COVER PAGE Project Verification Report Form (VR)	
BASIC INFORMATION	
Name of approved UCR Project Verifier / Reference No.	SQAC Certification Pvt. Ltd.
Type of Accreditation	☐ CDM or other GHG Accreditation ☐ ISO 14065 Accreditation ☒ UCR Approved
Approved UCR Scopes and GHG Sectoral scopes for Project Verification	01 Energy industries (Renewable/Non-Renewable Sources)
Validity of UCR approval of Verifier	October 2021 onwards.
Completion date of this VR	01/10/2025
Title of the project activity	109MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited
Project reference no.	UCR ID: **567**
Name of Entity requesting verification service	Nabil Bank Limited (Project Proponent) & AIROI INC. (Project Aggregator)
Contact details of the representative of the Entity, requesting verification service	Mr. Sujit Kumar Shakya Nabil Bank Limited Teendhara, Durbarmarg, Kathmandu, Nepal Mr. Vinod Vasudevan AIROI INC. 228 Hamilton Avenue, 3rd Floor, Palo Alto, CA 94301 USA
Country where project is located	Nepal

Applied methodologies (approved methodologies by UCR Standard used)	ACM0002: Grid-connected electricity generation from renewable sources --- Version 22.0
GHG Sectoral scopes linked to the applied methodologies	01 Energy industries (Renewable/Non-Renewable Sources)
Project Verification Criteria: Mandatory requirements to be assessed	☒ UCR Standard ☒ Applicable Approved Methodology ☐ Applicable Legal requirements /rules of host country ☒ Eligibility of the Project Type ☒ Start date of the Project activity ☒ Meet applicability conditions in the applied methodology ☒ Credible Baseline ☒ Do No Harm Test ☒ Emission Reduction calculations ☒ Monitoring Report ☒ No GHG Double Counting ☐ Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	☒ Environmental Safeguards Standard and do-no-harm criteria ☒ Social Safeguards Standard do-no-harm criteria
Project Verifier's Confirmation: The *UCR Project Verifier* has verified the UCR project activity and therefore confirms the following:	The UCR Project Verifier SQAC Certification Pvt. Ltd., certifies the following with respect to the UCR Project Activity 109MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited. ☒ The Project Owner has correctly described the Project Activity in the

	Project Concept Note dated 30/07/2025 and Monitoring Report of the monitoring period dated 30/07/2025 including the applicability of the approved methodology ACM0002: Grid-connected electricity generation from renewable sources --- Version 22.0 and meets the methodology applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively. ☒ The Project Activity is generating GHG emission reductions amounting to the estimated **8,68,461 tCO_2eq**, as indicated in the MR, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable UCR rules, including ISO 14064-2 and ISO 14064-3. ☒ The Project Activity is not likely to cause any net-harm to the environment and/or society ☒ The Project Activity complies with all the applicable UCR rules and therefore recommends UCR Program to register the Project activity with above mentioned labels.
Project Verification Report, reference number and date of approval	Monitoring Period Verification Report UCR Project ID: 567 dated 01/10/2025

Name of the authorised personnel of UCR Project Verifier and his/her signature with date	 Santosh Nair Lead Verifier (Signature) SQAC Certification Pvt Ltd

PROJECT VERIFICATION REPORT

Section A. Executive summary

The project "109 MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited" consists of two run-of-river hydropower plants in Nepal — the 27 MW Dordi Khola and the 86 MW Solu Khola (Dudhkoshi) — with a combined installed capacity of 109 MW. The project has been implemented under the Universal Carbon Registry (UCR) using the ACM0002 methodology (Grid-connected electricity generation from renewable sources, Version 22.0). By supplying renewable electricity to the grid, the project displaces fossil fuel–based generation and contributes to measurable greenhouse gas (GHG) emission reductions.

For the monitoring period **01 October 2022 to 31 December 2024**, the project achieved verified emission reductions totalling **868,461 CoUs**, equivalent to **868,461 tCO_2e**. This includes 14,596 tCO_2e in 2022, 428,269 tCO_2e in 2023, and 425,596 tCO_2e in 2024.

SQAC hereby confirms that the verified emission reductions achieved by the project activity during the period 01 October 2022 to 31 December 2024 amount to **868,461 CoUs,** equivalent to **868,461 tCO_2e**.

The project demonstrates clear environmental benefits through the reduction of GHG emissions, supports climate change mitigation, and provides positive social and economic contributions in the host regions. The Monitoring Report has been prepared in line with UCR requirements, and the reported results are conservative, credible, and verifiable.

Project Verification team, technical reviewer and approver

Section B. Project Verification Team

Sr. No.	Role	Last name	First name	Affiliation	Involvement in		
					Doc review	Off-Site inspection	Interviews
1.	Team Leader	Nair	Santosh	n/a	yes	yes	yes
2.	Validator	Nair	Santosh	n/a	yes	yes	yes

Technical reviewer and approver of the Project Verification report

Sr. No.	Role	Type of resource	Last name	First name	Affiliation
1.	Technical reviewer	IR	Shinganapurkar	Praful	SQAC Certification Pvt. Ltd.
2.	Approver	IR	Shinganapurkar	Praful	SQAC Certification Pvt. Ltd.

Section C. Means of Project Verification

C.1. Desk/document review

The remote verification was conducted through a comprehensive desk review of the Monitoring Report, Project Concept Note, and supporting annexures submitted by the project proponent. Key documents such as commissioning certificates, generation data, emission reduction calculations, and sustainability contributions were examined to confirm consistency with ACM0002 methodology and UCR requirements. The review focused on the accuracy, completeness, and traceability of reported information, with all assessments based on the documentary evidence made available for this verification.

C.2. Off-site inspection

Date of offsite inspection: 12/09/2025			
Sr. No.	**Activity performed Off-Site**	**Site location**	**Date**
1.	Interview conducted over Video call / Telephonic discussions.	Nepal	12/09/2025
2.	Supporting documents provided before, during, and after the verification.	Nepal	12/09/2025 till 29/09/2025

C.3. Interviews

Sr. No.	Interview			Date	Subject
	Name	Designation	Affiliation		
1	Manisha Vasudevan	Head – Carbon Projects	AIROI Inc.	12/09/2025	Project overview.
2	Dhiraj Sigdel	Plant Manager	AIROI Inc. - Dordi Khola Hydropower Project	12/09/2025	Double Counting, Project overview.
3	Sagar Khatiwaga	Relation Officer	Nabil Bank	12/09/2025	Project commissioning
4	Roshan Shrestha	Electrical Technician	AIROI Inc. - Dordi Khola Hydropower Project	12/09/2025	Calibration
5	Mukesh Bhel	Head Works Technician	AIROI Inc. - Dordi Khola Hydropower Project	12/09/2025	Compliance
6	Pravin Deshav	Plant Manager	AIROI Inc. - Solu Khola (Dudhkoshi) Hydroelectric Project	12/09/2025	Double Counting, Project overview.
7	Faizan Alam	Maintenance Incharge	AIROI Inc. - Solu Khola (Dudhkoshi) Hydroelectric Project	12/09/2025	Compliance
8	Shyam Thapa	Operation Incharge	AIROI Inc. - Solu Khola (Dudhkoshi) Hydroelectric Project	12/09/2025	Project overview
9	Bimal Jogi	Operation Head Works	AIROI Inc. - Solu Khola (Dudhkoshi) Hydroelectric Project	12/09/2025	Project commissioning
10	Suman Chaudhary	Head Works Department Incharge	AIROI Inc. - Solu Khola (Dudhkoshi) Hydroelectric Project	12/09/2025	Calibration

C.4. Sampling approach

Not applicable

C.5. Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)			
Identification and Eligibility of project type	Nil	Nil	Nil
General description of project activity	Nil	Nil	Nil
Application and selection of methodologies and standardized baselines			
- Application of methodologies and standardized baselines	Nil	Nil	Nil
- Deviation from methodology and/or methodological tool	Nil	Nil	Nil
- Clarification on applicability of methodology, tool and/or standardized baseline	Nil	Nil	Nil
- Project boundary, sources and GHGs	Nil	Nil	Nil
- Baseline scenario	Nil	Nil	Nil
- Estimation of emission reductions or net anthropogenic removals	Nil	Nil	Nil
- Start date, crediting period and duration	Nil	Nil	Nil
- Environmental impacts	Nil	Nil	Nil
- Project Owner- Identification and communication	Nil	Nil	Nil
- Others (please specify)	Nil	Nil	Nil
Total	Nil	Nil	Nil

Section D. Project Verification Findings

D.1. Identification and eligibility of project type

Means of Project Verification	Reviewed the Project Concept Note (PCN), Monitoring Report, and UCR registration details to confirm classification as a renewable energy project. Verified that the project applies ACM0002 methodology (Grid-connected electricity generation from renewable sources, Version 22.0) as per UCR requirements Cross-checked commissioning certificates of Dordi Khola (27 MW) and Solu Khola (86 MW) projects to confirm operational status within the crediting period Examined the project boundary, sectoral scope (Energy Industries), and host country authorization to ensure compliance with UCR eligibility criteria. Confirmed that the bundled hydro projects meet UCR definition of large-scale hydropower (>15 MW) and qualify under the approved positive list.
Findings	Upon verification, it was found that the project activity involves two run-of-river hydropower plants (Dordi Khola – 27 MW and Solu Khola – 86 MW) bundled together for a total installed capacity of 109 MW. The projects fall under Sectoral Scope 01 (Energy Industries) and apply ACM0002 methodology in line with UCR standards. Both plants were commissioned within the stated crediting period and are in continuous operation, supplying renewable electricity to the grid. No evidence of double counting or prior registration under other GHG programs was observed.
Conclusion	In conclusion, the project type has been correctly identified as a grid-connected, large-scale renewable energy activity (hydropower) eligible under UCR. The project fully meets the eligibility requirements of the UCR Standard and ACM0002 methodology. Based on verification, the project can be considered compliant for inclusion under UCR with no gaps identified.

