations were met.

Organization and Preparation for Loan Sanction

A key aspect of my role involved organizing and preparing documentation for the loan sanction process. I meticulously organized project folders and ensured that all necessary paperwork was in order. This included printing and arranging documents required for sanction approval. Following this preparation, our team travelled to Mumbai and Delhi to secure the sanction of a loan amounting to INR 4000 crore for the Khavda project. During this period, I was also tasked with inputting historical data into a financial model, a crucial step for projecting the project's future financial performance and ensuring that the financial model accurately reflected the project's potential.

Financial Modelling

During the period when the team travelled to Mumbai and Delhi to secure the loan sanction for the Khavda project, I was entrusted with the task of inputting historical financial data into a

financial model. This task was crucial for projecting the future financial performance of the project.

The financial model served as a key tool in forecasting the project's profitability, cash flows, and overall financial viability over time. By incorporating historical data, I was able to establish a baseline that reflected past financial performance, which is essential for making accurate predictions about the future. This involved a meticulous process of gathering and verifying historical financial records, including revenue, expenses, capital expenditures, and other relevant financial metrics.

Post-Sanction Work

Following the sanction of the loan, I began working on the post-sanction requirements for the project. This phase involved ensuring that all conditions set by the lenders were met and that the necessary documentation was in order. My responsibilities included finalizing compliance measures and assisting in the implementation phase of the project. This work was critical to the successful execution of the Khavda project, as it ensured that the project adhered to all financial and legal stipulations, paving the way for its smooth progress.

Visit to Canara Bank

As part of the consortium lender group, I had the opportunity to visit Canara Bank's main office along with a colleague. Our primary objective during this visit was to prepare a credit note, an essential document required for the loan sanction process. This experience provided me with valuable insights into the workings of consortium lending and the coordination required between different financial institutions. The preparation of the credit note was a critical step in ensuring that the Khavda project met all financial requirements, and it further solidified my understanding of the complexities involved in large-scale project financing.

Key Responsibilities:

- **Data Handling:** Managing documentation, compliance tasks, and financial modelling.
- **Project Involvement:** Contributing to the Khavda project by understanding and processing term sheets, preparing necessary conditions, and ensuring proper documentation.

My work during this internship at Adani Green Energy Limited has provided me with a deep understanding of the intricacies involved in project financing within the renewable energy

sector. From document review and data preparation to legal compliance and financial modelling, each task contributed to my professional growth and enhanced my practical skills. Engaging in high-level meetings, participating in critical discussions, and being involved in the loan sanction process for the Khavda project were particularly valuable experiences that broadened my knowledge of the financial strategies required for large-scale renewable energy projects. This hands-on exposure has significantly contributed to my development as a finance professional and has equipped me with the tools and insights necessary for future challenges in the industry.

FINDINGS & ANALYSIS

Throughout my internship at Adani Green Energy Limited, I undertook a series of tasks that provided me with valuable insights into the project financing process for large-scale renewable energy projects. The experiences and challenges I encountered during my work, particularly in the analysis of legal documents, financial modelling, and compliance procedures, led to several key findings. These findings not only reflect the complexities of securing financing for renewable energy projects but also highlight the strategic considerations necessary for successful project execution. The following section outlines the major findings from my internship, offering a detailed perspective on the critical aspects of project financing within this dynamic industry.

Project Finance Overview

A borrower has access to project finance, which is a long-term, zero or restricted recourse financing option secured by the project-related rights, assets, and interests. The cash flow created once the project is finished can be used to repay the loan instead of the sponsors' balance sheets. The lender has the right to take over the project if the borrower doesn't abide by the loan's conditions. Additionally, if a business uses this strategy while partially moving the associated project risks, financial organizations can generate higher margins. Therefore, sponsors, businesses, and lenders all significantly favor this form of financing arrangement.

A Special Purpose Vehicle (SPV) is created as an intermediary to fill the gap between sponsors and lenders. The SPV's primary responsibility is to oversee the administration and purchase of funds to prevent project assets from being lost as a result of project failure. To prevent any future complications, it is crucial that all project risks are recognized and distributed before a lender decides to finance the project.

