



# “TECHNICAL ANALYSIS ON SELECTED STOCKS OF POWER SECTOR”.

**Aniket Rupnar,**

PIET, Parul University, Vadodara, Gujarat, India.

**Yudhveer Sahu,**

PIET, Parul University, Vadodara, Gujarat, India.

**Prof. Satyajitsinh Gohil,**

Faculty of Management Studies, Parul University, Waghodia, Vadodara, Gujarat, India.

## **Abstract**

Technical Analysis is a study of the stock market relating to factors affecting the supply and demand of stocks and also helps in understanding the intrinsic value of shares and to know whether the shares are undervalued or overvalued. The stock market indicators would help the investor to identify major market turning points. This is a significant technical analysis of selected companies which helps to understand the price behaviour of the shares, the signals given by them and the major turning points of the market price. Any investor or trader must certainly consider technical analysis as a tool whether to buy the stock at a particular point of time though it is fundamentally strong. The objective of the present project is to make a study on the technical analysis on selected stocks of energy sector and interpret on whether to buy or sell them by using techniques. This in turn will help investors identify current trends and risks related to security on a par with the market. Research is based solely on secondary sources, including historical data available on the website. For analytical purposes, methods such as Exponential Moving Average, Relative Strength Index and Moving Average, Convergence and Divergence are used to determine whether a stock is technically strong.

**Keywords:** Technical Analysis, Power sector, Risk, Stock, Price.

## I.Introduction

Technical analysis is the study of the stock market considering factors related to the supply and demand of stocks. Technical analysis is a method of valuing securities by analysing statistics generated by market activity such as Historical price and volume. Rather than trying to measure the intrinsic value of a security, technical analysts use charts and other tools to identify patterns that may indicate future activity. In fact, decisions made based on technical analysis are only made after concluding a trend and assessing the future movement of the stock based on the trend. Technical analysis assumes that the market is efficient and that prices have already taken into account other factors related to the company and industry.

## II.Objectives of the Study

- To make a study on Technical Analysis on selected stocks and interpret on whether to buy or sell them.
- To find out the risk involved with the scrip on par with market using MACD.
- To analyse price movements using Relative Strength Index.
- To understand trends and patterns in share price movements using Simple Moving Average.

## III.Literature review

R. Chitra (2011) Found **Technical analysis is the study of the stock market related to the factors that affect the supply and demand of stocks**, and is also useful in understanding the intrinsic value of stocks and whether they are undervalued or overvalued. Helpful. Stock market indicators help investors identify important market turning points. It is a powerful technical analysis of selected companies that helps you understand price movements, the signals they give, and major market price turning points.

S Mishra (2013) **The energy sector is one of the most important growth drivers for any country**. India's energy sector is heavily regulated by the government, which also sets guidelines for tendering energy projects, regulations for interstate transmission, and pricing of electricity to consumers. In India, the passing of the Electricity Act in 2003 gave momentum to the sector and paved the way for new reforms. India will undoubtedly need a major leap in power supply to sustain its rapid economic growth and meet its growing demand. Every effort must be made to efficiently manage all components of the value chain. To adequately support the country's growth aspirations, it is imperative that the sector builds its capacity across the value chain and pursues reforms where necessary.

Geoffrey G. Parker (2014) Figured that **the power industry is undergoing dramatic change due to rapid technological change, climate change concerns, and evolving market structures**. We need new models to help industry better utilize resources and help policy makers better understand the impact of regulatory decisions. Operational research and management science to explain the current operational and policy challenges of the electricity industry, with a particular focus on issues related to electricity market design, renewable energy integration, and the impact of climate policies on electricity infrastructure. Includes a structural review of the

literature. Growth of electric vehicles, energy storage, and increasing interdependence between natural gas and electricity.

A. Razmjoo (2021) introduces **the global approach towards the development of renewable energy technologies and reviews similar case studies related to sustainable development**. Reducing carbon dioxide (CO<sub>2</sub>) emissions has a positive impact on the environment by preventing the negative effects of global warming. In order to achieve an ecological environment, it is necessary to switch the primary energy source from fossil fuels to clean renewable energy. Increasing the use of renewable energy therefore reduces air pollution and helps ensure a sustainable energy supply to meet future energy demands.

C. Boobalan (2014) **Technical analysts believe that the past performance of stocks and markets is indicative of future performance**. Technical analysis is the prediction of future financial price movements based on a study of past price movements. Technical analysis does not lead to absolute predictions about the future when it comes to forecasts. Instead, technical analysis helps investors predict what "probably" will happen to the price.