	Scoring (Identification and eligibility of project type) Level 5 – Proven best practice: The project clearly meets eligibility requirements, applies the correct methodology, has robust documentation, and demonstrates operational compliance in multiple country contexts (Nepal–India cross-border grid supply).

D.2. General description of Project Activity

Means of Project Verification	Reviewed Monitoring Report (MR) for details of both hydropower projects – Dordi Khola (27 MW) and Solu Khola (86 MW). Examined Detailed Project Reports (DPRs) to validate project design, hydrology, electromechanical systems, and operational characteristics Cross-checked Power Purchase Agreement (PPA) of Solu Khola to confirm commercial arrangements and grid interconnection Verified commissioning timelines from MR against DPR references and contractual records. Reviewed CEA approval (2023) confirming export of power from Solu Khola (83.42 MW) and Dordi Khola (26.19 MW) to India, substantiating operational linkage to cross-border trade.
Findings	Upon verification, it was found that the Monitoring Report accurately describes the two bundled projects. The DPRs confirm technical design and feasibility, while the PPA demonstrates secure grid offtake arrangements. The CEA approval provides official evidence of export to India, corroborating MR statements. Both projects are confirmed as run-of-river hydro, consistent with UCR definitions.
Conclusion	In conclusion, the project activity description is consistent,

	complete, and corroborated by multiple independent documents. The projects are fully aligned with their registered design and contribute directly to renewable energy generation and cross-border grid supply. **Scoring (General description of Project Activity)** Level 4 – Good practice fully demonstrated, with documentation consistent and no gaps identified.

D.3. Application and selection of methodologies and standardized baselines

D.3.1 Application of methodology and standardized baselines

Means of Project Verification	Reviewed MR to confirm application of ACM0002 (grid-connected renewable energy methodology). Examined DPRs to verify that the projects are Greenfield, run-of-river hydro >15 MW, meeting ACM0002 applicability. Cross-checked baseline displacement assumptions with PPA and CEA approval confirming actual grid delivery from both projects to Haryana DISCOMs Validated conservative use of grid emission factors (0.9 tCO_2/MWh for 2022–2023, 0.757 tCO_2/MWh for 2024). Confirmed that methodology requirements for boundary, leakage, and project emissions are correctly applied.
Findings	Upon verification, it was found that ACM0002 has been appropriately applied. The DPRs confirm project design parameters consistent with methodology conditions. The PPA and CEA approval substantiate the displacement of fossil-based grid electricity through verified exports. Calculations of emission reductions were conservative and consistent across MR and supporting evidence.
Conclusion	In conclusion, the methodology application and baseline assumptions are robust, conservative, and corroborated by

	DPRs, contractual documents, and official regulatory approval. **Scoring (Application of methodology and standardized baselines)** Level 4 – All elements of good practice have been applied, with conservative methodology use ensuring reliability.

D.3.2 Clarification on applicability of methodology, tool and/or standardized baseline

Means of Project Verification	Reviewed ACM0002 (Version 22.0) to verify conditions for hydro power projects, including Greenfield applicability and power density requirements Cross-checked project activity characteristics (run-of-river type, no new reservoir creation, >15 MW installed capacity) with methodology conditions. Examined Monitoring Report evidence confirming that no retrofits, replacements, or debundling are involved. Verified that UCR-approved grid emission factors were used (0.9 tCO_2/MWh for 2022–2023, and 0.757 tCO_2/MWh for 2024) in line with methodology and UCR standard. Confirmed that the project is not registered under any other GHG program, thereby avoiding double counting
Findings	Upon verification, it was found that the project activity meets all applicability conditions of ACM0002 methodology. Both Dordi Khola (27 MW) and Solu Khola (86 MW) are new, grid-connected, run-of-river hydropower projects with no capacity additions or reservoir-related compliance concerns. The project boundary and emission factors applied are consistent with the methodology and UCR Standard. The Monitoring Report provides adequate justification and clarity on applicability of methodology and tool.

Conclusion	In conclusion, the clarification on applicability of methodology, tool, and standardized baseline is accurate and complete. The project has correctly demonstrated conformity with ACM0002 and UCR requirements without ambiguity. **Scoring (applicability of methodology, tool and/or standardized baseline**) Level 4 – All elements of good practice have been addressed, with methodology and baseline applicability clearly justified and conservatively applied.

D.3.3 Project boundary, sources and GHGs

Means of Project Verification	Reviewed MR boundary description covering both hydro plants, transmission lines, and the connected NEWNE grid. Confirmed boundary treatment in DPRs showing no reservoirs or additional emission sources Cross-checked CEA approval and PPA to verify grid interconnection and delivery points Validated that only CO_2 from displaced grid electricity is included, with project emissions and leakage set to zero per ACM0002.
Findings	Upon verification, it was found that the project boundary has been appropriately defined, covering the hydropower plants and the connected grid system. Only CO_2 emissions from displaced fossil fuel-based grid electricity are considered, while CH_4 and N_2O have been excluded in line with ACM0002. Project emissions and leakage have been conservatively set to zero, consistent with methodology requirements. The boundary definition and GHG source selection are transparent, conservative, and consistent with UCR guidelines.
Conclusion	In conclusion, the project boundary, emission sources, and

	included GHGs have been correctly determined and applied. The treatment is conservative, complete, and fully aligned with ACM0002 and UCR standards. **Scoring (Project boundary, sources and GHGs)** Level 4 – All relevant good practice requirements have been addressed, with conservative application ensuring methodological compliance.

D.3.4 Baseline scenario

Means of Project Verification	Reviewed MR baseline scenario (fossil-dominated NEWNE grid and diesel reliance). Examined DPRs to confirm no feasible renewable alternatives existed at project inception. Verified PPA terms and CEA approval (2023) that explicitly list Solu Khola (83.42 MW) and Dordi Khola (26.19 MW) as generators authorized for export to India Validated emission factors (0.9 and 0.757 tCO_2/MWh) applied in MR against UCR Standard and ACM0002. Confirmed consistency between MR narrative and independent regulatory evidence.
Findings	Upon verification, it was found that the baseline scenario is conservatively defined as fossil fuel–dominated grid supply and diesel generation. The DPRs confirm the absence of competing renewable baselines. The CEA approval and PPA provide independent confirmation that exported power from both projects displaces fossil-based generation. Application of emission factors was conservative and consistent with methodological requirements.
Conclusion	In conclusion, the baseline scenario has been transparently established, with corroborating evidence from DPRs, PPA, and CEA approval strengthening the Monitoring Report. The

	baseline is credible, conservative, and consistent with UCR requirements. **Scoring (Baseline Scenario)** Level 4 – All elements of good practice have been addressed, with conservative assumptions applied in line with methodology and UCR requirements.

D.3.5 Estimation of Emission Reductions or Net Anthropogenic Removal

Means of Project Verification	Reviewed Monitoring Report emission reduction tables for 2022, 2023, and 2024 Verified calculation formula as per ACM0002: ERy = BEy – PEy – LEy. Checked that project emissions (PEy) and leakage (LEy) are reported as zero in accordance with methodology. Cross-checked annual baseline emissions against applied emission factors (0.9 tCO_2/MWh for 2022–2023, 0.757 tCO_2/MWh for 2024). Compared reported electricity generation (MWh) with emission factor application to confirm consistency of total CoUs generated.
Findings	Upon verification, it was found that the Monitoring Report estimates a total emission reduction of **868,461 tCO_2e** for the monitoring period (01/10/2022 to 31/12/2024). The calculations are based on actual electricity delivered to the grid, multiplied by conservative grid emission factors. Project emissions and leakage were appropriately excluded in line with ACM0002, as both projects are run-of-river hydro plants with power density above the threshold. The emission reduction figures presented in the MR are consistent, transparent, and conservatively applied.