Why SPV?

The special purpose vehicle is a risk management mechanism. There's a concept of "ring-fencing" and control so that there is limited liability for the project sponsor. The sponsor only risks the money invested into the company and the SPV is shielded from the sponsor's holding company.

The project company is financed with debt and equity. Once the project is built, the company may sell its energy to PPA (Power Purchase Agreement) customer. This becomes a secure, long term revenue steam for the project company. The market risk is taken by off taker (Customer). Construction risk is taken by the O&M (Operation & Management) contractor. This way, the risks are not borne solely by the project company.

Features of project finance

• Capital-Intensive Financing Scheme: Project financing, which is frequently used in developing nations because it promotes economic growth, is excellent for initiatives involving significant amounts of equity and debt. This financing method increases costs while decreasing liquidity because it is more expensive than corporate loans. Projects covered by this plan also frequently involve political risk and emerging market risk. The project must also pay high fees to be insured against these hazards.

• Risk Allocation: As part of this financial plan, some project-related risks are transferred to the lender. Sponsors prefer to use this funding program as a result since it reduces part of their risk. On the other hand, project financing offers lenders a higher credit margin.

• Multiple Participants May Be Relevant: Since project financing frequently relates to large-scale projects, it may be appropriate to involve multiple parties in the project to handle its varied components. This facilitates the smooth execution of the whole procedure.

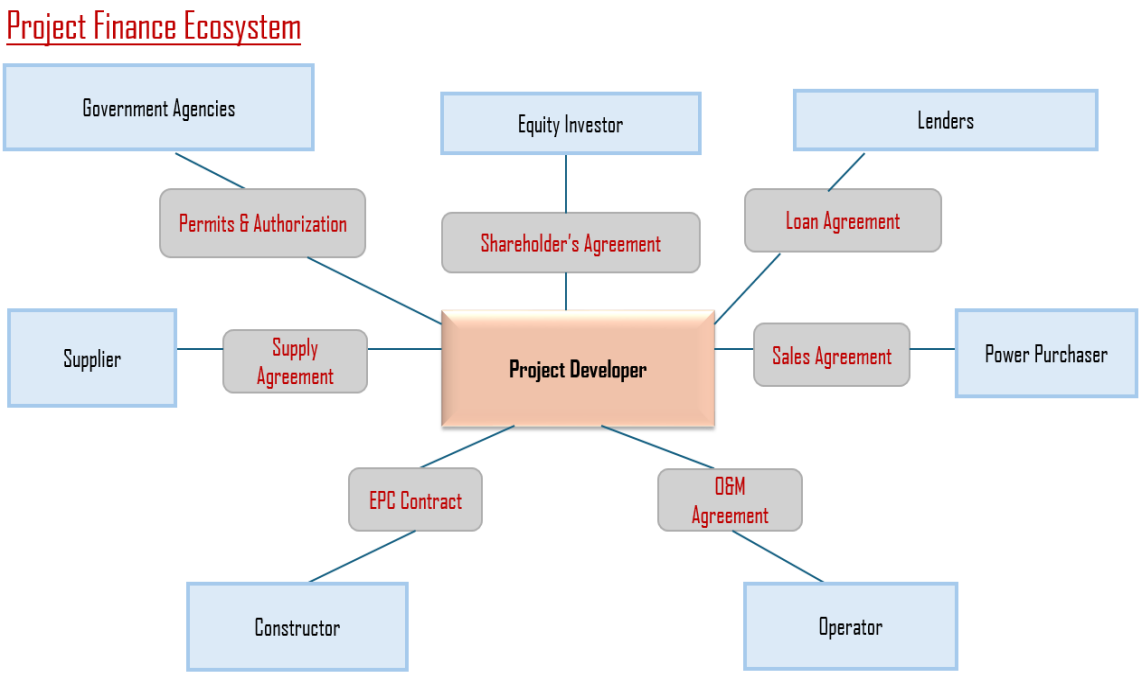
• Asset Ownership is Determined at Project Completion: The Special Purpose Vehicle is tasked with overseeing project activities and keeping an eye on any project-related assets. After the project is finished, the responsible entity receives project ownership in accordance with the loan's terms.

