ICIMOD

TERMS OF REFERENCE (ToR)

Consultancy services for the development of solar thermal standards for Nepal

About ICIMOD

The Hindu Kush Himalaya (HKH) region stretches 3,500km across Asia, spanning eight countries – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Encompassing high-altitude mountain ranges, mid-hills, and plains, the zone is vital for the food, water, and energy security of up to two billion people and is a habitat for countless irreplaceable species. It is also acutely fragile – and frontline to the impacts of the triple planetary crisis of climate change, pollution, and biodiversity loss.

The International Centre for Integrated Mountain Development (ICIMOD), based in Kathmandu, Nepal, is an international organisation established in 1983, that is working to make this critical region greener, more inclusive and climate resilient. For more information, read our Strategy 2030 and explore our website.

Background

Nepal, with its abundant solar resources and growing energy demand, stands at a crucial juncture in its energy transition journey. As the country strives to enhance energy security, mitigate climate change impacts, and promote sustainable development, the harnessing of solar energy, particularly through solar thermal technologies, has emerged as a promising solution to meet diverse energy needs across sectors such as heating, cooling, and industrial processes.

Recognising the transformative potential of solar thermal technologies, ICIMOD, in collaboration with the Alternative Energy Promotion (AEPC), the Government of Nepal, has developed a comprehensive solar thermal roadmap and implementation plan for Nepal. The primary objective of this roadmap is to accelerate the implementation of solar thermal technology in Nepal for residential, commercial, and industrial uses. The roadmap aims to support Nepal's sustainable development and climate resilience objectives by setting clear targets and defining actionable steps to promote solar thermal technology, enhance energy efficiency, reduce greenhouse gas emissions, and improve energy access.

Over 100 international standards for renewable energy technologies have been developed by the International Electrotechnical Commission (IEC) and the International Organisation for Standardisation (ISO). Standards for Solar Heating Collectors, primarily developed by ISO, define test methods for components and systems, and are often complemented by region-specific standards.

In many developing countries, including Nepal, quality assurance for solar thermal products remains limited, leaving markets vulnerable to low-quality imports. Ensuring quality across the supply chain is increasingly important due to the growing number of global component suppliers. To address this, ICIMOD, in collaboration with AEPC, aims to develop solar thermal standards tailored for Nepal.

Objectives

In the recent NDC 3.0 Nepal published by the Government of Nepal, solar thermal targets have been included based on the solar thermal roadmap and implementation plan. In continuation of solar thermal work, and in line with one of the focus areas of ICIMOD's Energy Intervention—building the capability of institutions to integrate ICIMOD inputs into plans/processes. In this context, ICIMOD intends to develop a solar thermal standard for Nepal, along with the AEPC.

ICIMOD is seeking a consultancy service for the development of solar thermal standards for Nepal. The assignment also includes guidelines for the development of a set of standards for essential system components adapted from international standards. Quality requirements and standards for imported solar thermal products and locally manufactured solar thermal products.

Scope of the work

The scope of the work includes, but is not limited to, the following:

- The contractor will undertake an assessment of solar thermal standards for Nepal. This work will be based on the well-established quality infrastructure on an international level. The assignment includes the evaluation of existing legislation, standards, capacities, and certification schemes on international and needs on national. The analysis includes a conformity check of existing standards and certifications in Nepal with established international ones and best practices from other regions. It provides key recommendations for the introduction of solar thermal standards and quality criteria in Nepal.
- The contractor will undertake a review of the nationally existing standards and infrastructure, and certifications in Nepal, and describe the need for solar thermal standards in Nepal. The analysis includes a conformity check of existing standards and certifications with those established in Nepal.
- Based on the findings and in line with international practice, the contractor will develop a document with guidelines on solar thermal standards for Nepal, which will further guide the work of Nepal on solar thermal energy over the next years. The framework will include concrete recommendations for actions, improvement of capacities and processes, as well as SHC standards suitable to be adopted at the national level. Moreover, based on the capacity analysis, it will make recommendations for solar heating and cooling (SHC) testing and certification services at the national level. The frameworks will include clear recommendations for a timeline for developing and implementing quality requirements for solar thermal systems in Nepal.
- The contractor will develop a set of minimum standards and quality requirements for solar thermal energy system components and services. This also includes the

standards and quality requirements for both imported solar thermal products and locally manufactured solar thermal products, with short-term, medium-term, and long-term requirements.

- The contractor will undertake a stakeholder consultations workshop, and a validation workshop with the key stakeholders in the sector in Nepal, including the government, the private sector, civil society organisations, academics, and associations.
- The contractor will organise the first stakeholder workshop to survey the existing regulations, standards, quality criteria and testing possibilities for solar thermal systems in Nepal and to coordinate future requirements regarding quality improvement and standards with the stakeholders.
- The contractor will organise the second validation workshop to validate the developed standards, quality requirements, and other findings with the larger stakeholders working on solar thermal in Nepal. This workshop is carried out after a draft version of the "standards document" is available.