Conclusion	In conclusion, the estimation of emission reductions has been conducted in accordance with ACM0002 methodology and UCR Standard. The reported reductions of 868,461 tCO_2e for the monitoring period are reasonable, conservative, and verifiable. **Scoring (Emission Reduction Estimation)** Level 4 – All relevant elements of good practice have been addressed, with conservative assumptions ensuring credibility of the reported emission reductions.

D.3.6 Monitoring Report

Means of Project Verification	Reviewed the submitted Monitoring Report (MR) covering the period 01/10/2022 to 31/12/2024 Verified that the MR provides complete details of project description, commissioning dates, baseline scenario, applied methodology, monitoring parameters, and emission reductions. Checked consistency of reported data across sections, including electricity generation, emission factors, and calculation of CoUs. Confirmed that the MR includes annexures such as commissioning certificates, generation data, and emission reduction calculations. Ensured that the MR aligns with the registered PCN and methodology requirements under ACM0002.
Findings	Upon verification, it was found that the Monitoring Report provides all required information in line with UCR guidelines. The MR presents a clear description of the project activity, baseline scenario, and monitoring approach, supported by relevant annexures. Emission reduction calculations are

	transparent and consistent with the data reported. No material discrepancies were noted between sections of the MR, and the reporting format follows UCR requirements.
Conclusion	In conclusion, the Monitoring Report has been prepared in a complete and consistent manner. The information presented is sufficient to support verification of emission reductions and compliance with ACM0002 methodology and UCR Standard. **Scoring (Monitoring Report Quality)** Level 4 – All relevant elements of good practice have been met, with clear, consistent, and transparent reporting.

D.4. Start date, crediting period and duration

Means of Project Verification	Reviewed Monitoring Report details on project commissioning and crediting period Cross-checked commissioning dates: Dordi Khola (10 September 2022) and Solu Khola (10–12 February 2023). Verified that the crediting period under UCR runs from 01/10/2022 to 31/12/2024 (2 years, 3 months). Confirmed that the monitoring period covered in the MR corresponds exactly to the declared crediting period. Ensured that dates reported are consistent across sections and annexures (commissioning certificates, generation data).
Findings	Upon verification, it was found that the Monitoring Report clearly establishes the project start date and crediting period. Dordi Khola began operation in September 2022 and Solu Khola in February 2023, both within the crediting period starting from October 2022. The duration of 2 years and 3 months has been consistently applied, and all emission reduction estimates align with this timeframe. No discrepancies in dates were observed.

Conclusion	In conclusion, the start date, crediting period, and duration have been correctly determined and reported in the Monitoring Report. They are consistent, verifiable, and in line with UCR requirements. **Scoring (Start Date & Crediting Period)** Level 4 – All relevant good practice elements have been addressed, with accurate and consistent reporting of project dates and crediting period.

D.5. Positive Environmental impacts

Means of Project Verification	Reviewed the Monitoring Report section on "Do No Harm / Impact Test" and sustainable development contributions Verified statements regarding avoidance of GHG emissions (868,461 tCO_2e during the monitoring period). Checked references to reduction of air pollutants (SOx, NOx, and particulate matter) compared to thermal generation. Confirmed that no adverse impacts such as air pollution, water contamination, or solid waste generation are associated with the run-of-river hydro projects. Cross-checked consistency of reported environmental benefits with ACM0002 and UCR sustainability guidance.
Findings	Upon verification, it was found that the Monitoring Report highlights significant positive environmental impacts of the project. The hydropower plants generate renewable electricity without associated emissions, displacing fossil fuel–based grid power and avoiding 868,461 tCO_2e during the monitoring period. In addition, the projects reduce conventional pollutants (SOx, NOx, SPM) that are common in coal-fired plants. The MR confirms that the projects did not cause negative environmental impacts, as they are run-of-river facilities with

	no reservoir-related emissions.
Conclusion	In conclusion, the project activity demonstrates clear and measurable positive environmental impacts. The renewable generation leads to substantial GHG emission reductions and contributes to air quality improvement, aligning with sustainable development and climate action goals. **Scoring (Positive Environmental Impacts)** Level 4 – All elements of good practice have been undertaken, with verifiable evidence of GHG reductions and avoidance of harmful pollutants.

D.8. Project Owner- Identification and communication

Means of Project Verification	Reviewed Monitoring Report details of project participants and authorized representative Verified that Nabil Bank Limited is identified as the project proponent and AIROI Inc. as the authorized representative. Checked that contact information, including name, designation, address, and email of the responsible person, is provided in the MR. Cross-checked consistency of project ownership details across the PCN, MR, and annexures. Confirmed that roles and responsibilities of the project proponent and representative are clearly stated.
Findings	Upon verification, it was found that the Monitoring Report clearly identifies Nabil Bank Limited as the project owner and AIROI Inc. as the authorized representative. Full contact details of the responsible officer are provided, and the information is consistent across project documentation.

	Communication channels between the project owner and UCR have been adequately established. No discrepancies or gaps were noted in project ownership identification.
Conclusion	In conclusion, the project ownership and communication details are clear, consistent, and verifiable as per the Monitoring Report. This ensures transparency and accountability for project implementation and reporting under UCR. **Scoring (Project Owner Identification & Communication)** Level 4 – All elements of good practice have been met, with transparent identification and established communication channels.

D.9. Positive Social Impact

Means of Project Verification	Reviewed Monitoring Report statements on local employment generation and training programs for workers and communities. Examined DPRs for references to infrastructure improvements, particularly roads and access facilities developed in the project areas. Cross-checked alignment of reported benefits with SDG 8 (Decent Work and Economic Growth) as referenced in the MR.
Findings	Upon verification, it was found that the projects created employment opportunities for both skilled and unskilled workers during construction and operations. Training and capacity-building programs were conducted, contributing to skill enhancement at the local level. The DPRs also confirm that access roads were developed and upgraded as part of the project infrastructure, which benefits nearby communities. No evidence of adverse social impacts or unresolved community grievances was identified.

Conclusion	In conclusion, the project activity has contributed positively to social well-being through employment, training, and improved accessibility in remote areas. These contributions are verifiable from the MR and DPRs and align with UCR's sustainable development objectives. **Scoring (Positive Social Impacts)** Level 4 – All elements of good practice have been demonstrated, with verifiable evidence of employment, training, and community infrastructure benefits.

D.10. Sustainable development aspects (if any)

Means of Project Verification	Reviewed Monitoring Report section on "Do No Harm / Impact Test" and SDG contributions Verified reported alignment with national sustainable development indicators (economic, social, environmental, and technological well-being). Checked consistency of reported impacts with specific SDGs – SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), and SDG 13 (Climate Action). Cross-checked emission reduction achievements (868,461 tCO_2e avoided) as evidence of climate action benefits. Confirmed that no adverse sustainability impacts (e.g., displacement, pollution) were reported in the MR.
Findings	Upon verification, it was found that the Monitoring Report highlights several sustainable development contributions. The project increases renewable energy share in the grid (SDG 7), creates employment and training opportunities in remote areas (SDG 8), and significantly reduces GHG emissions, supporting climate change mitigation (SDG 13). The MR also confirms that the project obtained necessary environmental clearances and does not result in harmful impacts. Overall, the project aligns with multiple pillars of sustainable

	development and contributes to national and global goals.
Conclusion	In conclusion, the project demonstrates positive sustainable development aspects through clean energy generation, social and economic benefits, and measurable climate action contributions. The information provided in the Monitoring Report is consistent and sufficient to verify these claims. **Scoring (Sustainable Development Aspects)** Level 4 – All elements of good practice have been addressed, with clear contributions to multiple SDGs and no identified negative impacts.

Section E. Internal Quality Control

For the current verification of the 109 MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited, rigorous internal quality control measures were applied to ensure the reliability and transparency of the process. All verification activities, including review of the Monitoring Report, supporting annexures, and emission reduction calculations, underwent systematic internal checks to identify and resolve any discrepancies. Verification personnel-maintained competence through ongoing training in UCR standards, ACM0002 methodology, and large hydro sustainability guidance.

Established Standard Operating Procedures (SOPs) were followed for evidence review, data assessment, and reporting, ensuring consistency with international good practice. A structured documentation management system was used to maintain traceable records of reviewed data, project documents, and applied methodologies. Internal peer reviews were conducted within the verification team to validate findings, cross-check emission reduction calculations, and confirm alignment with UCR requirements.

The verification process was carried out with a focus on continuous improvement, incorporating lessons learned from past verifications of large-scale renewable energy projects. This robust internal control framework ensured that the conclusions reached in this report are accurate, defensible, and in full conformity with the principles of independence, transparency, and professional integrity.