• Zero or Limited Recourse Financing Solution: Since the borrower does not take possession of the project until it is finished, the lenders are spared the time and expense of examining the borrower's assets and reputation. Instead, the lender may concentrate on the project's viability. If the financial services company determines that the project might not be able to produce

adequate cash flow to repay the loan after completion, it can choose limited recourse from the sponsors.

• Loan Repayment Using Project Cash Flow: Under the terms of the loan in Project Financing, any extra cash flow obtained by the project shall be applied to the borrower's existing debt. This will lessen the financial services company's risk exposure as the debt is gradually repaid.
• Better Tax Treatment: The project and/or the sponsors may benefit from better tax treatment if project financing is put into place. Sponsors choose to use this structured financing option as a result when receiving funding for lengthy projects.

• Sponsor Credit Has No Impact on Project: While this long-term financing strategy maximizes a project's leverage, it also makes sure that the sponsor's credit status has no detrimental effects on the project. Because of this, the credit risk of the project is frequently lower than the sponsor's credit ratings.



The diagram shows the different parties involved in the financing of the project and the documents between them. Here is a breakdown of the main actors and documents involved:

- Government agencies: They are responsible for issuing project permits and authorizations
- Equity investors: These are investors who provide capital to the project in exchange for ownership shares.
- Lenders: These are financial institutions that offer loans to finance a project.
- Designer: The entity responsible for project development.
- Supplier: an entity that supplies products and services for a project.
- Builder: The entity building the project.
- Operator: an entity that uses a project after it is built.
- Potential buyer: entity that purchases project output, e.g. electricity based on electrical plan.

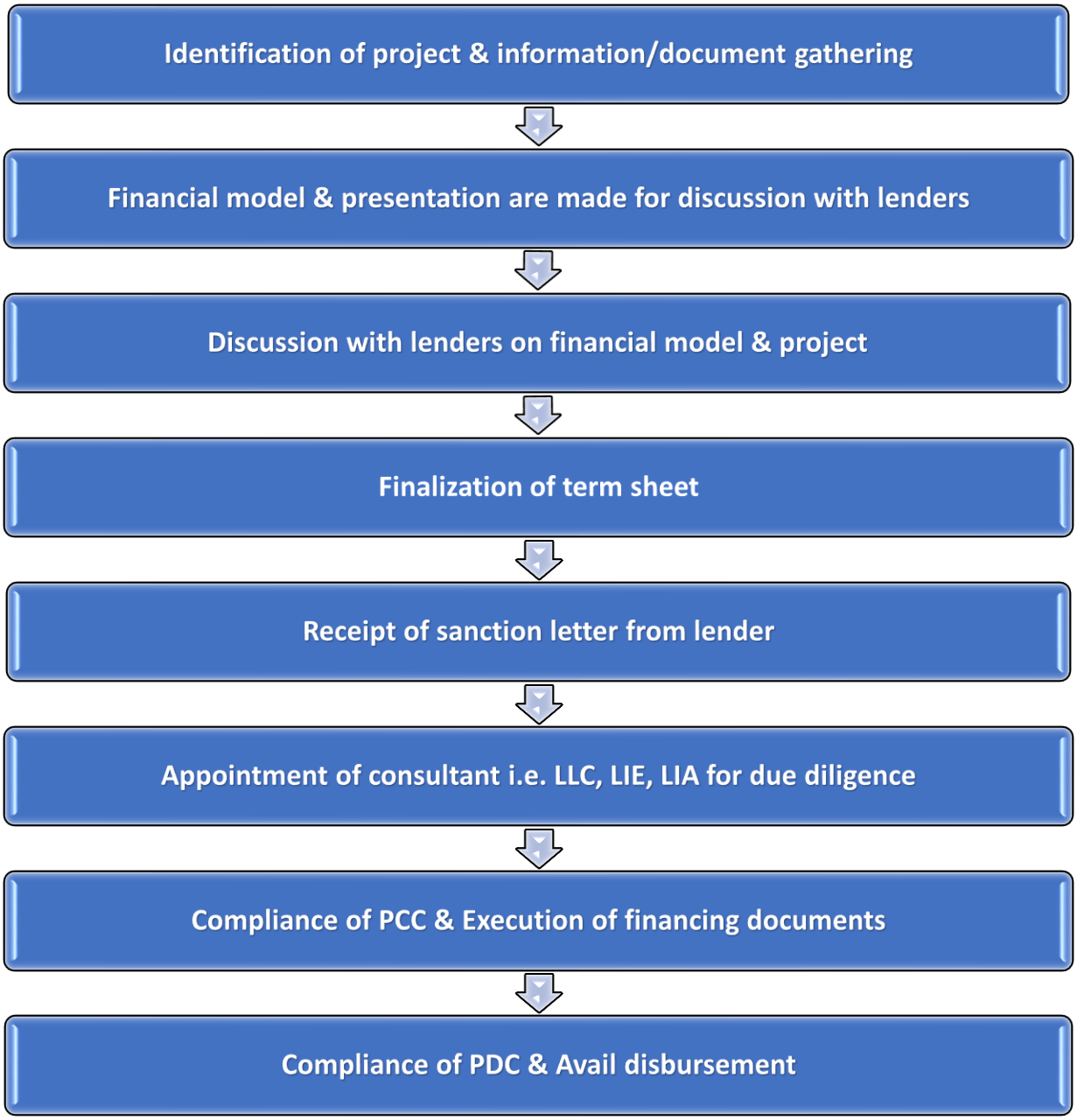
The following documents are exchanged between the various parties:

