



# ENGINEERING EXCELLENCE

Quality Services - Conception to Completion



মালিনা চাহ্ট্রা ৫০১ হল্রিলিয়েহি দ্যা. লি. SANIMA HYDRO AND ENGINEERING PVT. LTD.





## COMPANY PROFILE

Sanima Hydro and Engineering Private Limited (SHEPL) is a distinguished Hydropower consulting firm registered under the Government of Nepal Company Act (2056) and headquartered in Dhumbarahi, Kathmandu. Since its inception in 2005, SHEPL has been dedicated to delivering comprehensive hydropower-related engineering services. These encompass a wide range of activities, including Desk Studies, Site Verification, Due Diligence Studies, Feasibility Studies, Initial Environmental Examinations (IEE), Environmental Impact Assessments (EIA), Detailed Engineering Design, Construction Supervision, Progress Monitoring, Testing, Operation and Maintenance, as well as Rehabilitation works.

Committed to the Excellence, SHEPL prioritizes quality output and timely delivery, ensuring client satisfaction. Recognizing its commitment to quality service provision, SHEPL obtained ISO 9001:2008 certification in 2013, which was subsequently upgraded to ISO 9001:2015 in April 2018. SHEPL's expertise extends beyond national boundaries, catering to both domestic and international clients. With a team of highly skilled professionals, many of whom possess international experience spanning Africa, Asia, and the United Kingdom, SHEPL has successfully executed over 200 hydropower projects. Currently, more than 18 projects are operational, with several others in various stages of construction. Furthermore, SHEPL has a strong track record of providing engineering services internationally, having contributed to projects in Afghanistan, Kenya, Laos, Pakistan, Uganda, and Liberia. Its clientele includes prestigious multilateral agencies such as the Asian Development Bank (ADB), USAID, World Bank, and KfW (Germany).

In collaboration with Hydroplan, a leading hydropower engineering company based in the United Kingdom, SHEPL has strengthened its capabilities. Hydroplan's partnership with SHEPL as a significant shareholder underscores SHEPL's commitment to innovation and growth in the field of hydropower engineering.

Thus, With a diverse portfolio of Hydropower projects spanning across the country, SHEPL has established a national presence as a leading hydropower engineering consultancy of Nepal. From the rugged terrains of the Himalayas to the vast landscapes of Nepal, our expertise transcends geographical boundaries, enabling us to deliver transformative solutions wherever our clients need us. High Quality Services Effectively and Efficiently



Mr. Tuk Prasad Paudel

"Sanima Hydro and Engineering Pvt. Ltd. (SHEPL) is a highly esteemed consulting company specializing in a wide range of services for Hydropower Projects. To date, SHEPL has offered consulting expertise to over 200 Hydropower Projects, both nationally and internationally, totaling a combined capacity of more than 3000 MW."

# Message from the EXECUTIVE CHAIRMAN

The hydropower sector in Nepal holds immense potential, driven by the country's abundant water resources and favorable topographical features. The estimated hydropower potential of Nepal is substantial, with experts suggesting it to be around 83,000 megawatts (MW). However, currently, only a fraction of this potential has been tapped, with installed capacity standing at approximately 3000 MW. This indicates a significant opportunity for further development and expansion within the sector. Thus to cater this market, Sanima Hydro and Engineering Pvt. Ltd. (SHEPL) was established on 2005, thus providing the good quality consultancy services in the hydropower sector, both at national as well as international level.