Khyati A. Vyas (2013) Examines **The benefits of using fundamental and technical research are different**, and these two different styles of investing in the stock market have their own distinct advocates. Stock selection for investment portfolios that rely on fundamental analysis is generally believed to be more successful than models that rely on technical analysis. Fundamental research focuses on identifying and analyzing factors that influence security prices, while technical analysis deals with analyzing market behaviour. Because of their distinct differences, they are often seen independently, and practitioners tend to prefer one over the other, although a small group applies to both.

Benjamin Asubam Weyori (2020) examines **that the stock market is a major linchpin of a growing and thriving economy**, and all investments in the market are aimed at maximizing returns while minimizing the associated risks. Numerous stock market forecasting studies have been conducted using technical or fundamental analysis with various soft computing techniques and algorithms. His study was a systematic and critical review of approximately 122 relevant research papers published in academic journals over 11 years (2007-2018) in the field of stock market forecasting using machine learning.

#### IV. Hypothesis

- The Technical Analysis's hypothesis is that to make understand peoples that the power of technical analysis which shows growth of the power sector in future.

#### V. Research Design

- The subsequent research design is descriptive and analytical in nature.

#### VI. Sources of Data Collection

- The data is collected from stock market NSE, various books, and websites, magazines.

## VII. Research Methodology

This study aims to analyze the Price dynamics of securities of selected companies. The applied research design is descriptive and analytical as this study describes not only the existing facts and figures presented in the financial statement, but also the price movements of the selected companies. For technical analysis, we considered the weekly stock price movements of selected companies from the secondary data, NSE, for 5 years, from April 2017 to October 3, 2022.

We took the stock's closing price and used a variety of tools to analyze future price movements. Data was collected from NSE's stock market trades, various books, magazines, magazines and websites. All companies listed on national stock exchanges, five actively traded on the NSE, were used in the study based on a stratified sample.

The selected companies are :

1. Power Grid Corporation of India Limited (POWERGRID)
2. National Thermal Power Corporation (NTPC)
3. National Hydroelectric Power Corporation (NHPC)
4. Tata Power Company Ltd
5. Adani Power limited

Tools and Techniques used in this study are:

Stock (Candlestick) chart

### A) Moving Averages

Most chart patterns show a range of price movements. This can make it difficult for traders to understand overall trends in security. One simple method traders use to avoid this is to use moving averages. A moving average is the average price of a security over a specific period of time. It is especially useful in volatile markets as it smooths data series and makes it easy to identify trends.

The two most popular types of moving averages are:

1. Simple Moving Average (SMA)
2. Exponential Moving Average (EMA)

#### 1. Simple Moving Average (SMA)

A simple moving average is formed by calculating the average (average) price of a security over a specified period of time. Example: A 5-day moving average is calculated by adding the closing prices for the last 5 days and dividing the sum by 5.

## 2. Exponential Moving Average (EMA)

An exponential moving average is a moving average formed by weighting recent price movement.

EMA (current) = ((Price(current) – EMA (previous) \* Multiplier) + EMA (previous) smoothing constant formula:

$$K = 2/(1+N)$$

where

N = number of EMA periods

### B) MACD (Convergence and Divergence)

Developed by Gerald Appel in the late 70's, MACD (Convergence and Divergence) is one of the simplest and most effective momentum indicators available. The MACD indicator is one of the most widely used technical analysis tools. The MACD fluctuates above and below the zero line (centre line) as the moving averages converge, cross, and diverge. The standard MACD is the 12-day Exponential Moving Average (EMA) minus the 26-day EMA. Nearby is the 9-day MACD EMA, which acts as a signal line to determine indicator reversals. The MACD histogram is the difference between the MACD and the signal line, the 9-day EMA.

### C) Relative Strength Index (RSI)

The Relative Strength Index (RSI) is a very useful volatile momentum indicator developed by J. Wells Wilder and is one of the most widely used indicators in technical analysis. RSI fluctuates between 0 and 100. The most popular is the 14-day RSI, which is calculated based on 14-day readings. Traditionally, a stock is considered overbought when the RSI is above 70 and oversold when the RSI is below 30. You can also generate signals by finding branch and centre line intersections.