- Loan Agreement: This describes the terms of the loan between the borrower and the lender.
- Shareholders Agreement: This defines the rights and obligations of equity investors.
- Sales Agreement: This agreement defines the terms of sale of the project output.
- Supply Agreement: This contract defines the terms of supply of goods and services for the project.
- EPC Contract: This is a lump sum contract for the design, procurement and construction of a project.
- Use and Maintenance Agreement: This agreement defines the terms of use and maintenance of the project.

Process of Domestic Financing:

Project financing includes several steps to secure funding. First, the project is determined and all its details are drawn. This information is used to build a financial model that predicts the performance of the project. This model is then presented to potential lenders to secure their interest. After discussion and addressing the lender's concerns, a term is agreed upon that outlines the main terms of the loan. With official approval (letter of approval), consultants can be hired to review project details and assess risks. Finally, the borrower fulfills certain conditions before receiving the loan money.

This process can be discussed in detailed as follows:



STANDARD OPERATING PROCEDURE

The following outlines the Standard Operating Procedures (SOP) for the domestic financing process at Adani Green Energy Limited (AGEL). It details the steps involved in securing financial closure for projects, from pre-application to disbursement and security creation. The process is designed to ensure compliance with internal and external requirements, optimize financing terms, and facilitate efficient project execution.

Phase-1: Pre-Application – Project Identification and Analysis

SOP	Required Action	Best Practices
Project Identification	• Identification of the project for which financial closure is required. Factors to be considered: o Scheduled COD o Conditions subsequent of the PPA o Strategic significance / adjacencies of project execution	• Scheduled COD should be at least 3 months after internal target COD • Conditions subsequent to PPA should be complied • Dependencies such as connectivity should be operational/expected to be operational before internal target COD
Information gathering-Project Documents	• PPA including subsequent Amendments • PSA • Tariff Orders • Land Lease Agreement • Supply & Service Contract • Third Party Technical Assessment • Connectivity Agreement	• All agreements, contracts and studies are signed by respective team in pre-application phase
Information gathering-Operational Parameters	• Gathering and confirmation of operational parameters such as: o CUF o O&M Costs o Land Lease Contract	• Confirmation on technical assessment from Resource team • Confirmation of Cost from respective team

	○ Park / Development Charges ○ Finance Cost ○ Pre-operative Costs ○ Timeline of project execution including capex phasing	
Financial Model-Projection, Debt sizing, Viability Analysis	• Prepare financial projections based on operational parameters and project documents • Run scenario analysis to ensure the viability in adverse conditions of banking case	• Project should be viable in terms of banking case, considering covenants based on: ○ Average and minimum DSCR ○ PLCR ○ Debt sizing and tenure matching with asset life

