Terms of reference (ToRs) for the procurement of services below the EU threshold

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Expert Pool for Solar Cooling Technology Development in Indonesia	Project number/ cost centre: 20.2278.8-001.00

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0. List of abbreviations

AG	Commissioning party
AN	Contractor
AVB	General Terms and Conditions of Contract for supplying services and work
FK	Expert
FKT	Expert days
KZFK	Short-term expert
ToRs	Terms of reference

1. Context

The GIZ-implemented **Energy Programme Indonesia/ASEAN** supports the Indonesian Government in a partner-based approach in achieving its targets for a sustainable energy transition. These include realizing 23% renewable energy in the power mix by 2025 and 34% by 2030, achieving Net Zero Emissions by 2060 and mainstreaming low-carbon technologies as part of an overall economic transformation.

As one of the measures under the Energy Programme, the "**Solar Cold Chains for a Green Economy in Indonesia**" (SOCOOL) Project shall create suitable technological and market framework conditions to enable a long-term reduction of CO_2 emissions in Indonesia's cooling sector as part of the energy sector. An industry-based, national approach in partnership with the **Coordinating Ministry for Maritime Affairs and Investment**, **the Ministry of Energy and Mineral Resources** and the **Ministry of Marine Affairs and Fisheries** shall ensure contributions to Indonesia's Vision 2045 and wider economic transformation towards a green economy. Clear contributions towards Indonesia's Nationally Determined Contributions and renewable energy targets shall be made while achieving socio-economic improvements in related sectors of the economy such as the maritime sector with high demands for cold chain expansion and preservation of valuable goods.

The Project is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) with an overall duration of four years (01/2023-12/2026) and has the following overall objective:" Solar cold chains are rolled out in key sectors of the economy as a contribution to climate-friendly green transformation".

Its main outputs are:

1. Government advice and national planning: Instruments for quantitative and qualitative monitoring support the use of solar technologies in cold chains for national planning processes.
2. Alliances and market development: Technology partnerships have developed adapted technical solutions for solar cold chains.
3. Demonstration: Pilot applications with state actors and the private sector have shown technologically and economically viable examples for the dissemination of solar cold chains.

The present tender will contribute mainly to **Outputs 2 and 3** of the SOCOOL Project, which are described below.

Output 2 aims to develop technology partnerships between applied research, manufacturers, operators, and trading partners to promote solar PV implementation for cold chains system. The impact assumption is that the strategic alliances will (further) develop technical solutions for solar cold chains that are adapted to Indonesia's specific conditions (e.g. tropical climate, many decentralized, off-grid locations on islands) and that can be produced by Indonesian manufacturers. A technology partnership between applied research, international technology manufacturers and local producers of refrigeration technology has led to a first prototype for an off-grid system for block ice production (solar ice maker) financed by the partners. This technology partnership has been supported by various German TC energy projects since 2017. Initial evaluations of the prototype prove that medium-sized, commercial refrigeration systems without a grid connection can be realized on the basis of fluctuating renewable energy sources in Indonesia. Through the strategic alliances promoted by the Project, these previous initiatives by the private sector and government agencies will be strengthened and further

developed with the aim of providing adapted key technologies for the nationwide dissemination of solar cooling (Project objective). It is assumed that cooperation between various representatives of applied research, production, operation and trade is possible despite possibly conflicting business interests.

Output 3 promotes pilot applications by state actors and the private sector that demonstrate technologically and economically viable examples of the dissemination of solar cold chains. The impact assumption is that public and private actors use the available best practice for the further scaling up of solar cooling and invest in new solar cooling or solar ice production systems or retrofit existing systems. This will leverage investment funds for solar cold chains, particularly through cooperation with the private sector. The analysis completed in summer 2022 by the University of Indonesia on behalf of the ExploRE project on the potential of solar cold chains in the Indonesian fisheries sector highlighted the importance of concrete examples for raising awareness among state and private actors. According to the study, the central element for achieving this effect is the combination of robust, low-maintenance technology and economically viable business models for the productive use of solar cooling. The pilots supported by SOCOOL are designed according to these principles and thus contribute to the spread of solar cooling (Project objective). It is assumed that sufficiently economically viable business and management models can be identified and that growing international demand for products from emission-free, sustainable cooling chains will have a supporting effect here. It is also assumed that it will be possible to replicate the pilots despite deteriorating framework conditions (budget restrictions, economic crises, price increases, etc.).

The Project closely interacts with other initiatives under the **Energy Programme Indonesia/ASEAN**. Coordination with and support towards these projects is required.

