A Study on Discounted Cash Flow Valuation of Ntpc Ltd: A Five-Year Balance Sheet–Based Analysis (Fy 2020–21 To Fy 2024–25)

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ABSTRACT

This study examines the intrinsic valuation of NTPC Limited using the Discounted Cash Flow (DCF) method based on a five-year balance sheet analysis from FY 2020–21 to FY 2024–25. The research adopts a quantitative and analytical approach, utilizing secondary data from financial statements, annual reports, and relevant literature to assess the company's financial performance, capital structure, and cash flow generation capacity.

The study applies the Free Cash Flow to Firm (FCFF) approach to estimate future cash flows and determine enterprise and equity value. The findings reveal that NTPC has maintained stable growth, with assets growing at a CAGR of 4.43% and equity at 7.96%, along with a declining Debt–Equity ratio from 1.38x to 1.15x, indicating improved financial stability. The DCF valuation estimates an enterprise value of ₹10,27,160 Cr. and an equity value of ₹8,41,917 Cr., resulting in a fair value of ₹15,102 per share.

The analysis highlights that a significant portion of value (76.4%) is derived from terminal value, reflecting the long-term and stable nature of cash flows in the power sector. Sensitivity analysis further indicates that valuation is highly dependent on key assumptions such as Weighted Average Cost of Capital (WACC) and growth rates. The study also considers NTPC's strategic transition towards renewable energy, which enhances its future growth potential.

Overall, the study concludes that NTPC Limited is fundamentally strong, financially stable, and well-positioned for long-term value creation, making it a reliable investment option in the power sector. However, the accuracy of valuation is subject to assumptions and external factors.

Keywords: Discounted Cash Flow (DCF), Free Cash Flow to Firm (FCFF), Intrinsic Valuation, NTPC Limited, WACC, Financial Performance, Capital Structure, Power Sector, Terminal Value, Sensitivity Analysis

INTRODUCTION OF THE STUDY

The valuation of companies plays a crucial role in financial decision-making, investment analysis, and corporate strategy formulation. Among various valuation techniques, the Discounted Cash Flow (DCF) method is widely regarded as one of the most reliable and theoretically sound approaches, as it estimates the intrinsic value of a firm based on its expected future cash flows. This method is particularly relevant for capital-intensive and regulated industries such as the power sector, where cash flows are relatively stable and predictable.

NTPC Limited, India's largest power utility and a Maharatna Public Sector Undertaking (PSU), plays a pivotal role in the country's energy security and infrastructure development. With a diversified portfolio spanning thermal, hydro, and renewable energy sources, NTPC has demonstrated consistent financial performance supported by regulated returns, long-term power purchase agreements, and strong government backing. These characteristics make NTPC an ideal candidate for applying the DCF valuation model.

This study focuses on analysing the financial performance and intrinsic valuation of NTPC Limited over a five-year period from FY 2020–21 to FY 2024–25 using balance sheet-based data. The research aims to assess the company's capital structure, growth trajectory, and cash flow generation capacity, which are critical inputs in determining its fair value. By incorporating key financial metrics such as assets, equity, debt, and free cash flows, the study constructs a comprehensive valuation framework based on the Free Cash Flow to Firm (FCFF) approach.

Furthermore, the study evaluates the impact of key assumptions such as Weighted Average Cost of Capital (WACC), revenue growth, and terminal growth rate on the overall valuation. Sensitivity analysis is employed to understand how variations in these parameters influence the intrinsic value of the firm. This is particularly important in the context of NTPC, where a significant portion of value is derived from long-term projections due to the nature of utility operations.

The relevance of this study is further enhanced by the ongoing transition in India's power sector towards renewable energy and sustainable growth. NTPC's strategic expansion into green energy, including solar, wind, and hydrogen projects, introduces new growth opportunities as well as valuation complexities. Therefore, this research not only provides insights into NTPC's current financial standing but also evaluates its long-term value creation potential in a transforming energy landscape.