Section F. Project Verification Opinion

Based on the remote audit conducted for the project activity *"109 MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited"* covering the monitoring period from 01 October 2022 to 31 December 2024, the following verification opinion is provided:

- The project has been correctly identified as a large-scale, grid-connected renewable energy activity, eligible under UCR, applying ACM0002 methodology (Version 22.0).
- The Monitoring Report has been prepared in a complete, consistent, and transparent manner. It provides sufficient information to verify project implementation, monitoring approach, and emission reduction calculations.
- The project boundary, baseline scenario, and applied emission factors are conservative and in full conformity with ACM0002 and UCR Standard requirements.
- The estimated emission reductions of 868,461 tCO_2e during the monitoring period are reasonable, conservative, and verifiable based on the information reported.
- The project demonstrates clear environmental, social, and sustainable development contributions, with no evidence of adverse impacts.

In line with the UCR Additional Verification Guidance for Large Hydropower Projects, the verification also assessed the four mandatory sustainability aspects and their scoring:

- Environmental and Social Issues Management – Level 4
- Project Benefits – Level 4
- Project-Affected Communities and Livelihoods / Resettlement – Level 3
- Biodiversity and Invasive Species – Level 3

Verification Opinion:

In our opinion, the Monitoring Report for the project activity *"109 MW Large Scale Bundle Nepal Hydroelectric Station by Nabil Bank Limited"* has been prepared in accordance with UCR requirements. The reported greenhouse gas emission reductions are fairly stated, conservative, and free from material misstatements to the best of our knowledge. The project is compliant with UCR requirements for verification and demonstrates strong alignment with international good practice in renewable energy and sustainable development.

Sustainability Profile – Large Hydropower Project (UCR Guidance)

Topic	Score	Justification
Environmental and Social Issues Management	Level 4	Environmental clearances obtained; no major social or environmental issues reported; compliance with national regulations and UCR guidance confirmed.
Project Benefits	Level 4	Demonstrated employment generation, skill development, and infrastructure improvements benefiting local communities.
Project-Affected Communities and Livelihoods / Resettlement	Level 3	No resettlement required due to run-of-river design; positive livelihood contributions noted through jobs and access improvements.
Biodiversity and Invasive Species	Level 3	Minimal biodiversity impacts confirmed; no invasive species issues reported; no additional biodiversity measures beyond compliance undertaken.

Appendix 1. Abbreviations

Abbreviations	Full texts
UCR	Universal Carbon Registry
PP/PO	Project Proponent / Project Owner
PA	Project Aggregator
ER	Emission Reduction
COUs	Carbon offset Units.
tCO2e	Tons of Carbon Dioxide Equivalent
CDM	Clean Development Mechanism
SDG	Sustainable Development Goal
CAR	Corrective Action Request
CR	Clarification Request
FAR	Forward Action Request
GHG	Green House Gas
MR	Monitoring report
PCN	Project Concept Note
VR	Verification Report
VS	Verification Statement
COD	Commercial Operation Date

Appendix 2. Competence of team members and technical reviewers

Sr. No.	Role	Name	Education Qualification	Related Experience
1.	Team Leader / Lead Verifier / Validator	Santosh Nair	BE (Chemical) Lead Auditor in ISO 9001,14001, 45001,13485,22301 ,22000,27001,14064-1,2,3	Carbon Verifier for all major sectors such as Wind, Solar, Hydro, Biomass, Biogas, Waste Heat Recovery, Biofuel, etc.
2.	Technical reviewer	Praful Shinganapurkar	BE (Mechanical) Certified Energy Auditor Lead Auditor in ISO 9001,14001 & 45001	Carbon Verifier for all major sectors such as Wind, Solar, Hydro, Biomass, Biogas, Waste Heat Recovery, Biofuel, etc.

Appendix 3. Document reviewed or referenced

Sr. No.	Author	Title	Provider
1.	Maverik Incorporation	PCN	Maverik Incorporation
2.	Maverik Incorporation	MR	Maverik Incorporation
3.	Maverik Incorporation	Emission Reduction Calculation Sheet	Maverik Incorporation
4.	Commissioning Certificate	Turbine Commissioning Certificate	Maverik Incorporation
5.	Amtek Power Instrument	Calibration Certificate	Maverik Incorporation
6.	Nepal Electricity Authority	Meter Calibration	Maverik Incorporation
7.	Nepal Electricity Authority	Energy Meter Commissioning Report	Maverik Incorporation
8.	Himalayan Power Partner Ltd. & Nepal Electricity Authority	Joint Meter Readings	Maverik Incorporation
9.	Sahas Urja Ltd. & Nepal Electricity Authority	Joint Meter Readings	Maverik Incorporation

10.	Nepal Electricity Authority & Sahas Urja Ltd.	Power Purchase Agreement	Maverik Incorporation
11.	Central Electricity Authority	Electricity Imports to Haryana DISCOMs	Maverik Incorporation
12.	Entura Hydro Tasmania India Pvt. Limited	Detailed Project Report - Dordi Khola	Maverik Incorporation
13.	Hydro-Consult Engineering	Detailed Project Report - Solu Khola (Dudh Koshi)	Maverik Incorporation

Appendix 4. Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

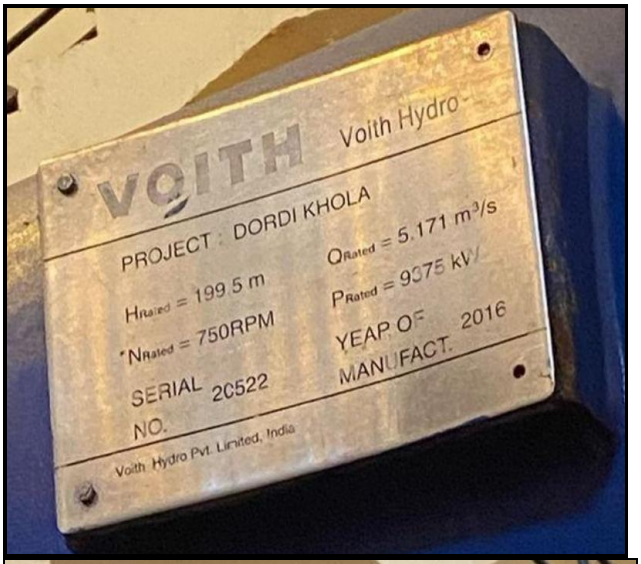
CL ID	00	**Section no.**		**Date:** DD/MM/YYYY
Description of CL :				
n/a				
Project Owner's response				**Date:** DD/MM/YYYY
n/a				
Documentation provided by Project Owner				
n/a				
UCR Project Verifier assessment				**Date:** DD/MM/YYYY
n/a				

Table 2. CARs from this Project Verification

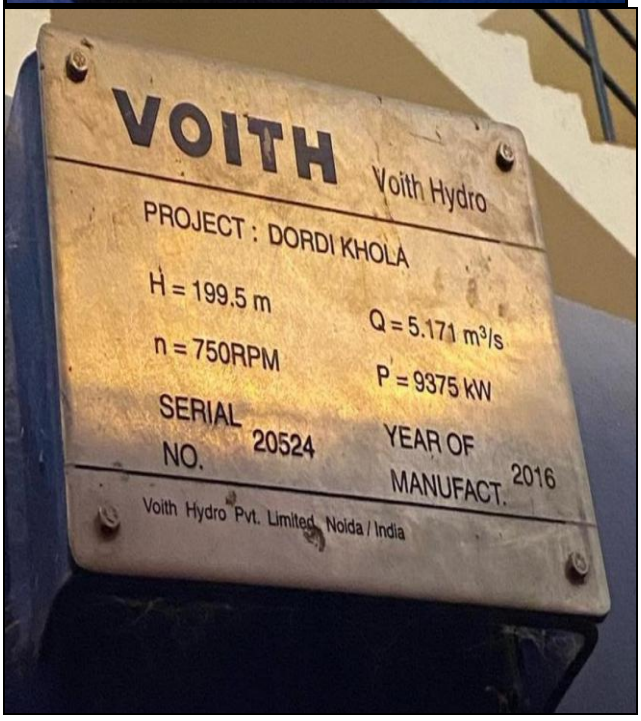
CAR ID	00	**Section no.**		**Date:** DD/MM/YYYY
Description of CAR				
n/a				
Project Owner's response				**Date:** DD/MM/YYYY
n/a				
Documentation provided by Project Owner				
n/a				
UCR Project Verifier assessment				**Date:** DD/MM/YYYY
n/a				

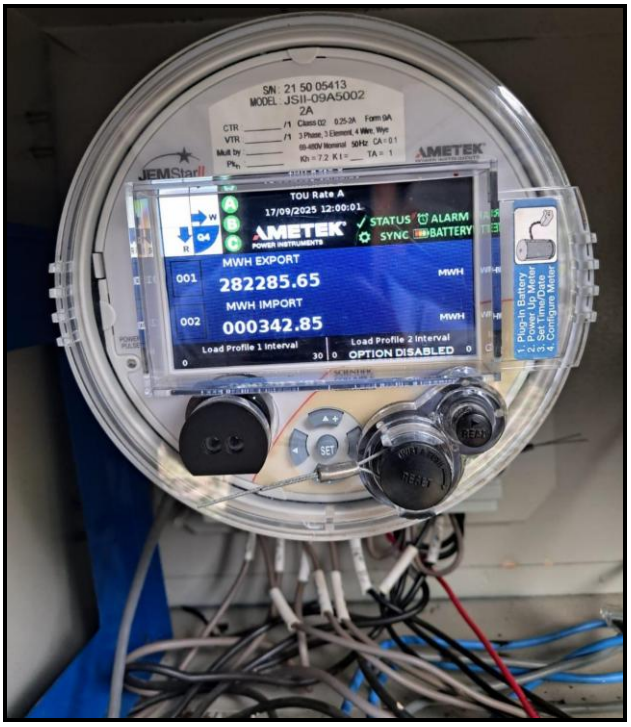
Table 3. FARs from this Project Verification

