

Sluicer

Khimti HPP, Nepal

Challenge

Khimti HPP is a 60 MW run-of-river hydropower plant utilizing an 8 km long headrace tunnel.

Gravel and stones released from the unlined tunnel walls and invert, together with sediments passing the intake desanders, were transported through the tunnel at velocities exceeding 100 m/s. This caused severe turbine abrasion and created the need for an efficient sediment removal solution without interrupting power production.



SediCon Sluicer installed inside the pressurized tunnel



Sediment outlet pipes from the tunnel sand trap

Solution

SediCon designed, supplied and commissioned two SediCon Sluicers for the pressurized tunnel sand trap. The system continuously removes sediments through dedicated outlet pipes to a separate dewatering basin while maintaining uninterrupted power production.

The Sluicers are remotely operated and continuously remove coarse gravel and stones from the pressurized tunnel sand trap, significantly reducing turbine wear.



Project Location

Project facts

Client: Himel Power Ltd.
Project: Khimti HPP
Location: Nepal
Technology: 2 x SediCon Sluicer
Installed capacity: 60 MW
Head: 680 m
Headrace tunnel: 8 km

Results and benefits

- Remote operation
- No production interruptions
- Pressurized tunnel operation
- Reduced turbine wear
- Approximately 200 m³ removed annually
- In operation since 2000

For more than 30 years, SediCon has developed and supplied proprietary sediment handling technologies from Trondheim, Norway. Our solutions for reservoirs, intakes, desanders and tunnels have been successfully implemented in hydropower projects in more than 20 countries across five continents.