Phase 1: Pre-Application – Lender Identification

SOP	Required Action	Preferred conditions
Borrowing Limits	• Checking the borrowing limits available	• We try to combine a sizeable project and go for construction facility in line with capital management
Commercials	• Commercials of previous projects financed • Commercials based on the merits of the proposed project	• Lender permits reduction of interest cost post operationalization
Covenants, Reserves, Restrictions and Distribution	• Covenants typically imposed by the lenders in terms of:	• Corporate Guarantee should fall off automatically upon

	○ Restricted payment conditions ○ Financial Covenants ○ Definition of event of default ○ Requirement of Corporate Guarantee ○ Requirement of DSRA and other reserves	operationalization i.e. mitigation of construction risk • DSRA requirement of one quarter equivalent
Capital Structure	• Equity capital structure and infusion ○ Minimum share capital requirement ○ Instruments such as unsecured loan as part of capital structure	
Lender Identification	• Security package requirements: ○ Pledge of share ○ Deed of hypothecation ○ Mortgage creation ○ Assignments of rights	• Required pledge of share as low as possible

Phase 2: Application and Appraisal

SOP	Required Action

Entity Appraisal: Company Docs and KYC	• Constitutional Documents
	  ○ COI
	  ○ MoA and AoA
	  ○ PAN, TAN, GST
	• KYC of company and directors
	• Directors profile

Entity Appraisal: Certification from management	• Management signed certificate relating to no pending dues, tax, litigation etc.

Entity Appraisal: Statutory Auditor Certificates	• Statutory Auditor Certificates relating to
	  ○ No default
	  ○ No director disqualification
	  ○ Equity infused in project

Entity Appraisal: Equity Infusion Plan	• Equity infusion plans and availability of sufficient fund for the project ○ Promoter cash flow projections and requirement during the timeline of the project execution
Project Appraisal	• Providing documents as gathered in Phase-1 • Scenario analysis with lender • Project progress and status • Query resolution • Site visit if necessary

Phase 3: Sanctioning Of term Loan

SOP	Required Action	Preferred Conditions
Pre- Sanction	• Receipt of draft term sheet from lender for finalization of terms and required negotiations	We will prefer to negotiate with the lenders in accordance with the standard terms and conditions.

	• Comparison with other peer project and the standard terms and conditions
	  o Commercials i.e. fees and interest rate
	  o Security being offered to the lender
	  o Any Call / put option in the draft term sheet
	  o Permitted finance debt and permitted security interest
	  o Restricted payment clause and permitted investment
	• Any major deviation from the standard terms to be negotiated with the lender
	• Basis the discussion the lender will take the proposal to the Committee / Board
		• Post COD rebate in interest rate – upon mitigation of construction risk
		• Cross default and EOD linked to promoter shall be specified
		• corporate Guarantee if any shall be till the construction period only

Sanction	• upon approval from the committee the lender will intimate us to pay the relevant fees • on payment of the fees the lender will issue the final sanction letter	

Phase 4.1: Post Sanction

SOP	Required Action
Modification and Internal approval	• modification if any required in the sanction letter can be discussed internally and to be requested to the lender for the same.

	• Review of the sanction letter and initiate the NFA for approval of the sanction letter and along with the material deviation from the standard term sheet.
Appointment of Agencies	• Lender upon acceptance of the sanction letter will appoint various agency for the due diligence of the project and the entity o Lender Legal Counsel o Project Monitoring Agency (incl. Lender Independent Engineer, Lender Finance Advisor, Lender Insurance Advisor)
Compliance with the PCC	• Compliance with the pre commitment conditions as mentioned in the sanction letter "PCC Conditions" with the lenders and the above agencies • PCC usually includes No default confirmation, director non disqualification confirmation, Board resolution accepting the sanction letter and creation of the charges on projects as mentioned in the sanction letter, borrowing power etc.