REVIEW OF LITERATURE

Periwal & Mudda (2026) "NTPC Company Update" - Provides Q3FY26 financial analysis and FY26-28E projections for NTPC, highlighting stable PAT growth (4% YoY 9MFY26), superior coal PLF (70.7% vs. India 60.8%), and 33GW capacity pipeline (10% CAGR). Uses SoTP valuation (TP Rs423/share, 2.1x FY28E PBV) emphasizing regulated ROE stability and NGEL renewable execution; validates study's WACC/FCFF assumptions amid DISCOM reforms.

Sah (2026) "A Decadal Analysis of the Financial Performance of India's Power Sector: NTPC Limited 2015-2025" - Employs ratio analysis (ROE 11.6-13.1%, D/E 1.20→1.50, liquidity 0.91 CR avg) on NTPC FY15-25 data, revealing revenue CAGR 9.4%, modest profitability amid leverage. Regression shows liquidity/efficiency drive ROCE; highlights renewable pivot (6% non-fossil FY25) for future upside, directly benchmarking study's DCF inputs.

AlphaSpread (2026) "NTPC DCF Valuation Model" - Two-stage DCF yields Rs288.43/share intrinsic (23% below market Rs376.4), with 2.8T INR PV emphasizing terminal dominance; confirms utility DCF structure and WACC sensitivity, though conservative vs. study's Rs15,102 base (64% upside post-rally).

Saboo & Srivastava (2022) "Renewable Energy Financing Landscape in India: The Journey So Far and the Need of the Hour" - Chronicles RE debt evolution from NBFC dominance to bank leadership (SBI Rs330bn exposure), international bonds (USD1bn+ issuances), and equity from sovereigns (GIC, CDPQ). Identifies gaps in greenfield/hybrid funding, stresses 20-yr DFI tenors for 500GW target; supports NTPC's 60GW renewable capex realism and terminal growth conservatism.

PROBLEM STATEMENT

In the modern financial environment, determining the true intrinsic value of a company remains a significant challenge for investors and analysts. Market prices are often influenced by external factors such as market sentiment, regulatory changes, and macroeconomic conditions, which may not accurately reflect a company's fundamental financial strength.

NTPC Limited, despite being a stable and government-backed utility, operates in a capital-intensive and highly regulated sector where valuation becomes complex. Factors such as fluctuating interest rates, changing energy policies, increasing debt levels, and the transition towards renewable energy create uncertainty in estimating future cash flows and growth prospects.

Additionally, a major issue in DCF valuation is the high sensitivity to assumptions like the Weighted Average Cost of Capital (WACC), revenue growth rate, and terminal growth rate. Small variations in these inputs can lead to significant differences in valuation outcomes, making it difficult to arrive at a precise and reliable estimate of the company's intrinsic value.

Therefore, the core problem of this study is to assess whether the DCF valuation model can accurately estimate the intrinsic value of NTPC Limited using historical financial data, and to understand how key financial assumptions influence the valuation. This study seeks to bridge the gap between market valuation and fundamental value by applying a structured DCF approach to NTPC over a five-year period.

RESEARCH GAP

Although several studies have analysed the financial performance and valuation of NTPC Limited, there are notable gaps in the existing literature.

Most prior research focuses on ratio analysis, sectoral performance, or short-term financial evaluations, with limited emphasis on comprehensive intrinsic valuation using the Discounted Cash Flow (DCF) method. While some studies and reports apply DCF models, they often rely on generalized assumptions or forward-looking projections without systematically integrating historical balance sheet data.

Additionally, there is a lack of studies that combine a five-year historical financial analysis with DCF valuation to assess how past performance influences future cash flow estimation. Existing literature also provides limited insight into the sensitivity of valuation to key assumptions such as WACC, growth rate, and terminal value, especially in the context of regulated utilities like NTPC.

Furthermore, the ongoing transition towards renewable energy and its impact on NTPC's long-term valuation has not been adequately incorporated into traditional valuation models.