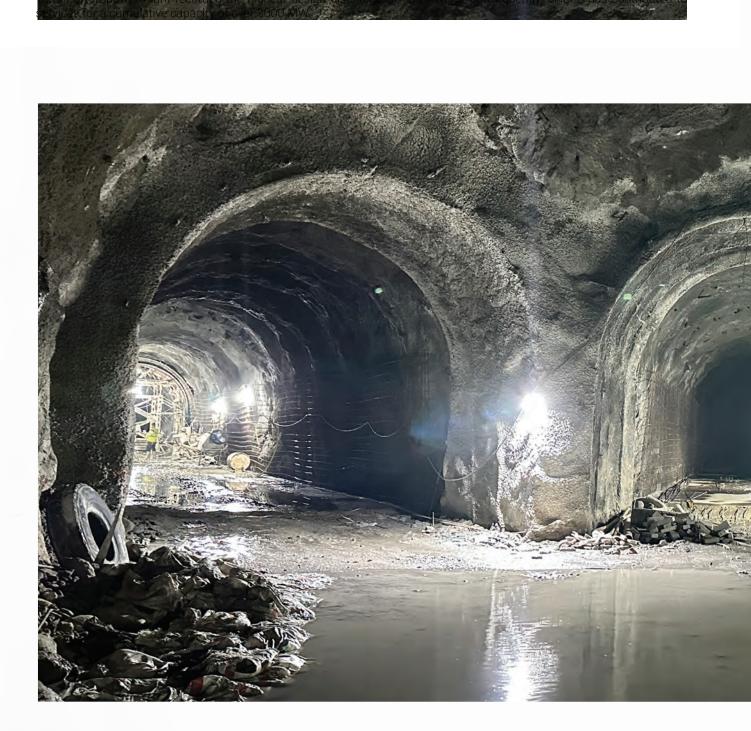
As a Chairman of SHEPL, I am really honored to lead our team in our mission to advance sustainable development and prosperity in Nepal through the utilization of hydropower. Over the past 19 years, SHEPL has led project identification, pre-feasibility, feasibility and environmental impact studies of hydropower projects ranging from the large 1,110 MW "Sunkoshi II High Dam Project (Desk Study) for Asian Development Bank to the small 12 kW Odary Micro Hydropower Project for a local community. The company has outlined plans to undertake multiple projects in the future, aiming to maximize investor profitability and utilize resources to meet the nation's demands.

I am confident that Nepal's hydropower sector will benefit greatly from SHEPL's insights and experience in the hydropower engineering services. I extend my gratitude to our staff, shareholders, stakeholders, and well-wishers whose unwavering support has propelled us to the forefront of Nepal's hydropower sector. In the years to come, I look forward to your continued support as we grow together in the noble mission of energizing Nepal to meet its goal of sustainable socio-economic development as well as serving our clients beyond our borders.

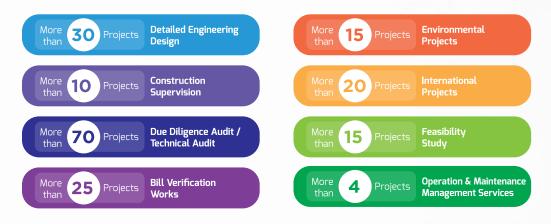
# Area of **EXPERTISE**



### Projects NAVIGATING SUCCESS THROUGH EXPERIENCE



### **Company Experience:**





Middle Tamor Hydropower Project (73 MW)

### Mai Hydropower Plant

#### 22 MW



Involved in:

Feasibility Study, Initial Environmental Examination, Detailed Engineering Design, Construction Supervision

Project Status: Constructed and Commissioned

Salient Features: Concrete gravity dam (Floating dam, Ogee spillway) Gross head: 122.10 m Design discharge: 23.43 m³/sec Pressurized headrace culvert: 1055.69 m Headrace tunnel: 2198 m Semi-surface Powerhouse with 3 unit vertical axis Francis Turbines





### Mai cascade Hydropower Plant

7 MW



Involved in:

Feasibility Study, Initial Environmental Examination, Detailed Engineering Design, Construction Supervision

Project Status: Constructed and Commissioned

Salient Features:

Gross head: 42.65 m Design discharge: 23.43 m<sup>3</sup>/sec Headrace canal/culvert: 3719.66 m Kholsi crossing system, Forebay, Spillways Penstock pipe: 218.50 m Surface powerhouse with 3 units of horizontal axis Francis Turbines