Basic formula:

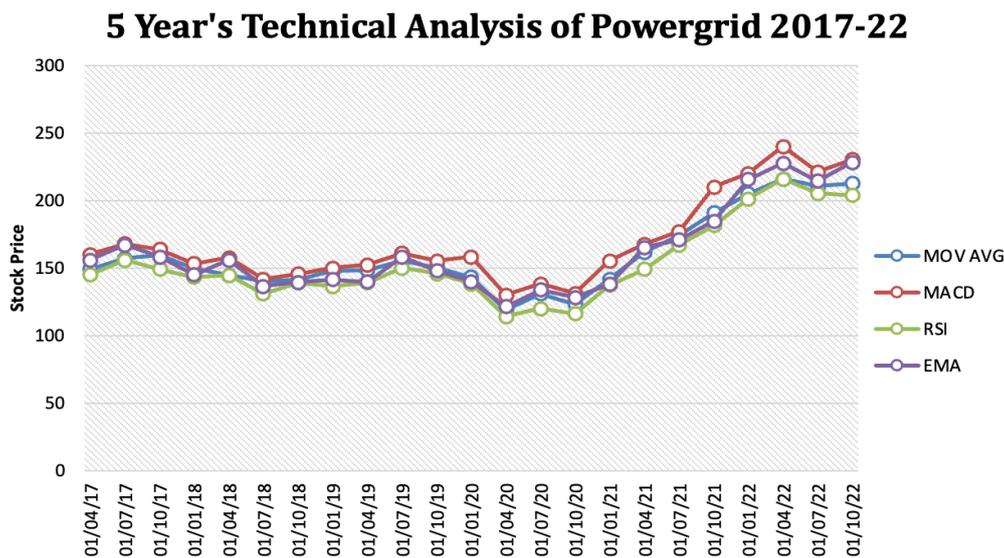
$$RSI = 100 - [100/(1+RS)]$$

where

RS = average price increase over the selected time period/average price decrease over the same period.