Therefore, this study attempts to fill these gaps by applying a structured DCF (FCFF) approach based on five years of financial data, along with sensitivity analysis, to provide a more realistic and comprehensive valuation of NTPC Limited.

SCOPE OF THE STUDY

This study focuses on evaluating the intrinsic value of NTPC Limited using the Discounted Cash Flow (DCF) valuation method based on historical financial data.

The scope of the study is limited to a five-year period from FY 2020–21 to FY 2024–25, analyzing key financial components such as total assets, equity, debt, and capital structure. It applies the Free Cash Flow to Firm (FCFF) approach to estimate future cash flows and determine the company's enterprise and equity value.

The study also includes the analysis of important valuation parameters such as revenue growth rate, Weighted Average Cost of Capital (WACC), and terminal growth rate. A sensitivity analysis is carried out to understand the impact of changes in these assumptions on the valuation outcome.

Further, the research considers the nature of the power sector, including regulatory framework and NTPC's transition towards renewable energy, to provide relevant insights into its long-term growth potential.

However, the study is restricted to secondary data sources and does not account for unexpected market fluctuations or qualitative factors such as management decisions and policy changes beyond the study period.

Overall, the study aims to provide a structured financial valuation of NTPC Limited and assist investors and analysts in understanding its value creation potential.

OBJECTIVES OF THE STUDY

- To analyze the financial performance and capital structure of NTPC Limited over the period FY 2020–21 to FY 2024–25.
- To estimate the intrinsic value of the company using the Discounted Cash Flow (DCF) method based on the Free Cash Flow to Firm (FCFF) approach.
- To evaluate key valuation parameters such as revenue growth rate, Weighted Average Cost of Capital (WACC), and terminal growth rate.
- To examine the sensitivity of the valuation to changes in key assumptions and assess the company's long-term value creation potential.

RESEARCH METHODOLOGY

This study adopts a quantitative and analytical research approach to evaluate the intrinsic value of NTPC Limited using the Discounted Cash Flow (DCF) method.

Research Design

The study is based on a descriptive and analytical research design, focusing on the evaluation of financial performance and valuation using historical data.

Data Source

The study relies entirely on secondary data, collected from:

- Annual reports of NTPC Limited
- Financial statements (Balance Sheet, Profit & Loss Account)
- Published research articles, company reports, and financial databases

Period of Study

The analysis covers a period of **five financial years from FY 2020–21 to FY 2024–25**.

Tools and Techniques Used

- Financial statement analysis (Assets, Equity, Debt, Ratios)
- Discounted Cash Flow (DCF) valuation method
- Free Cash Flow to Firm (FCFF) approach
- Weighted Average Cost of Capital (WACC) calculation
- Sensitivity analysis

Method of Analysis

Historical financial data is analyzed to identify trends in performance and capital structure. Based on these trends, future cash flows are projected and discounted using WACC to determine enterprise and equity value. Sensitivity analysis is conducted to assess the impact of key assumptions on valuation.

Limitations of the Study

- The study is based only on secondary data
- Valuation depends on assumptions which may vary in real conditions
- External factors such as policy changes and market volatility are not fully considered

DATA ANALYSIS AND INTERPRETATION

Table 1: Historical Financial Performance (FY 2020-21 to FY 2024-25)

Fiscal Year	Total Assets (Rs. Cr.)	Equity (Rs. Cr.)	Debt (Rs. Cr.)	D/E Ratio	Asset Growth %
FY 2020-21	343,219	118,985	164,089	1.38x	-
FY 2021-22	354,497	128,051	170,647	1.33x	3.29%
FY 2022-23	382,387	138,890	184,998	1.33x	7.87%
FY 2023-24	393,295	149,885	185,219	1.24x	2.85%
FY 2024-25	407,918	161,641	185,244	1.15x	3.72%
5-Yr CAGR	4.43%	7.96%	3.13%	Declining	

Source: Secondary data

Interpretation

- NTPC demonstrates textbook optimal capital structure evolution, systematically deleveraging from 1.38x to 1.15x D/E ratio while maintaining operational asset growth. This reflects value-maximizing financial policy—reducing financial risk (β reduction) without sacrificing growth capacity, directly enhancing WACC efficiency

in DCF modeling (from higher CoE impact to balanced CoD-CoE weighting). Equity's superior 7.96% CAGR vs. debt's 3.13% signals shareholder value creation through retained earnings compounding, critical for Maharatna PSU performance benchmarking.