Report outlines and Deliverables

The contents of the report for solar thermal systems standards are listed below.

1. Introduction
2. Solar Thermal Markets
    a. Worldwide
    b. Nepal
3. International Solar Thermal Standards
4. Certification Schemes for Solar Heating and Cooling Products and Systems
        i. Self-certification
        ii. Third-party certification
    b. Solar Keymark[1]
    c. SHAMCI certification scheme[2]
    d. Recommendations for the adoption of a certification scheme for Nepal
5. The Global Solar Certification Network
6. Recommendations for the introduction of solar thermal standards and quality criteria in Nepal
    a. Quality Requirements and Standards for Imported Solar Thermal Products.
    b. Quality Requirements and Standards for Locally Manufactured Solar Thermal Products
        i. Short-term requirements
        ii. Medium- and long-term requirements

[1] The Solar Keymark is a voluntary third-party certification mark for solar thermal products

[2] The Solar Heating Arab Mark and Certification Initiative (SHAMCI) is the first quality certification scheme for the solar thermal products and services in the Arab region and developing countries

7. Recommendations for a timeline for developing and implementing quality infrastructure for solar thermal systems
8. Appendix
    a. Basic test stands for the collector and system testing
    b. Maintenance and Inspection Requirements

The deliverables include

- Inception report
- Report: Solar thermal standards
- Comprehensive literature list
- Links to the most important international solar thermal standards
- Link to folder with high-resolution jpeg files of all photos/images used in the document
- Information on the most relevant solar thermal test institutions and certification of the Global Certification Network

Team

The proposed resources must be part of the project team for the time period specified. The additional resources will be included in the technical proposal with roles, responsibilities, and expertise.

Position	Qualification and expertise	Roles and responsibilities
Team Leader	- Overall project management, coordination, and oversight of activities. - Liaison with ICIMOD, the energy nodal agency of Nepal, and other key stakeholders. - Ensuring timely delivery of outputs and adherence to project timelines. - Provide strategic guidance and lead the project.	- More than 20 years of experience in solar thermal projects with a background in mechanical. - Extensive experience in project management/coordination in solar thermal projects. - Conducted at least 10 solar thermal energy projects across various regions and conducted at least 5 solar thermal roadmap studies - Strong leadership and communication skills
Researcher	- Data collection - Conduct stakeholder consultations and workshops	- Background in renewable energy engineering, with an experience 7 years of experience - Experience in conducting stakeholder consultations and workshops

Timeline and deliverables

The contract period is for five months from the date of signing. The milestone of the contract is given below. The presentation of the wider dissemination of the solar thermal standards will be planned for next year.

Deliverables	Timeline	Payment
Inception report with detailed plan and deliverables	1 week from the contract	30%
Draft solar thermal standards	10 weeks from the contract	50%
Final Solar Thermal Standards for Nepal	20 weeks from the contract	30%

Proposal

Technical proposal

Applicants must include the following sections in the technical proposal:

1. Technical approach and methodology:

In this section, applicants should explain their understanding of the objectives of the assignment, approach to the services, and methodology to obtain the expected output.

2. Work plan

Applicants should propose the main activities of the proposal, content and duration, milestones, and delivery date. The proposed work plan should be consistent with the technical approach and methodology.

3. Organisation and experts

Applicants should propose the structure and composition of their team, mentioning their qualifications and skills as requested in the section team. Applicants should list the main discipline of the assignment, the key expert responsible, and the proposed technical and support staff.

4. Relevant past experience

Applicants must include the past experience of their organisation and experts relevant to this request for proposals.

Financial proposal

The bidder should provide the financial quote with the breakdown of all the costs and include the tax in the budget (refer to the table provided below):

- Breakdown of the experts needed, number of days required, quantity, rate
- Breakdown of other costs, unit, quantity, rate

Evaluation

The service provider will be selected based on the highest-ranked technical proposal (60% weightage) and the lowest-cost financial proposal (40% weightage).

The service provider will be selected based on the highest cumulative scores obtained in the technical and financial proposals using the following formula:

- Technical score = Score obtained based on technical proposal (total 100)
- Financial score = Score obtained based on financial proposal (total 100)
- Total score = 60% of technical proposal + 40% of financial proposal

The service provider scoring the maximum score based on the criteria will be awarded.

Duration

The duration of the contract is five months.