### Upper Trishuli-1 Hydroelectric Project

216 MW



Involved in: Detailed Engineering Design

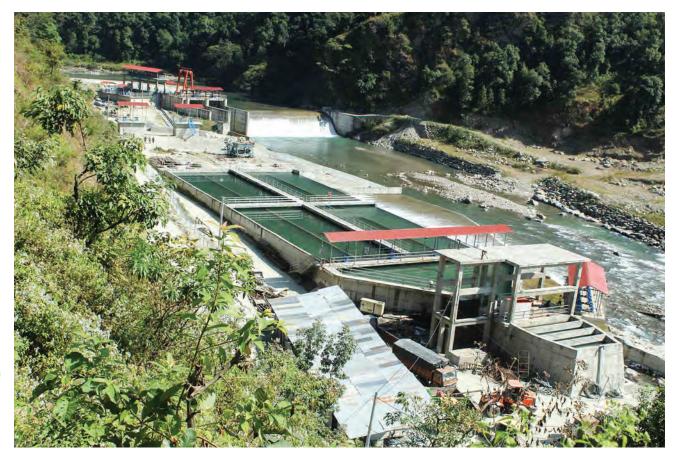
Project Status: In Construction Salient Features: Gross Head: 341 m Design discharge: 76 m<sup>3</sup>/sec 100.5 m long Concrete Gravity Diversion Dam Headrace Tunnel : 9.8 Km Penstock shaft: 110.7 Underground Powerhouse with three vertical axis Francis turbine generator units of 72MW capacity each.





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### Tallo Likhu Jalvidhyut Aayojana



Involved in: Feasibility Study, Initial Environmental Examination, Feasibility and IEE of Transmission Line, Detailed Project Report, Construction Supervision

Project Status: Completed and Commissioned Salient Features: Gross head: 118 m Design discharge: 29.75 m<sup>3</sup>/sec Concrete gravity dam (Floating dam, Ogee spillway) Headrace pipe: 304 m, Headrace tunnel: 4965 m Penstock pipe: 191 m Semi-surface Powerhouse with 2 unit vertical axis Francis Turbines

### Upper Ankhu Hydropower Project

44 MW



**Involved in:** Updated Feasibility study, Detailed Engineering Design and Tender Documents Preparation

Salient Features: Gross head: 277.50 m Design discharge: 19 m3/sec Ogee shaped gravity weir Headrace tunnel: 6332 m Penstock shaft: 505 m Surface type Powerhouse with 2 unit vertical shaft Francis Turbines

### Middle Tamor Hydropower Plant



#### Involved in:

Feasibility Study, Environmental Impact Assessment, Supplementary EIA, Feasibility and IEE of 220 kV Transmission Line, Detailed Project Report, Construction Supervision, Operation and Maintenance Management Services

Project Status: In Operation

### Super Madi Hydropower Project



Salient Features: Gross head: 132 m Design discharge: 73.71 m<sup>3</sup>/sec Concrete gravity dam (Floating dam, Ogee spillway) Headrace pipe: 281 m 3 bays underground settling basin Headrace tunnel: 3367 m, Penstock pipe: 452.04 m Semi-surface Powerhouse with 4 unit vertical axis Francis Turbines

> Involved in: Detailed Engineering Design, Bid Documents and Construction Drawings, Construction Supervision

Project Status: Completed and Commissioned

#### Salient Features:

Gross head: 295.97 m Design discharge: 18 m³/sec Free flow concrete ogee weir 2 bays Flushing type settling basin Headrace tunnel: 5282.31 m, Penstock pipe: 1401 m Powerhouse with 3 unit vertical axis Francis Turbines

44 MW

### **Upper Tamor Hydropower Project**

#### 285 MW



Involved in:

Feasibility Study, Environment Impact Study (EIA), Detailed Project Report (DPR), Tender Documents and Additional Engineering Support, and IEE of 220 KV Transmission Line.