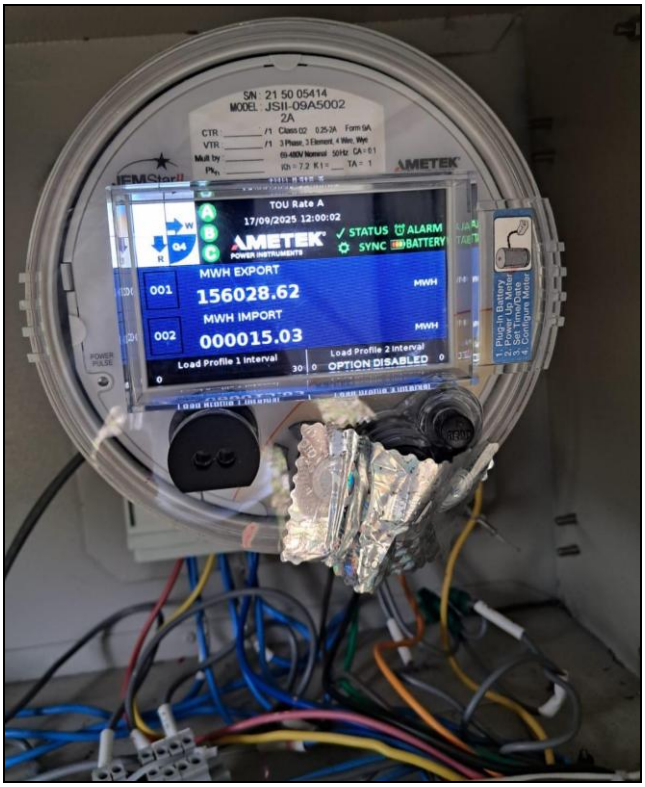
FAR ID	Nil	**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
n/a				
Project Owner's response				**Date:** DD/MM/YYYY
n/a				
Documentation provided by Project Owner				
n/a				
UCR Project Verifier assessment				**Date:** DD/MM/YYYY
n/a				


VOITH
Voith Hydro
PROJECT : DORDI KHOLA
HRated = 199.5 m
QRated = 5.171 m³/s
NRated = 750RPM
PRated = 9375 kW
SERIAL NO. 20522
YEAR OF MANUFACT. 2016
Voith Hydro Pvt. Limited, India


PROJECT : DORDI KHOLA
HRated = 199.5 m
QRated = 5.171 m³/s
NRated = 750RPM
PRated = 9375 kW
SERIAL NO. 20523
YEAR OF MANUFACT. 2016
Voith Hydro Pvt. Limited, India


VOITH
Voith Hydro
PROJECT : DORDI KHOLA
H = 199.5 m
Q = 5.171 m³/s
n = 750RPM
P = 9375 kW
SERIAL NO. 20524
YEAR OF MANUFACT. 2016
Voith Hydro Pvt. Limited, Noida / India


AMETEK
TOU Rate A
17/09/2025 12:00:01
STATUS ALARM
SYNC BATTERY
MWH EXPORT
001
282285.65
MWH
MWH IMPORT
002
000342.85
MWH
Load Profile 1 interval
Load Profile 2 interval
OPTION DISABLED



Himalayan Power Partner Limited
Dordi Khola Hydroelectric Project (27mw)
Dhodeni, Lamjung
Head Works Water Level Log Sheet

Date: 2082/05/27

Time:	Power (MW)	Water Level (Metres)	Signature
Sudip 1 hour DayShift:			
7:30	5·1 mw	764·3	Sudip
8:30	10·9 mw	764·3	Sudip
9:30	13·5 mw	764·3	Sudip
10:30	17·5 mw	764·3	Sudip
11:30	19·05 mw	764·3	Sudip
12:30	16·2 mw	764·3	Sudip
13:30	16·2 mw	764·3	Sudip
14:30	10·8 mw	764·3	Sudip
15:30	10·8 mw	764·3	Sudip
16:30	10·8 mw	764·3	Sudip
17:30	10·8 mw	764·3	Sudip
18:30	13·5 mw	764·3	Sudip
mukesh Ghw Night Shift: Lal Bdr Tamang			
19:00			
19:30	16·3 mw	764·3	mukesh
20:00			
20:30	13·6 mw	764·3	mukesh
21:00			
21:30	11·1 mw	764·3	mukesh
22:00			
22:30	11·1 mw	764·3	mukesh
23:00			
23:30	11·1 mw	764·3	mukesh
0:00			
0:30	11·0 mw	764·3	mukesh
1:00			
1:30	11·1 mw	764·3	Lal Bdr Tamang
2:00			
2:30	11·1 mw	764·3	Lal Bdr Tamang
3:00			
3:30	11·1 mw	764·3	Lal Bdr Tamang
4:00			
4:30	11·1 mw	764·3	Lal Bdr Tamang
5:00			
5:30	11·5 mw	764·3	Lal Bdr Tamang
6:00			
6:30	5·1 mw	764·3	Lal Bdr Tamang

NOTE:

Date: 2082/05/28

Time:	Power (MW)	Water Level (Metres)	Signature
Sudip DayShift:			
7:30	5·1 mw	764·3	Sudip
8:30	5·1 mw	764·3	Sudip
9:30	5·1 mw	764·3	Sudip
10:30	5·1 mw	764·3	Sudip
11:30	5·1 mw	764·3	Sudip
12:30	5·1 mw	764·3	Sudip
13:30	5·1 mw	764·3	Sudip
14:30	5·1 mw	764·3	Sudip
15:30	5·1 mw	764·3	Sudip
16:30	5·1 mw	764·3	Sudip
17:30	5·1 mw	764·3	Sudip
18:30	21·6 mw	764·3	Sudip
mukesh Ghw Night Shift: Lal Bdr Tamang			
19:00			
19:30	13·6 mw	764·3	mukesh
20:00			
20:30	13·6 mw	764·3	mukesh
21:00			
21:30	8·1 mw	764·3	mukesh
22:00			
22:30	5·5 mw	764·3	mukesh
23:00			
23:30	8·1 mw	764·3	mukesh
0:00			
0:30	8·1 mw	764·3	Lal Bdr Tamang
1:00			
1:30	5·5 mw	764·3	Lal Bdr Tamang
2:00			
2:30	5·5 mw	764·3	Lal Bdr Tamang
3:00			
3:30	5·5 mw	764·3	Lal Bdr Tamang
4:00			
4:30	5·5 mw	764·3	Lal Bdr Tamang
5:00			
5:30	5·54 mw	764·3	Lal Bdr Tamang
6:00			
6:30	5·55 mw	764·3	Lal Bdr Tamang

VOITH Voith Hydro

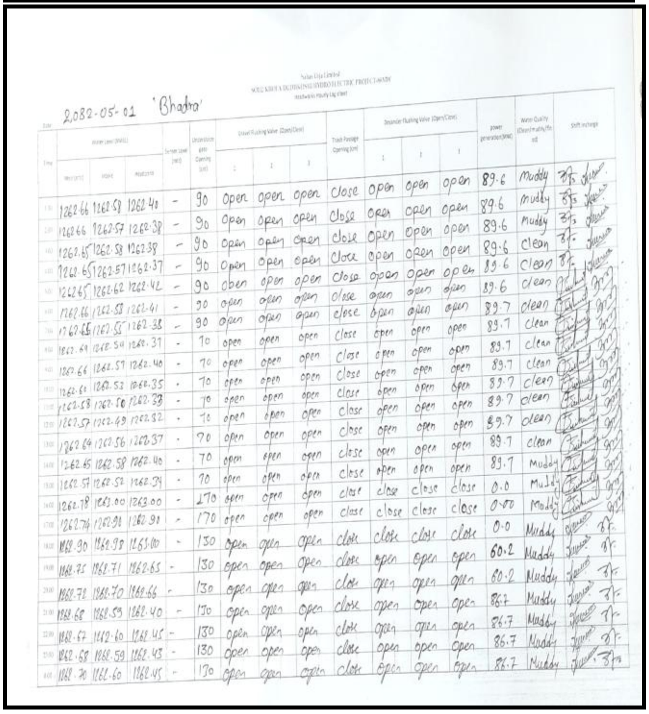
PROJECT : SOLU KHOLA

RATED OUTPUT : 33487 kW RATED HEAD : 599.33 m

RATED DISCHARGE : 6.251 m³/s RATED SPEED : 750 rpm

SERIAL NUMBER : * YEAR OF MANUFACTURE : 2021-22

Voith Hydro Pvt. Ltd., Noida / India ◦ www.voith.com ◦ A Voith Company



Headworks Hourly Log sheet

Date: 2082-05-01 'Bhadra'

