



## Renewable Energy Sector: NHPC's Journey

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### Introduction

NHPC's journey in the renewable energy sector and explore its major projects, challenges faced, and the strategies implemented for sustainable growth. NHPC Limited (formerly known as National Hydroelectric Power Corporation) is an Indian government-owned company that is engaged in the development, construction, and operation of hydroelectric power plants. Established in 1975, NHPC has played a significant role in the growth of the hydroelectric power sector in India. In this case study, we will analyze NHPC's journey in the renewable energy sector and explore its major projects, challenges faced, and the strategies implemented for sustainable growth.

### Background & Overview

NHPC operates as a mini-ratna category-I public sector undertaking (PSU) under the Ministry of Power, Government of India. The company's primary objective is to develop and promote hydroelectric power as a sustainable and eco-friendly source of energy. NHPC has a diverse portfolio of projects, including run-of-the-river, storage, and pumped storage hydropower plants.

### Major Projects and Achievements

NHPC has undertaken several significant projects across India. One notable project is the Subansiri Lower Hydroelectric Project, located in Arunachal Pradesh. It is a 2,000 MW project that aims to harness the hydroelectric potential of the Subansiri River. The project is expected to generate substantial renewable energy and contribute to the region's economic development. Another noteworthy project is the Teesta Low Dam Project, situated in West Bengal and Sikkim. With an installed capacity of 1,200 MW,

this run-of-the-river project has been successful in harnessing the hydroelectric potential of the Teesta River and providing clean energy to the region.

### **Challenges Faced**

NHPC has encountered several challenges throughout its journey. One of the significant challenges is the environmental and social impact of large-scale hydroelectric projects. These projects often involve the displacement of local communities and can have adverse effects on ecosystems and biodiversity. NHPC has taken steps to address these concerns through comprehensive environmental impact assessments and the implementation of mitigation measures. Another challenge faced by NHPC is the geological complexity of project sites. Hydroelectric projects require a thorough understanding of geological conditions to ensure the safety and longevity of the infrastructure. NHPC has employed advanced geological exploration techniques and engaged with experts to overcome these challenges.

### **Strategies for Sustainable Growth:**

NHPC has adopted various strategies to ensure sustainable growth and overcome the challenges faced. Some key strategies include:

a) **Stakeholder Engagement:**

NHPC recognizes the importance of engaging with local communities, government bodies, and other stakeholders. The company promotes dialogue, consultations, and participatory approaches to address concerns, enhance transparency, and build trust.

b) **Environmental Sustainability:**

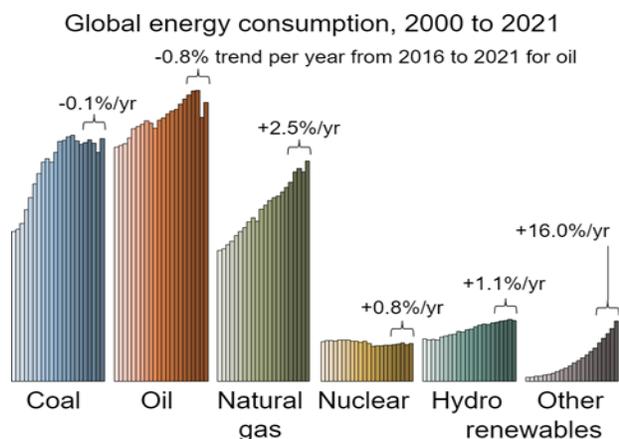
NHPC focuses on incorporating environmental sustainability into its project planning and operations. It follows international best practices, conducts environmental impact assessments, and implements measures to minimize ecological disruption and promote biodiversity conservation.

c) **Technological Advancements:**

NHPC embraces technological advancements to improve project efficiency, safety, and reliability. It invests in modern equipment, adopts advanced construction techniques, and explores innovative solutions for efficient power generation and transmission.

d) **Diversification:**

NHPC has been actively diversifying its portfolio beyond hydroelectric power. The company has entered into solar power projects and is exploring other renewable energy sources to adapt to evolving market dynamics and contribute to India's renewable energy goals.



## Conclusion

NHPC Limited has emerged as a key player in India's hydroelectric power sector. Through its major projects, sustainable practices, and stakeholder engagement initiatives, NHPC has demonstrated its commitment to clean energy generation while addressing environmental and social challenges. With its focus on technological advancements and diversification into other renewable energy sources, NHPC is well-positioned to contribute significantly to India's energy transition and sustainable development goals.

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