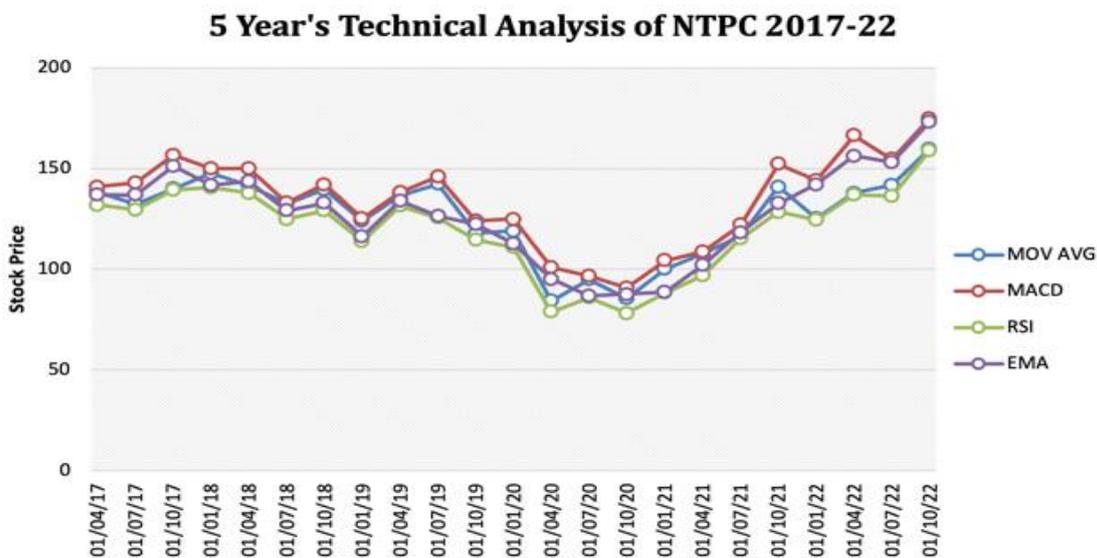
## VIII. Analysis & Interpretation

### A. POWERGRID



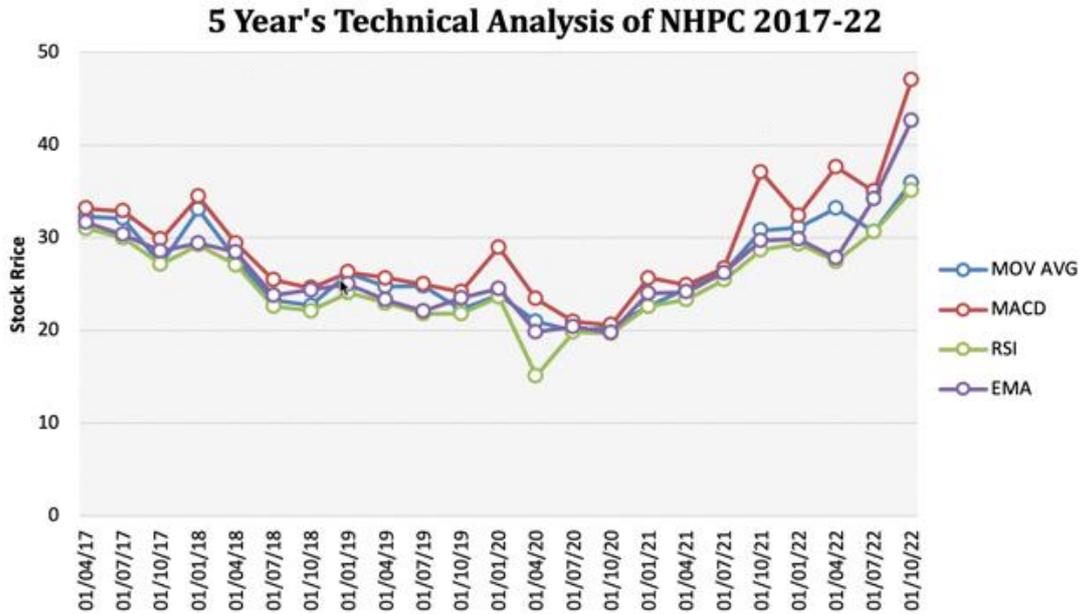
On this chart, the price is above the EMA. The POWERGRIND chart shows the change in various prices such as open, high, low and close according to different weeks considered from 01/03/2017 to 01/10/2022. PowerGrid candlestick chart PowerGrid stock price can be bullish in the short and medium term. Already breaking the triple top at 152, next replacement targets are 180, 220, 235 with a stop loss expected at 170. The MACD and RSI also show a steady buying trend. Depending on the trend, investors make buying or selling decisions.

### B. NTPC



The price is higher than the EMA. The NTPC chart shows the change in various prices such as open, high, low and close depending on the week considered from 01/03/2017 to 01/10/2022. On the NTPC candlestick chart, NTPC stock could be bullish in the short to medium term. The triple top has already been broken at 145, the next

replacement target is 121, 153 and 160 with an expected stoploss of 145. The MACD and RSI are also showing a solid buying trend. Depending on the trend, investors make buying or selling decisions.

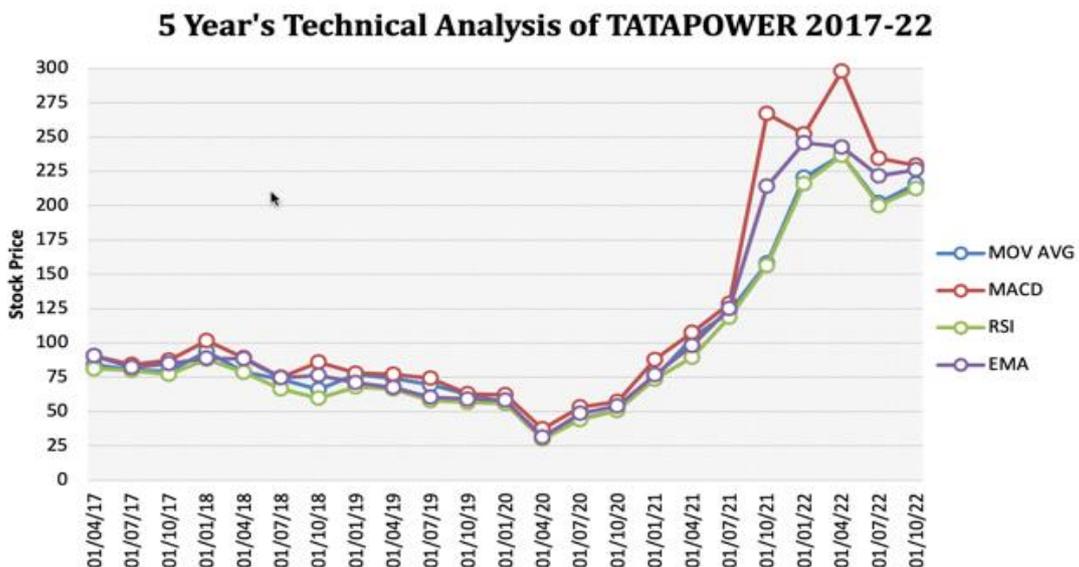


### C. NHPC

The price is higher than the EMA. The NHPC chart shows the change in various prices such as open, high, low and close according to the week considered from March 1, 2017 to October 1, 2022. On the NHPC candlestick chart, the price of NHPC stock may be bullish in the short to medium term. The triple top is already broken at 32, the next replacement target is 38, 40, 45 with a stop loss of 42. The MACD and RSI are also showing a strong buying trend.