Time	Water Level (MASL)			Screen Level (cm)	Undersluice gate Opening (cm)	Gravel Flushing Valve (Open/Close)			Trash Passage Opening (cm)	Desander Flushing Valve (Open/Close)			power generation (MW)	Water Quality	Shift incharge
	[illegible]	[illegible]	[illegible]			1	2	3		1	2	3			
[illegible]	1262.66	1262.58	1262.40	-	90	open	open	open	close	open	open	open	89.6	Muddy	
[illegible]	1262.66	1262.57	1262.38	-	90	open	open	open	Close	open	open	open	89.6	muddy	
[illegible]	1262.65	1262.58	1262.38	-	90	open	open	open	close	open	open	open	89.6	muddy	
[illegible]	1262.65	1262.57	1262.37	-	90	open	open	open	Close	open	open	open	89.6	clean	
[illegible]	1262.65	1262.62	1262.42	-	90	oben	open	open	close	open	open	open	89.6	clean	
[illegible]	1262.66	1262.58	1262.41	-	90	open	open	open	close	open	open	open	89.6	clean	
[illegible]	1262.65	1262.55	1262.38	-	90	open	open	open	close	open	open	open	89.7	clean	
[illegible]	1262.69	1262.54	1262.31	-	70	open	open	open	Close	open	open	open	89.7	Clean	
[illegible]	1262.66	1262.57	1262.40	-	70	open	open	open	Close	open	open	open	89.7	clean	
[illegible]	1262.60	1262.53	1262.35	-	70	open	open	open	close	open	open	open	89.7	Clean	
[illegible]	1262.58	1262.50	1262.38	-	70	open	open	open	close	open	open	open	89.7	clean	
[illegible]	1262.57	1262.49	1262.32	-	70	open	open	open	close	open	open	open	89.7	clean	
[illegible]	1262.64	1262.56	1262.37	-	70	open	open	open	close	open	open	open	89.7	clean	
[illegible]	1262.65	1262.58	1262.40	-	70	open	open	open	close	open	open	open	89.7	clean	
[illegible]	1262.57	1262.52	1262.34	-	70	open	open	open	close	open	open	open	89.7	Muddy	
[illegible]	1262.78	1263.00	1263.00	-	170	open	open	open	close	close	close	close	0.0	Muddy	
[illegible]	1262.74	1262.90	1262.90	-	170	open	open	open	close	close	close	close	0.00	Muddy	
[illegible]	1262.90	1262.98	1263.00	-	130	open	open	open	close	close	close	close	0.0	Muddy	
[illegible]	1262.75	1262.71	1262.65	-	130	open	open	open	close	open	open	open	60.2	Muddy	
[illegible]	1262.72	1262.70	1262.66	-	130	open	open	open	close	open	open	open	60.2	Muddy	
[illegible]	1262.68	1262.59	1262.40	-	130	open	open	open	close	open	open	open	86.7	Muddy	
[illegible]	1262.67	1262.60	1262.45	-	130	open	open	open	close	open	open	open	86.7	Muddy	
[illegible]	1262.68	1262.59	1262.43	-	130	open	open	open	close	open	open	open	86.7	Muddy	
[illegible]	1262.70	1262.60	1262.45	-	130	open	open	open	close	open	open	open	86.7	Muddy	

SCHEDULE 10: MONTHLY METER READING FORM

Sahas Urja Limited
Solu Khola (Dudhkoshi) Hydroelectric Project - 86MW

Head Office: Hattisar, KMC-1, Kathmandu
Tel: 01-4519182/183, 4522755/756
Email: surja@sahasurja.com

Site Office: Maikhubesi, Thulung Dudhkoshi Gaunpalika - 3, Solukhumbu
Tel: 9852822256
Email: site@sahasurja.com

A. MONTHLY METER READING OF SOLU KHOLA (DUDHKOSHI) HYDROELECTRIC PROJECT - 86 MW AT TINGLA SUBSTATION

Fiscal Year: 2080/81
Month (Nepali): Bhadra

Meter Reading Date (Nepali): 2080/06/01
(English): 18 Sep, 2023

(Meter reading shall be done at 12:00 Hrs. on the first day of the Month subsequent to the billing month)

For Circuit 1:

METER READING DESCRIPTION	MAIN METER Make: JEMSTAR Model No: JSII-09A50021B-3A S. No. 22 03 05547		CHECK METER Make: JEMSTAR Model No: JSII-09A50021B-3A S. No.: 22 03 05548		DIFFERENCE (%)	
	TO NEA	FROM NEA	TO NEA	FROM NEA	TO NEA	FROM NEA
THIS MONTH READING	129772.90	3.74	129801.95	3.72		
LAST MONTH READING	97452.20	3.62	97474.33	3.60		
DIFFERENCE	32,320.70	0.12	32,327.62	0.12	0.021	0.00
METER MULTIPLIER	1,000	1,000	1,000	1,000		
KILOWATT-HOURS	**32,320,700**	**120**	**32,327,620**	**120**		

For Circuit 2:

METER READING DESCRIPTION	MAIN METER Make: JEMSTAR Model No: JSII-09A50021B-3A S. No. 22 03 05549		CHECK METER Make: JEMSTAR Model No: JSII-09A50021B-3A S. No.: 22 03 05550		DIFFERENCE (%)	
	TO NEA	FROM NEA	TO NEA	FROM NEA	TO NEA	FROM NEA
THIS MONTH READING	125161.48	2.58	125173.91	2.57		
LAST MONTH READING	92771.02	2.46	92780.22	2.45		
DIFFERENCE	32,390.46	0.12	32,393.69	0.12	0.010	0.00
METER MULTIPLIER	1,000	1,000	1,000	1,000		
KILOWATT-HOURS	**32,390,460**	**120**	**32,393,690**	**120**		

Schedule 10: Monthly Meter Reading Form
Dordi Khola HPP (27 MW), Lamjung

Himalayan Power Partner Ltd.

Head Office: Panipokhari, Kathmandu
Phone: 01-44002801;
Email: hpphydro@gmail.com
URL: www.hpp.com.np

Site Office: Besishahar-11, Remchowk, Lamjung
Phone: 9846748775;
Email: hpphydro.onm@gmail.com

A. MONTHLY METER READING

Fiscal Year: 2079/80 Month (Nepali): Baisakh 2080

Meter Reading Date (AD): May 15, 2023
BS: 01 Jestha 2080

(Meter reading shall be done at 12:hrs on first day of the month subsequent to the billing month)

SN	Meter Reading Description	Main Meter Make: AMETEK Model No.: JSII-09A5002 S.N.: 21 50 05413		Check Meter Make: AMETEK Model No.: JSII-09A5002 S.N.: 21 50 05414		Difference [%]	
		To NEA Export, MWh	From NEA Import, MWh	To NEA Export, MWh	From NEA Import, MWh	To NEA Export	From NEA Import
1	THIS MONTH'S READING	48,481.73	277.35	48,472.91	276.76	0.02%	0.21%
2	LAST MONTH'S READING	42,831.54	276.81	42,823.93	276.24	0.02%	0.21%
3	DIFFERENCE	5,650.19	0.54	5,648.98	0.52	0.02%	3.70%
4	METER MULTIPLE	1,000	1,000	1,000	1,000		
5	KILOWATT-HOUR (MMC)	5,650,190.00	540.00	5,648,980.00	520.00	0.02%	3.70%

Remarks (If any):

COMPANY REPRESENTATIVE:
(Signature)
Name: Bijay Khadka
Designation: Plant Engineer
English Date: May 15, 2023
Nepali Date: 01 Jestha 2080
Time: 12:00 PM
Official Seal:

NEA REPRESENTATIVE:
(Signature)
Name: Anil Banjade
Designation: Deputy Manager
English Date: May 15, 2023
Nepali Date: 01 Jestha 2080
Time: 12:00 PM
Official Seal:

Himalayan Power Partner Limited
DordiKhola Hydropower Project 27 MW

6. ANNEX 2: WET TEST

Generating Unit - 1
Individual Unit Load Rejection Test and Observation Results

Date: 079-05-25 (10/09/2022 AD)

S.N	Load			Guide Opening	Speed			Frequency			Voltage			Governor Closing Time (Sec.)	Penstock Pressure (Bar)			Remarks
					Before LR	After LR	Change	Before LR	After LR	Change	Before LR	After LR	Change		Before LR	After LR	Change	
	%	kW	kVAr	%	RPM	RPM	%	Hz	Hz	%	kV	kV	%	Sec.	Bar	Bar	%	
1	50	4490	50	47.62%	750	894	19.20	50.03	59.62	19.17	10.91	11.03	1.10	6	20.4	22.40	9.80	By Unit Breaker
2	100	9220	90	85.30%	751	1038	38.22	50.3	69	37.18	11.01	11.22	1.91	9	20.4	23.50	15.20	By Unit Breaker