Salient Features: Gross head: 450 m Design discharge: 68.64 m<sup>3</sup>/sec Barrage (Floating structure with overflow and non-overflow sections) 0.8 Million m<sup>3</sup> Headpond (CFRD) Headrace tunnel: 8410 m Penstock shaft: 961 m Underground powerhouse with 5 units vertical axis Pelton turbines

### Mathillo Mailung Khola Jalvidhyut Aayojana 14.3 MW



**Involved in:** Feasibility Study, IEE of Transmission Line, Detailed Engineering Design, Construction Supervision, Operation and Maintenance Management Services

Project Status: Completed and Commissioned Salient Features: Gross head: 495.5 m Design discharge: 3.53 m<sup>3</sup>/sec Boulder lined weir Headrace tunnel: 1736 m free flow tunnel Penstock shaft: 1172.38 m Surface powerhouse with 2 units of horizontal shaft Pelton turbines

### Rolwaling Khola Hydroelectric Project 20.66 MW

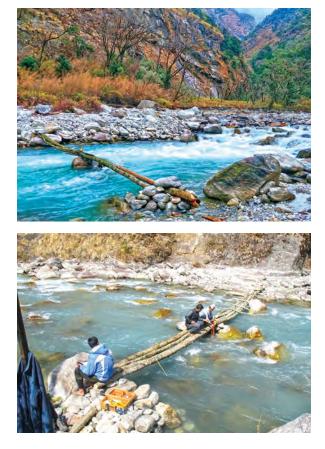


**Project Status:** In Construction

Salient Features: Gross head: 215.35 m Design discharge: 11.8 m<sup>3</sup>/sec Concrete Gravity Structure Overflow Weir Headrace tunnel: 4284 m Penstock shaft: 200 m Underground Powerhouse with vertical axis Francis turbine



### Jum Khola Jalvidhyut Aayojana



Involved in: Feasibility Study, Environmental Impact Assessment, Detailed Engineering Design, **Construction Supervision** 

**Project Status:** In Construction

Salient Features: Gross head: 254 m Design discharge: 25.45m<sup>3</sup>/sec 36 m long Concrete, free flow weir Headrace tunnel: 1519 m Penstock shaft: 387 m Underground Powerhouse with four Vertical axis Francis turbine

56 MW

### **Operation and Maintenance Management Services**



Middle Tamor Hydropower Plant (73MW)



Mathillo Mailung Jalvidyut Aayojana (14.3 MW)



Mai Hydropower Project (22 MW) & Mai Cascade Hydropower Project (7MW)



Tallo Likhu Jalvidyut Aayojana (28.1 MW)

Services Offered:

- Plant Operation
- Maintenance of Plant
- Technical Support
- Environmental Monitoring
- Civil Structures Inspection
- Mechanical and Electrical Systems Inspection
- Transmission Line Inspection
- Safety and Environmental Compliance
- Condition Assessment
- Efficiency and Performance Assessment
- Energy Production Forecasting

#### Detailed Engineering Design and Construction Supervision Projects

#### Sunkoshi Small Hydropower Plant (2.6 MW)

Salient Features: Design head : 124.50 m Design discharge: 2.7 m<sup>3</sup>/sec Water way length: 2550 m (GRP and mild steel) Surface powerhouse with 2 units of Turgo turbine



#### Upper Hewa A Hydropower Project (14.9 MW)

Salient Features: Design head : 221.52 m Design discharge: 8.12 m³/sec Boulder lined weir Headrace tunnel: 3929.75 m Penstock: 375.30 m Semi-surface Powerhouse with 2 unit vertical axis Francis Turbines