Depending on the trend, investors make buying or selling decisions.

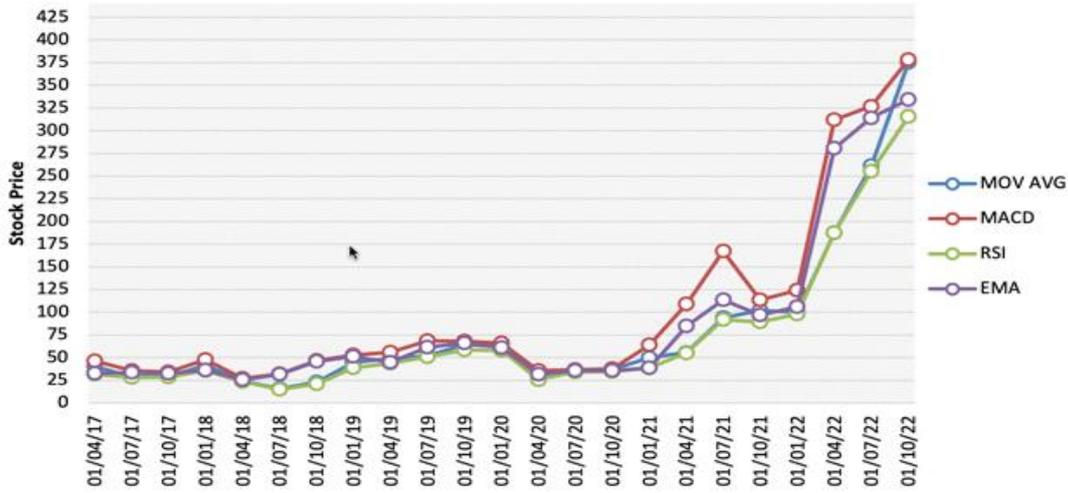
### D. TATAPOWER



In this chart technical analysis of TATAPOWER from 2017 to 2022 using Moving average, Relative strength index and moving average convergence divergence shows that the sudden spike in the chart because of the EV Trend in market and TATAPOWER announced to help the TATAMOTOR to produce EV in India.

### E. ADANIPOWER

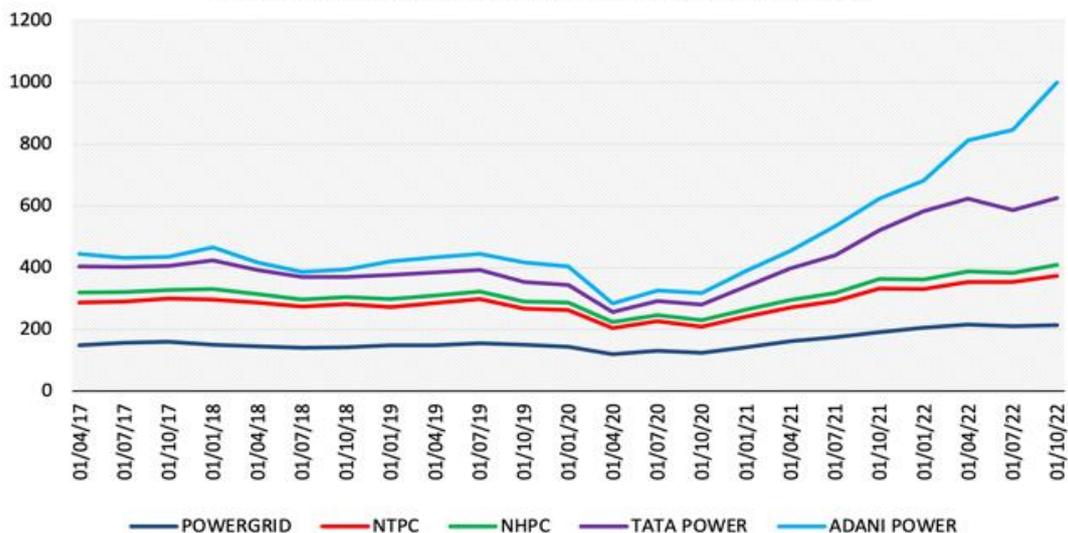
5 Year's Technical Analysis of ADANIPOWER 2017-22



In this chart technical analysis of ADANIPOWER from 2017 to 2022 using Moving average, Relative strength index and moving average convergence divergence shows strong bullish trend from 2021 the company growing from past years breakout in trend at 95 and goes up to 280 and this goes up to 420. The MACD and RSI are also showing a strong buying trend. Depending on the trend, investors make buying or selling decisions.

