

**SJVN Limited**, a Navratna CPSE under administrative control of Ministry of Power, Govt. of India, was incorporated on May 24, 1988, as a joint venture of Government of India and Government of Himachal Pradesh. SJVN is a listed Company having shareholders pattern of 55.00% with Govt. of India, 26.85% with Govt. of Himachal Pradesh and rest of 18.15% with Public. The present paid up capital and authorized capital of SJVN is Rs. 3,929.80 Crore and Rs. 7,000 Crore respectively. The Net Worth as on 31.03.2025 is Rs.14282.10 Crore.

Beginning with a single project and single State operation (i.e. India's largest 1500 MW Nathpa Jhakri Hydro Power Station in Himachal Pradesh), Company has commissioned fifteen projects totalling 4196.50 MW of installed capacity and 123 km Transmission Line.

SJVN is presently implementing or operating power projects in Pan India besides neighbouring country of Nepal.

To strengthen its growing clean energy portfolio, SJVN is progressively embedding Artificial Intelligence (AI) into its core operations, safety frameworks, and administrative functions.

SJVN Limited is adopting Artificial Intelligence (AI) and Machine Learning (ML) through SAP Analytics Cloud Management Board in line with Industry 4.0 initiatives to leverage latest technological advancements. An AI-enabled Management Dashboard has been implemented to:

1. Analyse historical generation data to forecast future generation and identify peak generation periods.
2. Predict project delays, cost overruns, and risks for better project planning.
3. Support data-driven manpower planning and HR decisions.

Rampur HPS has prepared a physical model of Power House building for fostering stability studies & health monitoring of AI enable & Digital Twin in association with IIT Mandi. A small scale physical replica of the powerhouse building is being used with accelerometer sensors. The sensors signals are collected through data acquisition units and sent to a computer in real time. On the computer, a digital twin of the same powerhouse building has been created. The digital model responds visually, showing how the building moves and vibrates.

In an actual application, an AI model would be trained, using structural behaviour data, which shall predict responses at locations where no sensors are installed. The digital model can show color contours, motion patterns, or warning indicators that represent the health of the structure facilitating continuous monitoring of the structure including preventive measures and to detect early signs of damage.