Phase 4.2: Documents Execution and Disbursement

SOP	**Required Action**
Execution of the documentation	• Once the PCC are complied lenders will instruct LLC to draft the loan documents • Major loan documents are as under

Disbursement	• Upon execution of the documents, we have to comply with the PDC i.e. pre disbursement condition. Some of the PDC's are o Project due diligence and progress by PMA o Legal due diligence report, by LLC o Draw down certificate from the PMA o Various certificates and undertakings o Infusion of minimum equity as per the sanction Upon complying with the PDC the lender will make the first disbursement. Any subsequent disbursement shall be upon the project progress and proportionate equity infusion and compliance with subsequent disbursement conditions.

Phase 5: Credit rating and Security Creation

SOP	**Required Action**
Credit Rating	• Appointment of Rating Agency • Financial model for credit rating with scenario analysis • Monitoring key credit metrics such as receivable position, counter party risk, leverage etc. • Rating presentation • Query resolution
Security Creation	• Creation of security based on the security package and within stipulated timelines: o Share pledge agreement o Mortgage creation

Explanation

Pre-Application Phase – Project Identification & Analysis

Analysis:

- Importance: This phase plays a pivotal role in setting the foundation for successful project financing by identifying viable projects aligned with AGEL's strategic objectives.
- Key Activities: It involves screening potential projects based on technical feasibility, financial viability, and environmental impact. Detailed analysis helps in assessing risks and estimating returns accurately.
- Interpretation: Effective project identification and analysis ensure that AGEL invests resources in projects with the highest likelihood of success, optimizing returns and minimizing risks.

Pre-Application Phase– Lender Identification

Analysis:

- Importance: Identifying suitable lenders early in the process is crucial for securing financing on favorable terms.
- Key Activities: This phase involves researching and evaluating potential lenders based on their expertise in renewable energy financing, risk appetite, and alignment with AGEL's values.
- Interpretation: Building strong relationships with lenders enhances AGEL's ability to negotiate favorable financing terms, access competitive loan packages, and ensure smooth project execution.

Application and Appraisal Phase

Analysis:

- Importance: The application and appraisal phase is critical as it determines the feasibility and creditworthiness of the project.
- Key Activities: AGEL prepares and submits comprehensive loan applications, accompanied by detailed project appraisals that assess technical feasibility, financial projections, and environmental impacts.

- Interpretation: Thorough appraisal processes help in securing lender approvals by demonstrating the project's potential for profitability, sustainability, and compliance with regulatory requirements.

Sanctioning of Term Loan Phase

Analysis:

- Importance: Securing sanction for term loans involves rigorous due diligence and credit assessment by lenders.
- Key Activities: Lenders evaluate AGEL's financial health, project risks, and repayment capacity before sanctioning loans. Negotiations on terms and conditions are crucial in this phase.
- Interpretation: Successful sanctioning of term loans indicates lender confidence in AGEL's project and financial management capabilities. It provides the necessary financial resources to proceed with project implementation.

Post Sanction Phase

Analysis:

- Importance: Post-sanction management focuses on fund disbursement, project monitoring, and compliance with loan agreements.
- Key Activities: AGEL implements systems for monitoring project progress, financial performance, and adherence to loan covenants. Regular reporting and communication with lenders are essential.
- Interpretation: Effective post-sanction management ensures that projects stay on track, mitigates risks, and maintains lender trust. It involves proactive risk management and timely resolution of any issues that may arise.

Document Execution & Disbursement Phase

Analysis:

- Importance: Document execution and fund disbursement involve legal and procedural requirements that ensure the formalization of financing agreements.
- Key Activities: AGEL coordinates with legal advisors and stakeholders to execute loan agreements and disburse funds according to agreed terms and conditions.