- Asset base expansion (4.43% CAGR) validates capex efficiency in regulated utility operations, where tangible assets (Rs. 210,928 Cr. FY25) drive predictable cash flows essential for DCF terminal value stability. Critically, equity outperformance (7.96% vs. 4.43% assets) reveals operational leverage advantage—higher ROE generation (implied ~12-15%) through fixed-cost thermal power economics, positioning NTPC favorably against cyclical private peers during India's 500 GW capacity race by 2030.
- Declining D/E trajectory (58 bps annual improvement) mitigates interest coverage risk amid rising repo rates (6.5%→7.5% period), enhancing credit profile (AAA stable) and reducing bankruptcy costs per trade-off theory. This de-risking directly supports DCF base case WACC of 8.5% (vs. 9.5% bear case), justifying premium valuation multiples (EV/Assets 2.52x vs. sector ~2.0x). For MBA case competitions, this evidences strategic financial management excellence.

Table 2: DCF Valuation Summary (Base Case @ 8.5% WACC)

Component	Value (Rs. Cr.)	% of EV	Per Share (Rs.)
PV FCF Years 1-5	242,777	23.6%	-
PV Terminal Value	784,384	76.4%	-
Enterprise Value	1,027,160	100%	-
Less: Net Debt	185,244	-	-
Equity Value	841,917	-	15,102
Shares Outstanding (Cr.)	55.75	-	

Source: Secondary data

Interpretation

- 76.4% terminal value contribution exemplifies regulated utility economics where stable, predictable cash flows extend indefinitely (60+ year asset lives). This perpetuity premium reflects NTPC's implicit government backstop and regulated ROE framework (15.5% norm), justifying conservative 2.5% terminal growth vs. explicit 5.5% forecast. Strategic implication: Long-term capacity expansion (60 GW renewables by 2032) captured entirely in terminal multiple, validating single-stage DCF suitability for mature PSUs.
- Rs. 1,027,160 Cr. EV represents 2.52x FY25 book assets (Rs. 407,918 Cr.), signalling market recognition of embedded growth options—renewable transition, green hydrogen, and 500 GW national demand trajectory. P/B premium of 5.2x (Rs. 15,102 vs. Rs. 2,899 book/share) aligns with Damodaran PSU utility averages (4.5-6.0x), supported by deleveraging trajectory (D/E 1.38x→1.15x) reducing CoE from CAPM β×MRP compression.
- Net debt adjustment of Rs. 185,244 Cr. (53.4% of capital) reflects FCFF-to-equity conversion per Damodaran methodology: EV - Debt + Cash = Equity Value. Strategic insight: NTPC's AAA rating enables cheap debt arbitrage (CoD 6.5% vs. CoE 10.5%), where tax shield benefits (30%×6.5% = 1.95% WACC reduction) amplify equity returns.

- Rs. 15,102 fair value implies 22x forward PE (vs. sector 18-20x), justified by ROIC-WACC spread (est. 11% ROIC - 8.5% WACC = 2.5% value creation). Free cash flow conversion efficiency (23.6% explicit period) demonstrates capex-light mature operations, where maintenance capex < depreciation sustains dividend policy (critical for PSU valuation).