#### Junbesi khola Hydropower Project (5.2 MW)

Salient Features: Power Gross head : 221.5 m Design discharge: 2.99 m<sup>3</sup>/sec Boulder Lined Weir Headrace tunnel: 2983.8 m Penstock pipe: 438.6 m surface Powerhouse with 2 units of Horizontal Axis Pelton Turbine



#### Detailed Engineering Design Projects

#### Mewa Khola Hydroelectric Project (50MW)

Salient Features: Gross Head :198.78 m Discharge: 33m<sup>3</sup>/sec Headrace tunnel: 3100 m Penstock shaft: 1174 m



#### Tamor 5 Hydropower Project (37.5 MW)

Salient Features: Gross head : 98 m Design discharge: 47.5 m3/sec Concrete gravity dam 2 bays continuous flushing Settling Basin Headrace tunnel: 2448 m, Penstock pipe: 230 m Semi-surface Powerhouse with 3 unit vertical axis Francis Turbines



#### Upper Sankhuwa Hydroelectric Project (40MW)

Salient Features: Design gross head : 516 m Design discharge: 9.18 m<sup>3</sup>/sec Concrete gravity overflow dam Headrace tunnel: 3650 m Penstock shaft: 255 m Surface type Powerhouse with 2 unit vertical axis Pelton Turbines



### Construction Progress Monitoring and Bill Verification works

#### Super Dordi Hydropower Project Kha (54 MW)

Salient Features: Design head: 637.55 m Design discharge: 9.9 m³/sec Broad Crest Free flow gravity weir Underground Powerhouse Cavern Headrace tunnel: 5158.66 m Penstock pipe: 1048 m Semi-surface Powerhouse with 2 x 4 Jet Pelton, Vertical Axis, 600 RPM Turbines



#### Khani Khola -1 Hydropower Project (25 MW)

Salient Features: Design gross head : 964 m Design discharge: 3.20 m³/sec Boulder lined broad crested weir Underground Powerhouse Cavern Headrace tunnel: 1958 m Penstock pipe: 500 m Powerhouse with three units of horizontal axis Pelton turbines



#### Middle Modi Hydropower Project (18 MW)

Salient Features: Design Gross head : 72.91 m Design discharge: 25 m³/sec Underground Powerhouse Cavern Headrace tunnel: 2630 m

Penstock pipe: 147 m Semi-surface Powerhouse with two units of Francis turbines (horizontal axis) with 7.55 MW capacities each



#### Feasibility Study

#### Tallo Likhu Cascade Jalvidyut Aayojana (9600 KW)

Salient Features: Design discharge: 29.75 m<sup>3</sup>/sec Headrace culvert: 1200 m Penstock shaft: 46m Downstream of tailrace of TLJA Surface powerhouse with 2 Horizontal Axis Francis turbine



#### Madhya Mailung Jalvidyut Aayojana (13 MW)

Salient Features: Gross Head: 456.38 m Design discharge: 3.53 m<sup>3</sup>/sec Headrace Tunnel : 1463 m Penstock shaft: 347.87 m Surface Type Powerhouse with two Horizontal Axis Pelton turbine



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#### Mr. Tuk Prasad Paudel

- Hydropower Expert (More than 30 Years of Experience)
- M.Sc. in Hydropower Development, (2000) NTNU, Trondheim, Norway
- M.Sc. Civil Engineering (People's Friendship University, (1992), Moscow

Hydraulic Expert (More than 30 Years of Experience)





#### Mr. Binod Chapagain

Mr. Ajoy Karki

(1998-2000)

Expert Geologist (26 Years of Experience)

- M.Sc. Geological Engineering, International Institute for Aerospace Survey and Earth Sciences (ITC), Netherlands
- M.Sc. (Distinction) Geology and Exploration of Mineral Deposits, Russian Peoples' Friendship University, Moscow, Russia



#### Mr. Jayanta Kumar Regmi Legal Expert (21 Years of Experience)

 Master Degree in Economics. Central Department of Economics (Tribhuwan University), 1998