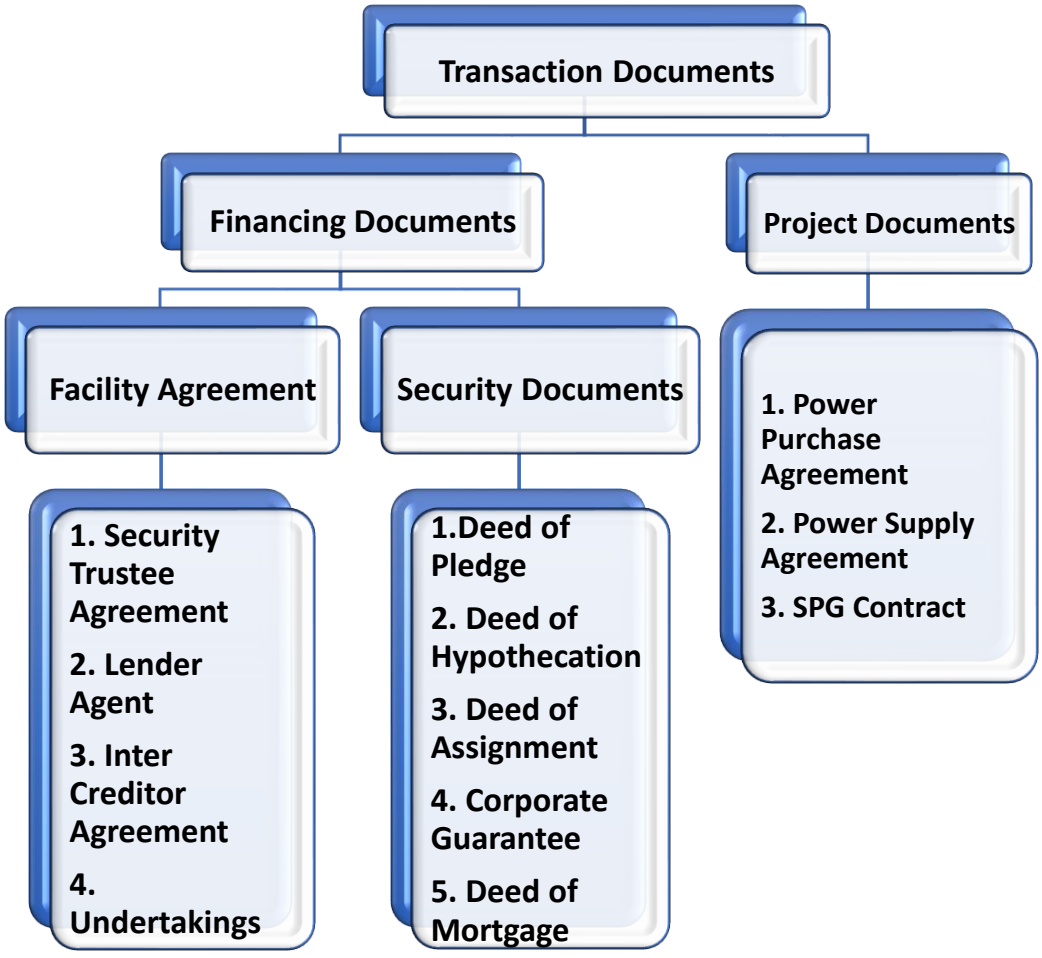
- Interpretation: Smooth execution and disbursement processes prevent delays and legal complications, ensuring that projects receive timely funding and commence operations as planned.

Credit Rating and Security Creation Phase

Analysis:

- Importance: Credit rating and security creation are critical for protecting lender interests and maintaining financial credibility.
- Key Activities: AGEL obtains credit ratings based on financial performance and risk management practices. Securities are created to secure project assets and mitigate lender risks.
- Interpretation: Favorable credit ratings and robust security arrangements enhance AGEL's ability to access future financing at competitive rates. They reflect strong financial health and commitment to risk management.

Financing Documents



1. **Facility Agreement:**

The agreement is between borrower and lender. It is the main document specifying terms and condition of the loan facility. All agreements and obligations of the borrower flows from this agreement.

I. **Security Trustee Agreement**:

When there is more than one lender the security trustee is appointed who hold security on behalf of lender and agreement decide roles and responsibility of the trustee.

II. **Lender Agent Agreement**:

When there is more than one lender the lender with in themselves appoint one lender as agent who will do all compliance related to the project and give review to another lender.

III. **Inter Creditor Agreement:**

When there is more than one lender the inter creditor agreement is executed and there is no role of borrower under the agreement. The agreement mentioned how major decision are taken by lender in normal course of business and in case of event of default.