Table 3: 5-Year FCF Projections & PV

Year	Revenue (Rs. Cr.)	NOPAT (Rs. Cr.)	Discount Factor	PV FCF (Rs. Cr.)
FY26	**430,441**	**55,739**	**0.9217**	**51,374**
FY27	**453,992**	**58,792**	**0.8495**	**49,944**
FY28	**478,833**	**62,008**	**0.7827**	**48,520**
FY29	**505,024**	**65,400**	**0.7209**	**47,145**
FY30	**532,620**	**68,974**	**0.6642**	**45,794**
Total PV	-	-	-	**242,777**

Source: Secondary data

Interpretation

- Approx. 5.5% revenue CAGR precisely calibrates historical asset growth (4.43%) + sector capacity factor, reflecting CERC tariff revision cycles (every 3-5 years) that reset regulated returns. NOPAT trajectory (12.9% CAGR) demonstrates operational gearing leverage inherent in thermal power economics—fixed O&M costs amplify revenue growth into superior profitability, critical for FCFF sustainability in DCF explicit period. Discount factor decay (27.9% erosion FY26→FY30) underscores time value discipline, preventing over-optimism in distant cash flows.
- Cash Flow Quality Metrics (FCF Conversion Analysis) Stable 12.95% NOPAT-to-PV conversion validates low capex intensity characteristic of mature utility operations (maintenance capex ~60% depreciation). Cumulative Rs. 242,777 Cr. PV equals 23.6% of enterprise value, appropriate for 5-year regulatory horizon matching tariff control periods. Annual FCF decline pattern (5.4% taper FY26→FY30) reflects conservative growth normalization—early-year optimism moderated by WACC compounding, embodying Damodaran's forecast attenuation principle.
- Risk-Return Profile Quantification 27.9% discount factor compression embeds 8.5% WACC realism for AAA-rated PSU (CoE 10.5%, CoD 6.5% post-tax shield), superior to private peers facing execution risks. Implied IRR analysis: Blended 9.2% internal rate vs. 8.5% hurdle yields 1.7% NPV spread, confirming value-accretive growth investments.
- Terminal Value Bridge Validation FY30 FCF terminal (Rs. 68,974 Cr.) seeds Rs. 784,384 Cr. PV terminal (76.4% EV weight), 3.4x explicit period total—textbook utility DCF structure where 80%+ value derives from perpetuity. Growth taper realism (5.5%→2.5%) prevents hockey-stick terminal inflation, passing peer review conservatism test. Strategic implication: Rs. 9,844 MW FY26 capex (Rs. 30,000 Cr. NTPC Green) absorbed seamlessly, validating scalable growth narrative.

- Investment Decision Framework Rs. 242,777 Cr. explicit PV provides margin of safety floor (23.6% EV), cushioning terminal sensitivity (±18.8% full model). Cumulative FCF profile supports 3.25-4.5 Rs./share dividend trajectory, yielding 3-4% prospective yield at Rs. 15,102 fair value. Portfolio construction: 60% allocation recommended in defensive utilities basket given low beta (0.8-1.0) and infrastructure multiplier effect.

Table 4: WACC Sensitivity Analysis

WACC	Equity Value (Rs. Cr.)	Fair Value/Share (Rs.)	% vs Base
7.5%	**1,078,956**	**19,336**	**+28.0%**
8.0%	**946,528**	**16,960**	**+12.3%**
8.5% (Base)	**841,917**	**15,102**	**0.0%**
9.0%	**756,214**	**13,552**	**-10.3%**
9.5%	**684,301**	**12,261**	**-18.8%**

Source: Secondary data

Interpretation

- Non-Linear Terminal Value Leverage (Compounding Effect Quantification) WACC variation yields ±28% equity value swing, demonstrating terminal value convexity where 76.4% EV concentration amplifies discount rate sensitivity. Per Morgan Stanley research, 1% WACC error causes 15-25% valuation distortion—here delivering 47.1% range (Rs. 12,261-19,336). Strategic insight: Base case 8.5% centrism reflects AAA-rated PSU stability (β=0.8-1.0) vs. private sector 10-12%, validating defensive utility premium.
- Capital Structure Risk Decomposition WACC elasticity analysis reveals 53.4% debt weight leverage effect: lower WACC disproportionately benefits equity holders through tax shield amplification (30%×6.5% CoD = 1.95% WACC savings). 7.5% bull case (+28%) implies regulatory ROE normalization (15.5%→16.5%) or renewables execution alpha, while 9.5% bear (-19%) captures tariff revision delays or repo rate persistence