#### Mr. Sudeep Roka

Professional Chartered Accountant (10 years of Experience)

 Chartered Accountant: CA Final - May 2014 Bcom - from IGNOU, New Delhi - 2012





#### Mr. Grishma Ojha

Expert - Electrical Engineer (17 Years of Experience)

- ME Electrical Power Engineering, Kathmandu University/ Norwegian University of Science, and Technology, June 2012
- BE Electrical and Electronic Engineering, Kathmandu University, 2004

#### Mr. Sakunda Ojha

Environmental Expert (17 Years of Experience)

- M.Sc. Environmental Science, College of Applied Science
- Tribhuwan University, Nepal, 2008. B.Sc. Environmental Science, Tri-Chandra Campus, Tribhuwan University, Nepal, November.

#### Mr. Sudhir Giri

Electrical Engineer (14 Years of Experience)

- EMBA, 2020, Kathmandu University School of Management, Lalitpur, Nepal B. Tech., Electrical Engineering, 2009, Malaviya National
- Institute of Technology, Jaipur, India





- Masters of Science in Structural Engineering (2011-2012), University of Surrey , Guildford, United . Kinadom
- Bachelor of Engineering, Civil Engineering (2007-2010), University of Greenwich, Medway, United Kingdom

#### Mr. Subash Chandra Sunuwar

Expert - Geologist (More than 30 Years of Experience)

- M.Sc. in Engineering Geology, University of Leads, UK,
- 2000 M.Sc. in Geology, Tribhuvan University, Nepal, 1992











#### Dr. Subarna Das Shrestha

Hydropower Expert (More than 30 Years of Experience)

- Doctor of Philosophy (Ph.D.), in Technical Sciences (Hydro-technical and Land Reclamation Construction); 1998, Moscow, Russia
- M.Sc. (Hydraulic structures and hydroelectric power plant), 1991, Moscow Institute of Hydro-technical Engineering and Land Reclamation, Russia

#### Dr. Jugal Bhurtel

Environmental Expert (More than 30 Years of Experience)

- Ph.D. (Environmental Engineering), Yamaguchi University,
- Japan (2001) ۵ Master of Environmental Engineering, AIT, Bangkok, Thailand (1997)
- Master of Engineering, (Civil Engineering with Honors), Moscow State University of Civil Engineering, Moscow (1994)

#### Mr. Kieron Paul Hanson

Energy Engineering Expert (More than 30 Years of Experience)

 M.Sc. Energy Engineering
Diploma in Fuel Technology HND Mechanical Engineering





















- Env. Science, University Campus, TU, Nepal, 2008 2010 B.Sc. in Environmental Science, Tri Chandra Multiple
- Campus, Kathmandu, Nepal, 2004 2007

#### Mr. Bhoj Raj Paudel

Hydropower Expert (More than 30 Years of Experience)

M.Sc in Hydropower Development , NTNU, 2008-2010 B.E in Civil Engineering, 2003, Pulchowk Campus, Institute of Engineering (IOE), Kathmandu, Nepal

#### Mr. Maheshwar Maharjan

Expert - Construction Management (20 Years of Experience)

- M.Sc. Construction Management, Nepal Engineering
- College, Pokhara University, July 2019 B.Eng, in Civil Engineering, Nepal Engineering College (NEC), Tribhuwan University, Nepal, October 2002.

#### Mr. Sajan Shrestha

Expert - Civil Engineer (16 Years of Experience)

- Bachelor in Civil Engineering, (2003-2007), Pulchowk Campus, Institute of Engineering (IOE), Tribhuwan University, Nepal.
- Diploma in Architecture, (1999-2002), Thapathali Campus, Institute of Engineering (IOE), Tribhuwan University, Nepal.