IV. **Undertakings:**

Undertaking is a part of facility agreement where borrower agrees to share relevant document/ information on timely basis (Financial Statements, CUF Number etc.)

2. **Security Documents:**

I. **Deed of Pledge:**

The pledge agreement is executed where borrower pledge the equity share and OCD/ICD as per agreement in favour of security trustee in form of security to lenders.

II. **Deed of hypothecation:**

The deed of hypothecation is executed against the movable properties of the borrower including cash balance, bank balance, current asset etc.

III. **Corporate Guarantee:**

This guarantee is given by third party on behalf of borrower to the lender that if borrower fails to comply any condition as mentioned in agreement the third party will be liable for the same and will act on behalf of borrower.

IV. **Deed of Mortgage:**

The mortgage is done against immovable property. There are two types of mortgages.

a. Registered mortgage

b. Equitable mortgage or mortgage by way of depositing title deed

3. Project Documents:

I. **Power Purchase Agreement:**

The PPA is long term agreement between power producer and supplier. It defines the conditions of the agreement, such as amount of electricity to be supplied, negotiated, prices, accounting, penalties for non-compliance, rebate, late payment surcharge etc.

II. **Power Supply Agreement:**

It is a contract between power supplier and purchaser. The key terms in the contract cover how much power is being supplied, what the purchase price is, and how payment schedules will work.

III. **EPC Contract:**

An EPC contract is a way to mitigate risks without getting involved much in the project management. EPC contracts are designed deliberately to shift the construction risk to contractor. They hold the contractor accountable for all the project operations from the design phase to the construction phase.

As part of EPC contracting agreement, the EPC contractor or EPC company undertakes three important components of s project:

- Engineering and Design
- Procurement
- Construct

IV. **Trust and Retention Agreement:**

The agreement is executed for opening bank account where all money of the project is deposited in the sub account open in the bank as per cash waterfall.

V. **Land lease Agreement:**

The agreement between two parties – lessor (could be anybody like Government) and lessee (Borrower). It outlines the conditions of the arrangement so that each party understands his rights and obligations under the lease.

CHAPTER-7

CONCLUSIONS

The internship project on A Study on Domestic Financing Process for Renewable Energy Projects at Adani Green Energy Ltd (AGEL) provided valuable insights into the processes involved in financing renewable energy projects. Covering each stage from pre-application to credit rating and security creation, the project offered a comprehensive understanding of the key steps necessary for successful financing.

During the project identification and analysis phase, careful selection of projects was emphasized to ensure alignment with AGEL's strategic objectives, which helps minimize risks and optimize returns. Early identification and engagement with potential lenders were crucial in securing favourable financing terms and building strong lender relationships. The application and appraisal phase highlighted the importance of thorough project appraisals and well-prepared loan applications, as these are critical in gaining lender approvals by demonstrating the project's feasibility and profitability.

The successful sanctioning of term loans reflected the lenders' confidence in AGEL's project and financial management capabilities, providing essential resources for project implementation. Post-sanction management, including fund disbursement, project monitoring, and compliance with loan agreements, was identified as key to keeping projects on track and maintaining lender trust. Additionally, the smooth execution of documents and disbursement processes was vital in preventing delays and legal complications, ensuring that projects commenced on time.

Lastly, the project underscored the importance of favourable credit ratings and strong security arrangements, which enhance AGEL's ability to access future financing at competitive rates. However, the project also acknowledged limitations such as financial and time constraints, data gaps, regulatory uncertainties, technological challenges, and human resource limitations. Recognizing these challenges provides a foundation for continuous improvement and strategic adaptation in future financing efforts.

SUGGESTIONS

To overcome the limitations and further enhance the project financing processes, several strategic recommendations have been proposed:

- Increase budget flexibility to address project needs and unforeseen challenges.
- Utilize advanced project management tools to improve planning and execution.
- Invest in robust data management systems.
- Establish a comprehensive risk management framework.
- Strengthen Human Resources through training and development programs.
- Develop a structured stakeholder engagement plan.
- Implement mechanisms for ongoing evaluation and refinement of financing processes.

CHAPTER-8

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