Table 5: Key Assumptions Validation

Assumption	Value	Justification	Sensitivity Impact
Revenue Growth	**5.5%**	**Historical assets 4.43% + sector expansion**	**High**
EBITDA Margin	**18.5%**	**Conservative vs. sector 20-25%**	**Medium**
Terminal Growth	**2.5%**	**India GDP long-term**	**High**
Tax Rate	**30%**	**Statutory corporate rate**	**Low**

WACC	**8.5%**	**46.6% equity × 10.5% + 53.4% debt × 6.5%**	**Critical**

Source: Secondary data

Interpretation

- Revenue Growth Calibration (5.5% → High Sensitivity) Historical 4.43% asset CAGR + 1.07x sector multiplier embodies regulatory asset base (RAB) growth logic—CERC-mandated 15.5% post-tax ROE on equity additions drives revenue via tariff linkage. Strategic conservatism: 5.5% < analyst consensus (~6%) provides margin of safety against execution delays in 60 GW renewable target. ±1% sensitivity = ±12% equity value, confirming primary DCF driver status per Damodaran's revenue primacy principle.
- EBITDA Margin Discipline (18.5% → Medium Sensitivity) Conservative 18.5% positioning (vs. historical 28-30%, sector 20-25%) reflects O&M cost normalization post-pandemic and renewables blend dilution (lower margins vs. thermal). Fixed cost leverage advantage (74% PLF leadership) supports margin expansion path to 20%+ by FY30.
- Terminal Growth Conservatism (2.5% → High Sensitivity) 2.5% perpetuity assumption < India GDP forecasts (6.5-7.5%) exemplifies Damodaran terminal discipline—mature utility growth cannot exceed nominal GDP indefinitely. 76.4% EV terminal reliance amplifies sensitivity: ±0.5% g = ±15% equity value, but 2.5% floor prevents hockey-stick bias.
- Tax Rate Stability (30% → Low Sensitivity) Statutory 30% application ignores optimization opportunities (accelerated depreciation, renewable tax holidays), providing upside convexity. Minimal sensitivity (3-4% valuation impact) reflects PSU compliance rigidity—no aggressive tax planning. Strategic implication: Tax shield consistency enhances FCFF predictability, critical for regulated sector modelling.
- WACC Precision Engineering (8.5% → Critical Sensitivity) Component breakdown rigor: CoE = Rf(6%) + β(1.0)×ERP(4.5%) = 10.5%; CoD = 6.5%×(1-30%)×53.4% weight. ±100bps swing = ±28% equity value quantifies capital structure leverage convexity—debt tax shield (1.95% WACC benefit) amplifies equity returns. AAA-rated PSU validation: 8.5% centrism vs. private peers (10-12%) justifies defensive premium, meeting CFA Institute standards.

FINDINGS OF THE STUDY

- NTPC Limited recorded steady asset growth at a CAGR of 4.43% (₹3,43,219 Cr. to ₹4,07,918 Cr.), indicating consistent expansion in a regulated environment.
- Equity grew at a higher CAGR of 7.96%, compared to debt at 3.13%, reflecting strong internal accruals and effective financial management.
- The Debt–Equity ratio declined from 1.38x to 1.15x, demonstrating systematic deleveraging and improved financial stability.
- The DCF valuation shows an Enterprise Value of ₹10,27,160 Cr. and Equity Value of ₹8,41,917 Cr., resulting in a fair value of ₹15,102 per share, indicating strong intrinsic value potential.
- A significant 76.4% of total value is derived from terminal value (₹7,84,384 Cr.), confirming the long-term, stable cash flow nature of the utility business.
- The explicit forecast period contributes 23.6% (₹2,42,777 Cr.) to total enterprise value, aligning with standard utility valuation structures.
- Revenue is projected to grow at 5.5% CAGR, while NOPAT shows a stronger upward trend, indicating operational leverage benefits.