NEA REPRESENTATIVES:
1.Mr.Bikram Poudel(PPA Department)
2.Mr Sitaram Sigdel(PPA Department)
3.Mr Madhav Poudel(Grid,Pokhara)
4.MrGopal Yadav(LDC)
5.Mr Deepak Bashyal(Middle Marshyangdi HEP)
6.MrShiva Kunwar(Marshyangdi Corridor 220 KV TL Project)
7.MrGovinda Shrestha(LamjungDCS)

COMPANY REPRESENTATIVES:
1.Munna Shakya
2.DhirajSigdel
3.SudipKhanal

VOITH	SOLU KHOLA DUDH KOSHI (3x28.67 MW+5%COL)	Page No 1 of 4
	PLANT & SYSTEM COMMISSIONING TEST REPORT	Date:10/02/2023
UNIT-1	Synchronization of the Unit	

Specification of Equipments:

Turbine:

Type of turbine.	Vertical Pelton
No. of Jets	6
Net Head (Mtr)	598.09

Synchronous Generator:

Rated terminal voltage (KV)	11
Rated MVA and MW (Major)	34.8MVA & 28.67MW
Inertia consant (HW sec / MVA) H	1.15
Reactive power capability curve. (Major)	Attached
Additional capacity (MW) obtainable from Generating Units in excess of Net Declared Capability	36.54MVA
Direct axis synchronous reactance (% on MVA) Xd.	1.802
Direct axis transient reactance (% on MVA) X'd.	0.335
Direct axis sub-transient reactance (% on MVA) X"d.	0.304
Quadrature axis synchronous reactance (% on MVA) Xq.	0.999
Quadrature axis sub-transient reactance (% on MVA) Xq.	0.296
Direct axis transient open circuit time constant (sec) T'd0.	7.81
Direct axis sub-transient open circuit time constant (sec) T"do.	NA
Stator Resistance (in Ohm) Ra.	9.79 m Ohm
Short circuit and Open circuit saturation characteristics curve of the generator for various terminal voltages.	Attached

Generator Transformer:

Type of Transformer	3 Phase Transformer
Power Rating	35.5MVA
Voltage Rating	132/11kV
Cooling Type	ONAN/ONAF
Vector Group	YNd11

132kV Switchyard:

Voltage Level	132kV
Type of Switchyard	AIS
No. of Generator Incomer Bays	03 Bays
No. of Outgoing bays	02 Bays
Type of Circuit Breaker Used for Outgoing Line	SF6, Gang Operated, 145kV, 3150A, 40kA/3s
Type of Circuit Breaker Used for Outgoing GT Bay	SF6, Gang Operated, 170kV, 3150A, 40kA/3s
Type of Isolators for GT Bays	145kV, 1250A, 31.5kA/3s, 3Ph, double brake with ES

VOITH HYDRO PVT LTD	SAHAS URJA LTD
Name: LINGESH POOVALINGAM	Name: Siddish Lal Maskey
Signature:	Signature:
Date: 10/02/2023	Date: 10/02/2023

VOITH	SOLU KHOLA DUDH KOSHI (3x28.67 MW+5%COL)	Page No 1 of 4
	PLANT & SYSTEM COMMISSIONING TEST REPORT	Date:11/02/2023
UNIT-2	Synchronization of the Unit	

Specification of Equipments:

Turbine:

Type of turbine.	Vertical Pelton
No. of jets	6
Net Head (Mtr)	598.09

Synchronous Generator:

Rated terminal voltage (KV)	11
Rated MVA and MW (Major)	34.8MVA & 28.67MW
Inertia constant (MW sec / MVA) H	1.15
Reactive power capability curve. (Major)	Attached
Additional capacity (MW) obtainable from Generating Units in excess of Net Declared Capability	36.54MVA
Direct axis synchronous reactance (% on MVA) Xd.	1.802
Direct axis transient reactance (% on MVA) X'd.	0.335
Direct axis sub-transient reactance (% on MVA) X"d.	0.304
Quadrature axis synchronous reactance (% on MVA) Xq.	0.999
Quadrature axis sub-transient reactance (% on MVA) Xq.	0.296
Direct axis transient open circuit time constant (sec) T'd0.	7.81
Direct axis sub-transient open circuit time constant (sec) T"do.	NA
Stator Resistance (m Ohm) Ra.	9.79 m Ohm
Short circuit and Open circuit saturation characteristics curve of the generator for various terminal voltages.	Attached

Generator Transformer:

Type of Transformer	3 Phase Transformer
Power Rating	35.5MVA
Voltage Rating	132/11kV
Cooling Type	ONAN/ONAF
Vector Group	YNd11

132kV Switchyard:

Voltage Level	132kV
Type of Switchyard	AIS
No. of Generator Incomer Bays	03 Bays
No. of Outgoing bays	02 Bays
Type of Circuit Breaker Used for Outgoing Line	SF6, Gang Operated, 145kV, 3150A, 40kA/3s
Type of Circuit Breaker Used for Outgoing GT Bay	SF6, Gang Operated, 170kV, 3150A, 40kA/3s
Type of Isolators for GT Bays	145kV, 1250A, 31.5kA/3s, 3Ph, double brake with ES

VOITH HYDRO PVT LTD	SAHAS URJA LTD
Name: LINGESH POOVALINGAM	Name: Sudiah Lal Maskey
Signature:	Signature:
Date: 11/02/2023	Date: 11/02/2023

VOITH	SOLU KHOLA DUDH KOSHI (3x28.67 MW+5%COL)	Page No 1 of 4
	PLANT & SYSTEM COMMISSIONING TEST REPORT	Date:12/02/2023
UNIT-3	Synchronization of the Unit	

Specification of Equipments:

Turbine:

Type of turbine.	Vertical Pelton
No. of jets	6
Net Head (Mtr)	598.09

Synchronous Generator:

Rated terminal voltage (KV)	11
Rated MVA and MW (Major)	34.8MVA & 28.67MW
Inertia constant (MW sec / MVA) H	1.15
Reactive power capability curve. (Major)	Attached
Additional capacity (MW) obtainable from Generating Units in excess of Net Declared Capability	36.54MVA
Direct axis synchronous reactance (% on MVA) Xd.	1.802
Direct axis transient reactance (% on MVA) X'd.	0.335
Direct axis sub-transient reactance (% on MVA) X"d.	0.304
Quadrature axis synchronous reactance (% on MVA) Xq.	0.999
Quadrature axis sub-transient reactance (% on MVA) Xq.	0.296
Direct axis transient open circuit time constant (sec) T'd0.	7.81
Direct axis sub-transient open circuit time constant (sec) T"do.	NA
Stator Resistance (m Ohm) Ra.	9.79 m Ohm
Short circuit and Open circuit saturation characteristics curve of the generator for various terminal voltages.	Attached

Generator Transformer:

Type of Transformer	3 Phase Transformer
Power Rating	35.5MVA
Voltage Rating	132/11kV
Cooling Type	ONAN/ONAF
Vector Group	YNd11

132kV Switchyard:

Voltage Level	132kV
Type of Switchyard	AIS
No. of Generator Incomer Bays	03 Bays
No. of Outgoing bays	02 Bays
Type of Circuit Breaker Used for Outgoing Line	SF6, Gang Operated, 145kV, 3150A, 40kA/3s
Type of Circuit Breaker Used for Outgoing GT Bay	SF6, Gang Operated, 170kV, 3150A, 40kA/3s
Type of Isolators for GT Bays	145kV, 1250A, 31.5kA/3s, 3Ph, double brake with ES

VOITH HYDRO PVT LTD	SAHAS URJA LTD
Name: LINGESH POOVALINGAM	Name: Sudiah Lal Maskey
Signature:	Signature:
Date: 10/02/2023	Date: 10/02/2023

VOITH	SOLU KHOLA DUDH KOSHI (3x28.67 MW+5%COL)	Page No 1 of 4
	PLANT & SYSTEM COMMISSIONING TEST REPORT	Date:12/02/2023
UNIT-3	Synchronization of the Unit	

Specification of Equipments:

Turbine:

Type of turbine.	Vertical Pelton
No. of jets	6
Net Head (Mtr)	598.09

Synchronous Generator:

Rated terminal voltage (KV)	11
Rated MVA and MW (Major)	34.8MVA & 28.67MW
Inertia constant (MW sec / MVA) H	1.15
Reactive power capability curve. (Major)	Attached
Additional capacity (MW) obtainable from Generating Units in excess of Net Declared Capability	36.54MVA
Direct axis synchronous reactance (% on MVA) Xd.	1.802
Direct axis transient reactance (% on MVA) X'd.	0.335
Direct axis sub-transient reactance (% on MVA) X"d.	0.304
Quadrature axis synchronous reactance (% on MVA) Xq.	0.999
Quadrature axis sub-transient reactance (% on MVA) Xq.	0.296
Direct axis transient open circuit time constant (sec) T'd0.	7.81
Direct axis sub-transient open circuit time constant (sec) T"do.	NA
Stator Resistance (m Ohm) Ra.	9.79 m Ohm
Short circuit and Open circuit saturation characteristics curve of the generator for various terminal voltages.	Attached

Generator Transformer:

Type of Transformer	3 Phase Transformer
Power Rating	35.5MVA
Voltage Rating	132/11kV
Cooling Type	ONAN/ONAF
Vector Group	YNd11

132kV Switchyard:

Voltage Level	132kV
Type of Switchyard	AIS
No. of Generator Incomer Bays	03 Bays
No. of Outgoing bays	02 Bays
Type of Circuit Breaker Used for Outgoing Line	SF6, Gang Operated, 145kV, 3150A, 40kA/3s
Type of Circuit Breaker Used for Outgoing GT Bay	SF6, Gang Operated, 170kV, 3150A, 40kA/3s
Type of Isolators for GT Bays	145kV, 1250A, 31.5kA/3s, 3Ph, double brake with ES

VOITH HYDRO PVT LTD	SAHAS URJA LTD
Name: LINGESH POOVALINGAM	Name: Sudiah Lal Maskey
Signature:	Signature:
Date: 10/02/2023	Date: 10/02/2023

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AMETEK
POWER INSTRUMENTS
255 North Union Street, Rochester, NY 14605 U.S.A.
Telephone: 585-263-7700 Fax: 585-262-4777

CERTIFICATE OF CALIBRATION

S.O. Number: 11004779-9
Customer Name: A & A ENGINEERING AND SERVICE
P.O. Number: 20210612
Model Number: JSII-09A5002-2A
Serial Number: 21 50 05414

This is to certify that the above referenced equipment has been calibrated using standards whose accuracies are traceable to the National Institute of Standards and Technology (NIST), within the limits of the Bureau calibration services. Actual records pertaining to these standards are on file and are available for examination.

Certified By: AMETEK POWER INSTRUMENTS

Calibrated By: ROBERT F. PUTNAM
Date: 12/10/2021
Title: MANUFACTURING TECHNICIAN
Next Calibration due on: date: 12/10/2022

F638
2/5/20

ISO-9001
CERTIFIED

नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

प्रशासन निर्देशालय

ग्रिड सञ्चालन विभाग

पत्र संख्या : २०७९/८०/ग्रि.स.वि./च.नं.६८९ मिति: २०७९/१०/०९

श्री विद्युत व्यापार विभाग,
दरबारमार्ग, ने.वि.प्रा. ।

विषयः ईनर्जी मिटर सम्बन्धमा

उपरोक्त सम्बन्धमा त्यहांको मिति २०७९/१०/०३ पत्र संख्या ने.वि.प्रा. ०७९/८० वि. व्या. वि. च.नं. ७३६ को पत्र मार्फत साहस उर्जा लिमिटेडको इनर्जी मिटर सम्बन्धी व्यहोरा अवगत भयो। साहस उर्जा लिमिटेड द्वारा संचालित सोलुखोला (दुधकोशी) ज.वि.आ.को लागि JEMSTAR II कम्पनीको ईनर्जी मिटरहरु Programming गरिदिन अनुरोध भई आएकोमा त्यहांबाट उपलब्ध गराइएको विवरण अनुसार उक्त मिटरहरु Program गरिएको व्यहोरा अनुरोध छ। साथै, उक्त मिटरहरुको Accuracy Test Report यसै साथ संलग्न गरी आवश्यक कारवाही को लागि पठाईएको व्यहोरा अनुरोध छ।

Programmaing विवरण

CT Ratio	550:1A
PT Ratio	132000/√3: 110/√3V

MWh Display: Total 8 digits(XXXXXX.XX)
Meter reading after Programming

Description	Main Meter	Check Meter
Serial No.	220305549	220305550
MWH Delivered	000000.00	000000.00
MWH Received	000000.00	000000.00
MVARH Delivered	000000.00	000000.00
MVARH Received	000000.00	000000.00
Meter Multiplying factor	1	1

Programmaing विवरण

CT Ratio	550:1A
PT Ratio	132000/√3: 110/√3V

MWh Display: Total 8 digits(XXXXXX.XX)
Meter reading after Programming

Description	Main Meter	Check Meter
Serial No.	220305547	220305548
MWH Delivered	000000.00	000000.00
MWH Received	000000.00	000000.00
MVARH Delivered	000000.00	000000.00
MVARH Received	000000.00	000000.00
Meter Multiplying factor	1	1

(लुनार श्रेष्ठ)
प्रबन्धक

बोधार्थ:
श्री साहस उर्जा लिमिटेड

मीनभवन, नयाँ बानेश्वर, काठमाण्डौं
फोन नं.: ४६२०५८६, ४६२२४४७, ४६२०६१९ फ्याक्स: ४६२०५८६E-mail: gridoperation@nea.org.np

Energy Meter Commissioning Report

(This form shall be filled for all existing meters, new meter installations and all replacements)

Description: In reference to the minutes of meeting dated on 2075.05.12 that was held between NEA and Himalayan Power Partner Ltd. regarding Energy Meter installation for recording the energy generated by Dordi Khola Hydropower Plant, the metering unit, namely MU Meter (Main and Check for recording generation of Generating Unit 1) at Dordi Khola Hydropower switchyard with the following details has been installed

(Please fill in the form completely)

1. Name of the Power Project: Dordi Khola Hydropower Project Capacity:27 MW
2. Name of Company: Himalayan Power Partner Ltd
3. Location of Metering Point: i) District: Lamjung ii) Municipality / VDC:Besisahar iii) Ward No: 11 iv) Tole / Village: Ramchowk
4. Metering Point: i) Voltage Level: 132 KV ii) Line/Feeder's Name: Mid-Marsyangdi 132kV Line Bay iii) Transformer Identification:
5. Metering Unit:

i) Current Transformer: Ratio: 200/1-1-1-1-1 Present Connected Ratio: 200/1A. Burden: 30 VA each
Type: Outdoor Oil Immersed Accuracy Class : 0.2
Make (Manufacturer, Country, Year of Manufacture etc.): Mehru Electrical and Mechanical Engineers (P). Ltd., India, 2017
Maker's Serial No. R:OC7367/1/1/17; Y : OC7367/1/2/17; B: OC7367/1/3/17

ii) Voltage Transformer: Ratio:132/√3/0.11/√3-0.11/√3-0.11/√3-0.11 Present connected Ratio132/√3/0.11/√3
Burden: 30 VA, 20 VA Type: TCVT 145 Accuracy: 0.2.
Make: Siemens, Germany, 2020
Maker's Serial No. R:1CV3624; Y : 1CV3622; B: 1CV3623

iii) Energy Meter: Calibrated Ratios: CT: 200/1 PT: 132000/√3:110/√3
Multiplying Factor: 1 Type: 3 Phase, 4 wire
Accuracy Class: 0.1 Make: AMETEK POWER INSTRUMENTS
Maker's Serial NO: Main Meter- 215005414; Check Meter: -215005413

iv) Overall multiplying factor with Calculation:

6. Meter Sealing:
   - i) Test Seal (Yes/No) [ ] Seal No.Main:- Check:-
   - ii) Terminal Seal (Yes/No) [yes] Seal No:Main:- DFD125 Check:- DFD125
   - iii) Cover Seal (Yes/No) [yes] Seal No: Main:- DFD125 Check:- DFD125
   - iv) Box Seal (Yes/No) [ ] Seal No. Main:- Check:-
7. Initial Meter Reading: a. Main Meter : (MWH) export 0.00 Import :-0.00
   b. Check Meter: (MWH) export 0.00 Import:-0.00
8. Meter Installed and Sealed By:

For Company:	For NEA:
Name: Sudip Khanal	Name: Govinda Shrestha
Designation: Overseer	Designation: Electrical Helper
Signature:	Signature:
Date: 2079-05-12	Date: 2079-05-12

9. i) Metering Code for this Meter: ii) Metering Code for Old Meter:
10. Type of Installation: New: Yes Replacement:
11. Reason for Replacement:
12. Meter Owned by: Dordi Hydropower Project
13. Main or Check Meter: **BOTH METER**
14. Remarks (if any): **SI of CTs are grounded.**

Company Representatives:	NEA Representatives:
1. Munna Shakaya, Project Manager	1. Susovit Dwa, Engineer, Pokhara Grid Branch
2. Dhiraj Sigdel, Engineer	2. Shiva Kunwar, Engineer, MC 220KV TLP
3. Sudip Khanal, Overseer	3. Govinda Shrestha, Lamjung DCS