Pre-qualification criteria

S. No.	Criteria	Supporting documents
1	The bidder shall be a legally registered institution. (In the case of the Consortium, all members must adhere to the clause)	
2	The bidder should have an average annual turnover of USD 100,000 or more in the last three financial years. (In the case of the Consortium, the lead member must adhere to 60% of the turnover mentioned in the clause)	Audited financial statements for the three years and a tax clearance certificate
3	The bidder should have successfully completed similar solar thermal studies/ projects at least 5 projects for bilateral/international donors, and at least 5 solar thermal technology roadmaps developed in the last 5 years.	Work order along with project details
4	The bidder should not have been blacklisted or barred or any such cases pending for blacklisting/ debarment in any court of law by any State Government, Central Government or any other Public	Self-declaration by the bidder

	Sector Undertaking or Corporation or any other Autonomous organisation of Central or State Government as on the Bid submission date. (In the case of Consortium/subcontracting, all members must adhere to the clause)	

Reporting and supervising

The bidder will report to the Intervention Manager – Renewable Energy. The bidder will also work in close collaboration with the Renewable Energy team, Resilient Economies and Landscapes Action Area, where relevant. The bidder will share updates every two weeks with ICIMOD. The report format must be discussed and approved by ICIMOD in advance.

ICIMOD's core values

Our core values are integrity, neutrality, relevance, inclusiveness, openness, and ambition. These values are an expression of our culture and are central to the guiding beliefs and principles of our work and behaviour. Our core values will lie at the heart of ICIMOD operations and delivery. They will underpin everything we do and frame how we work with our partners. They reflect our founding intentions and the balances we seek to hold, while equipping ourselves for the future.

Ethical consideration

The consultant will be required to take all the necessary actions to handle the collected data responsibly (see ICIMOD Responsible Data Policy) to ensure data privacy, anonymity, and confidentiality. The consultant needs to adhere to the in-country regulations while executing the project.

Our commitment to the prevention of sexual harassment

ICIMOD is committed to prevention and redressal of sexual harassment at the workplace and promoting the welfare of children, young people and adults and expects all staff, consultants, volunteers to share this commitment. We will do everything possible to ensure that only those who are suitable to work within our values are selected to work for us.

Confidentiality/non-disclosure

All material issued in connection with this ToR shall remain the property of ICIMOD and shall be used only for the purpose of this procurement exercise. All information provided shall be either returned to ICIMOD or securely destroyed by unsuccessful applicants at the conclusion of the procurement exercise.

During the performance of the assignment or at any time after expiry or termination of the Agreement, the consultant shall not disclose to any person or otherwise make use of any confidential information which s/he has obtained or may during this agreement relating to partner organisation/ICIMOD, the respondents or otherwise.

The consultant will be required to sign a non-disclosure / confidentiality agreement as part of their undertaking of this work.

Intellectual property, copyright, and ownership of all prepared information

The consultant shall retain all rights to pre-existing (background) intellectual property or materials used by the consultant in the delivery of this study. All arising intellectual property, ideas, materials, processes, or processes formed in contemplation, course of, or as result of this study shall be passed to ICIMOD without restriction.

The consult shall warrant that all arising intellectual property, materials and/or products produced in pursuit of this study shall be original and shall not infringe on any third party's claim. All technical or business information, in whatever medium or format, originated, collated, or prepared by or for the consultant in contemplation, course of, or as result of this assignment shall be transferred to ICIMOD without restriction on completion and shall not be used by the consultant for any other purpose without express written permission of ICIMOD.

Copyright of all arising documents, data, information, or reports produced by the consultant under this agreement shall belong to ICIMOD and will be passed to ICIMOD without restriction. Such documents, data, information, and reports shall not be used by the consultant for any other purpose other than in conjunction with this assignment, without the express written permission of ICIMOD's Head of Programme Funding.

Diversity, equity, inclusion, and safeguarding

ICIMOD's human resource selection process is based on the qualifications and competence of the applicants. As an employer, ICIMOD is committed to promoting diversity, equity, and inclusion, and offers equal opportunities to applicants from all backgrounds and walks of life, including but not limited to gender, age, national origin, religion, race, caste, ethnicity, sexual orientation, disability, or social status. ICIMOD strongly encourages applications from all eligible applicants, especially women, from all parts of the HKH region.

ICIMOD is dedicated to establishing and upholding a safe and nurturing work environment, where all its employees can participate fully and meaningfully without fear of violence, harassment, exploitation, or intimidation. Any type of abuse or harassment, including sexual misconduct [including child abuse], by our staff, representatives, or stakeholders is not condoned or tolerated.

Method of application

The completed proposal should be submitted through email to Consultancy.int@icimod.org by 6 PM (Nepal Standard Time), on 10 June 2025. Two separate files of technical and financial proposals should be submitted.