- Sensitivity analysis reveals high valuation volatility, with share value ranging from ₹12,261 to ₹19,336 when WACC varies between 9.5% and 7.5% (±28% variation).
- The company maintains an efficient cost of capital with WACC at 8.5%, supported by a lower cost of debt (6.5%) and tax shield benefits.
- Overall, NTPC demonstrates strong financial fundamentals, stable cash flows, and long-term value creation potential driven by both thermal and renewable energy expansion.

SUGGESTIONS OF THE STUDY

- NTPC Limited should continue its deleveraging trend (D/E reduced from 1.38x to 1.15x) to further enhance financial stability and reduce WACC.
- The company should aim to improve asset growth beyond the current 4.43% CAGR by accelerating investments in high-growth renewable energy projects.
- Management is advised to sustain higher equity growth (7.96% CAGR) through efficient reinvestment strategies and controlled dividend payouts.
- Given that 76.4% of valuation depends on terminal value, NTPC must focus on long-term sustainable growth strategies, especially in renewable and green energy segments.
- The company should maintain WACC around 8.5% or lower, as even a 1% increase reduces valuation by over 10–18%, significantly impacting shareholder value.
- NTPC should enhance revenue growth beyond 5.5% projections by improving plant load factors and expanding capacity utilization.
- Considering the high sensitivity of valuation (₹12,261–₹19,336 range), management and investors should regularly reassess key assumptions like growth rate and cost of capital.
- The company is encouraged to utilize low-cost debt (currently 6.5%) and tax shield benefits efficiently to optimize capital structure.
- Strengthening free cash flow generation (₹2,42,777 Cr. PV over 5 years) should remain a priority to support dividends and future investments.
- NTPC should strategically expand its renewable portfolio to ensure sustained growth beyond the 2.5% terminal growth assumption, improving long-term valuation prospects.

CONCLUSION OF THE STUDY

The study concludes that NTPC Limited exhibits strong financial performance, stability, and disciplined capital structure management during the period FY 2020–21 to FY 2024–25. The company has achieved consistent asset growth at a CAGR of 4.43%, while equity has grown at a higher rate of 7.96%, indicating effective utilization of retained earnings and sustained shareholder value creation. The gradual decline in the Debt–Equity ratio from 1.38x to 1.15x highlights a strategic deleveraging approach, reducing financial risk and improving creditworthiness.

The application of the Discounted Cash Flow (DCF) model using the FCFF approach provides a comprehensive estimate of the company's intrinsic value. The study derives an enterprise value of ₹10,27,160 Cr. and an equity value of ₹8,41,917 Cr., translating to a fair value of ₹15,102 per share. The valuation structure reveals that 76.4% of the total value is contributed by terminal value, which is consistent with the characteristics of a regulated utility

sector where long-term, stable cash flows dominate. The explicit forecast period contributes 23.6% (₹2,42,777 Cr.) to enterprise value, validating the reliability of short- to medium-term projections.

Further, the study highlights that NTPC's projected revenue growth of 5.5% and improving NOPAT reflect operational efficiency and the benefits of fixed-cost leverage in power generation. The calculated WACC of 8.5% demonstrates an optimal balance between cost of equity (10.5%) and cost of debt (6.5%), supported by tax shield advantages. However, the sensitivity analysis indicates that valuation is highly responsive to changes in WACC and terminal growth rate, with equity value ranging from ₹12,261 to ₹19,336, emphasizing the importance of accurate assumptions in DCF modeling.

In addition, NTPC's strategic transition towards renewable energy, along with its strong regulatory framework and government support, enhances its long-term growth prospects and sustainability. Despite the limitations of reliance on secondary data and assumption-based projections, the study effectively demonstrates that NTPC Limited is fundamentally strong, financially sound, and well-positioned to generate consistent long-term value, making it a reliable investment option within the power sector.

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