#### Mr. Subash Thapa Magar

Hydraulic Engineer (14 Years of Experience)

- Masters in Water Science and Engineering, IHE Delft Institute for Water Education, The Netherlands (formerly UNESCO-IHE),
- Bachelor's Degree in Civil Engineering Kathmandu Engineering College Institute of Engineering, Tribhuwan University, Kathmandu (Nepal); 2005 – 2010

#### Dr. Gyanendra Lal Shrestha

Geotechnical Engineer (More than 30 Years of Experience)

- PhD in Tunnel Engineering from Norwegian University of Science and Technology, NTNU, Norway Msc. in Geotechnical Engineering

#### Mr. Kanhaiya Kumar Manandhar

Expert - Electrical Engineer (More than 30 Years of Experience)

- MSc in Industrial Engineering and Management (1984
- -1985), AlT, Bangkok, Thailand, BSc in Electrical Engineering (1978 1983) REC, Rourkela, India











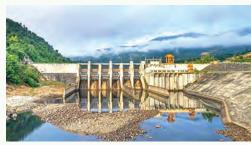
## Due Diligence Projects



Mid Hongu Khola -A Hydropower Project (22 MW)



Uileann Hydro Scheme (800 kW)



Suri Khola Hydroelectric Project (6.4 MW)



Siwa Khola Hydropower Project (9.3 MW)



Brahmayani Hydroelectric Project (35.47 MW)



Darbang Myagdi Hydroelectric Project (25 MW)



Mewa Khola Hydropower Project (23 MW)



Super Ankhu Khola Hydropower Project (25.4 MW)



Sagu Khola 1 Hydropower Project (5.5MW)



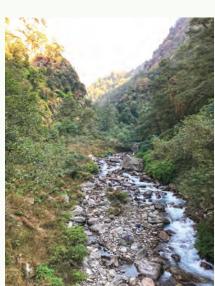
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Mid Hongu Khola - A Hydropower Project (22 MW)



Upper Balephi A Hydroelectric Project (36 MW)



Nyasim Khola Hydropower Project (35 MW)



Upper Brahmayani Hydroelectric Project (15.15 MW)

### International Projects



Corrour Estate Hydro Scheme\_Intake (5.3 MW), UK



Upper suileag (500 kW), UK















- Chitral Hydel Capacity Enhancement 1 to 5 MW, Pakistan
- Development of Hydropower & Renewable Energy (HRE II & HRE II), Pakistan
- Kipsonoi Kapkoros Small Hydropower Project (3 MW), Kenya
- North Mathoiya Small Hydropower Plant (3 MW), Kenya
- Support in Planning, Procurement & Construction Supervision of Mini Hydropower Projects, Ethiopia





### Office Dynamics:

Enhancing Collaboration Through Activities and Training





















#### Sanima Hydropower Limited

**Projects:** Sunkoshi Small Hydropower Plant (2.6 MW)

#### Sanima Mai Hydropower Limited

Projects: Mai Hydropower Plant (22 MW) Mai Cascade Hydropower Plant (7 MW)

#### Mathillo Mailun Khola Jalvidhyut Limited Projects:

Sanima Hydro Sister Concerns

Mathillo Mailung Khola Jalvidhyut Aayojana (14.3 MW) Upper Mailung B Hydropower Project (17 MW) Madhya Mailung Khola Jalvidhyut Aayojana (13 MW)

#### Swet Ganga Hydropower & Construction Limited Projects:

Tallo Likhu Jalvidhyut Aayojana (28.1 MW)

#### Sanima Middle Tamor Hydropower Limited

**Projects:** Middle Tamor Hydropower Plant (73 MW)

#### Sanima Jum Hydropower Limited Projects:

Jum Khola Jalvidhvut Aavoiana (56 MW)

Govt. Regd. No. 34195/061/062

#### सानिमा हाइड्रो एण्ड इन्जिनियरिङ प्रा. लि. SANIMA HYDRO AND ENGINEERING PVT. LTD.

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