

# **India Small Hydropower Market, By Capacity (Up to 1 MW, 1–10 MW), By Type (Micro Hydropower, Mini Hydropower), By Components (Electromechanical Equipment, Electric infrastructure, Civil Works) By Region, Competition, Forecast & Opportunities, 2021-2031F**

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## **Abstracts**

### **Market Overview**

India's Small Hydropower Market was valued at USD 117 million in 2025 and is projected to reach USD 169 million by 2031, growing at a CAGR of 6.19% during the forecast period. Small hydropower (SHP) systems, typically generating up to 10 MW of electricity, harness the natural flow of water—often through run-of-river setups—without large-scale dams or reservoirs. These installations are known for their low environmental impact, cost-efficiency, and suitability for remote and rural areas. As clean, renewable, and reliable energy sources, SHP projects contribute to reducing dependence on fossil fuels and support India's growing energy needs. Their scalability and minimal land disruption make them vital for localized power supply and sustainable rural development. Increasing energy consumption, expanding electrification, and a push toward green energy solutions have amplified interest in small hydropower, especially amid the global transition toward environmentally conscious infrastructure.

### **Key Market Drivers**

#### **Government Policy Support and Incentives**

Government support remains a critical driver of India's small hydropower market. The

Ministry of New and Renewable Energy (MNRE) actively promotes SHP development through favorable policies, capital subsidies, and streamlined regulations. As part of India's broader renewable energy targets, small hydropower is considered a mature, dependable complement to solar and wind power. Financial assistance—including subsidies of up to 40% for sub-1 MW projects and up to 30% for those between 1 MW and 25 MW—lowers entry barriers for developers. Tax benefits, reduced customs duties, and faster approvals for projects under 25 MW further boost project viability. Preferential tariffs and exemptions from environmental clearance for smaller installations reduce administrative burdens and attract private investment. With India's energy demand projected to double by 2040 and urban population growth exceeding 600 million by 2030, small hydropower is well-positioned to support the country's green energy roadmap and rural electrification goals.

## **Key Market Challenges**

### **Environmental and Social Concerns in Project Implementation**

Despite being less invasive than large hydro projects, small hydropower developments face growing opposition due to ecological and social concerns. Projects built in ecologically sensitive regions—especially Himalayan and forested areas—often trigger resistance from local communities and environmental groups. Diversion of river flow for run-of-river SHP plants can disrupt aquatic life, affect downstream water access, and disturb natural ecosystems. Improper planning or cumulative impacts from multiple SHP projects along the same river basin can result in soil erosion, landslides, and biodiversity loss. Although exempt from formal environmental clearance below 25 MW, these installations can still leave lasting ecological footprints, particularly in fragile landscapes. The lack of comprehensive environmental assessments and community engagement in some regions intensifies scrutiny, potentially leading to delays, public backlash, or policy restrictions.

## **Key Market Trends**

### **Shift Towards Modernization and Upgradation of Existing SHP Projects**

India is increasingly prioritizing the modernization of existing small hydropower assets to enhance efficiency and reliability. Many SHP plants commissioned decades ago operate with outdated turbines, poor automation, and deteriorated infrastructure. Rather than investing solely in new builds, developers are refurbishing old projects by upgrading electromechanical systems, improving water flow management, and

incorporating digital monitoring technologies like SCADA. These enhancements extend plant life, improve capacity utilization, and reduce operating costs. Upgradation also minimizes environmental disruption and regulatory hurdles compared to new construction. This approach aligns with both economic and environmental objectives, offering a cost-effective means to boost renewable energy output while maintaining sustainability standards. Government support for repowering initiatives through financial and technical aid further strengthens this trend, creating opportunities for both public and private stakeholders to optimize existing SHP capacity.

### **Key Market Players**

National Hydroelectric Power Corporation Limited

Satluj Jal Vidyut Nigam Limited

Jaypee Group

SJVN Limited (Satluj Jal Vidyut Nigam)

NHPC Limited (National Hydroelectric Power Corporation)

Himachal Pradesh Power Corporation Limited

Lanco Infratech Limited

Tata Power Company Limited

### **Report Scope:**

In this report, the India Small Hydropower Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

India Small Hydropower Market, By Capacity:

Up to 1 MW

1–10 MW

### India Small Hydropower Market, By Type:

Micro Hydropower

Mini Hydropower

### India Small Hydropower Market, By Components:

Electromechanical Equipment

Electric Infrastructure

Civil Works

### India Small Hydropower Market, By Region:

South India

North India

West India

East India

## Competitive Landscape

**Company Profiles:** Detailed analysis of the major companies present in the India Small Hydropower Market.

### Available Customizations:

India Small Hydropower Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

## Company Information

Detailed analysis and profiling of additional market players (up to five).

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