### IX. Findings & Suggestions

POWER SECTOR'S GROWTH OVER 5 YEAR'S



In this chart of power sector's growth of past 5 years as we can see there are 5 companies which are power grid, NTPC, NHPC, Tata Power, Adani Power mentioned.

As we can see power sector is constant from 2017 to 2019 and in 2020 sudden drop in market is because of Covid19 but after the Dec 2020 this sector growing and is shows upward trend of this sector from last two years from this technical analysis, We find out that power sector is growing day by day because the trending EV demand is increasing in the market and thus this companies have a huge opportunity to grow and the chart shows higher growth in the market. As technical analysis shows that market has potential and growth so we suggest invest in the few companies like which are Adani Power, Tata Power & NHPC which give you good return in future. The future of Indian energy stocks looks clear. A look at the stock prices of companies in the energy sector shows that domestic and foreign institutional investors are gradually expanding their presence in the sector. India's economy is growing at a breakneck pace, which inevitably increases the demand for electricity and power. By 2022, Solar's share is estimated to be around 114 GW, followed by wind with 67 GW, followed by biomass and hydropower (15 GW). India has also increased its renewable energy target to 227 GW. This decision should benefit renewable energy stocks such as Tata Power, Adani Power and others.

## Conclusion

The health of the stock market today is entirely dependent on the investor's investment patterns. Financial markets are undergoing rapid change, so investors must look for appropriate opportunities while observing the dynamics of the market environment. The financial market reflects the country's economic growth because it provides the financial resources necessary for national development. Technical analysis gives investors a better understanding of stocks and points them in the right direction to buy or sell stocks. Therefore, small investors and traders should not blindly invest and analyse using various verification tools. If your script is technically strong.

## References

<https://prsindia.org/policy/analytical-reports/overview-power-sector>

<https://tradebrains.in/indian-electricity-power-sector-key-companies/>

[https://en.wikipedia.org/wiki/Electricity\\_sector\\_in\\_India](https://en.wikipedia.org/wiki/Electricity_sector_in_India)

<https://www.powergrid.in/about-us>

[https://en.wikipedia.org/wiki/Power\\_Grid\\_Corporation\\_of\\_India](https://en.wikipedia.org/wiki/Power_Grid_Corporation_of_India)

<https://www.ntpc.co.in/en/about-us/vision-and-mission>

<http://www.nhpcindia.com/Default.aspx?id=33&lg=eng&>

<https://www.tatapower.com/careers/life-tata-power.aspx>

[https://en.wikipedia.org/wiki/Tata\\_Power](https://en.wikipedia.org/wiki/Tata_Power)

[https://en.wikipedia.org/wiki/Adani\\_Power](https://en.wikipedia.org/wiki/Adani_Power)

<https://www.adanipower.com>

<https://www.tradingview.com/chart/4Si1Z1xg/>

<https://www.equitymaster.com/share-price/NTPC/NTPC-532555/NTPC-Share->

[Price?period=8&chkComp=on&txtGrSymb=PGRID&utm\\_source=compare-company-page&utm\\_medium=Website&utm\\_campaign=usage&utm\\_content=Stock-Price-Chart-5Y#divChart](Price?period=8&chkComp=on&txtGrSymb=PGRID&utm_source=compare-company-page&utm_medium=Website&utm_campaign=usage&utm_content=Stock-Price-Chart-5Y#divChart)

<https://www.equitymaster.com/share-price/NTPC/NTPC-532555/NTPC-Share->

[Price?period=8&chkComp=on&txtGrSymb=NHPC&utm\\_source=compare-company-](Price?period=8&chkComp=on&txtGrSymb=NHPC&utm_source=compare-company-)

[page&utm\\_medium=Website&utm\\_campaign=usage&utm\\_content=Stock-Price-Chart-5Y#divChart](page&utm_medium=Website&utm_campaign=usage&utm_content=Stock-Price-Chart-5Y#divChart)