2. Tasks to be Performed by the Contractor

This consultancy is part of SOCOOL's mobilisation of technical advice on the integration of solar energy (Solar Photovoltaic (PV)) into cold chains applications towards government, industry, refrigeration manufacturers, academia, and other relevant project partners. The advisory services under this contract shall be tailored to the Indonesian context and target the improvement of existing cold chain technologies or the development of new, adapted products for lowering CO_2 emissions and expanding cold chain and market access for supply chain actors at lower costs.

Typical cold chain applications are:

- Partially PLN grid-connected cold storages (< 50 tons storage capacity up to -25 °C)
- Grid-connected cold storages (> 50 tons storage capacity up to -25 °C)
- Cold rooms (up to -5 °C or above)
- Ice making machines.
- Ice factories/ storage (e.g. 1 ton/day production capacity and above)
- Small-scale cooling applications

Under the activities under Outputs 2 and 3 (see Chapter 1), the contractor is responsible for providing the below mentioned services. These tasks shall be performed in close coordination with GIZ and one international institute of applied research as well as with Indonesia-based project stakeholders.

The contract also includes general expert advice towards other GIZ-implemented energy projects under the organisational structure of the Energy Transition Cluster (within organizational unit 2A00) / Energy Programme Indonesia/ASEAN.

Work Package 1: Technical Guidance on Solar Cooling Application

This work package encompasses a comprehensive examination of solar cooling technologies, encompassing solar photovoltaic (PV) systems, energy/ power management, electrical and control systems, and energy storage solutions. The objective is to provide in-depth engineering guidance on the integration and optimization of these technologies for effective solar cooling applications.

In addition, this work package aims to provide general technical advice that enables key stakeholders to adopt and integrate Solar PV in their respective strategic investment plans infrastructure, cold chain improvement and expansion. This will be implemented in part jointly with international consultants working for GIZ.

Key cooperation partners in this respect are the government (KKP, ESDM technical departments), industry (e.g. fisheries industry and supply chain actors), national research center or academia, associations, or manufacturers of the refrigeration sector.

Detailed activities under work package 1 will only be agreed between the contractor and GIZ upon start and during the implementation of the contract. This might be under the SOCOOL project or other projects of the Energy Transition Cluster / Energy Programme Indonesia/ASEAN. To provide further details on the actual activities to be requested during the implementation of the project, please find below a list of exemplary activities. This list is neither exhaustive nor can it be guaranteed that all these activities will be implemented.

Activities will be agreed upon start of each sub-activity, including agreement of timelines, deliverables, agreed expert days etc. Below activities are for reference:

- Advice to the SOCOOL Steering Committee and Working Group 2 on standards and technical guidance related to solar cooling applications in Indonesia.
- Technical and economic advice on solar PV power systems, energy / power management, power conversion, energy control and energy storage systems
- Design, layout, tender specifications for Solar PV rooftop systems
- Technical input to work packages and studies of an international consultant – providing knowledge on the Indonesian context.
- Advice on planning and rolling out of solar PV rooftop systems (costing, design, sizing, specifications, maintenance, etc)
- Advice on remote monitoring systems for Solar PV and cold storages
- Evaluation of findings from existing experiences in solar cooling systems and applications
- Advice to the Project on technologies and business models
- Technical support on RE technologies and RE innovation
- Other technical tasks related to energy management, energy efficiency, energy storage and related IT applications.

Work Package 2: Technical Support for Pilot Projects

This work package aims to technically prepare new pilot projects and assist existing pilot projects during operation – safeguarding their functionality. SOCOOL aims to support 5 pilot projects overall. The contractor can expect that technical developments for new improved

designs will be completed by an international consultant. It is the task of the contractor to complement this work with site visits, knowledge of the Indonesian context and engineering know-how.

In general, the transfer of knowledge to future owners / operators should always be considered during the work. Technical concepts should utilize locally, regionally available, or importable commercial components and be compatible with existing technologies. Technical applications such as cold storages or ice makers should be further developed iteratively and using innovative adaptations without restricting their use case or negatively impacting their performance spectrum.

Detailed activities under work package 2 will only be agreed between the contractor and GIZ upon start and during the implementation of the contract. This might be under the SOCOOL project or other projects of the Energy Transition Cluster / Energy Programme Indonesia/ASEAN. To provide further details on the actual activities to be requested during the implementation of the project, please find below a list of exemplary activities. This list is neither exhaustive nor can it be guaranteed that all these activities will be implemented.

Activities will be agreed upon start of each sub-activity, including agreement of timelines, deliverables, agreed expert days etc. Below activities are for reference:

- Technical advice for the design improvement and implementation of new solar cooling pilot projects in Indonesia on solar PV power systems, energy/power management, power conversion, control and automatic system, energy efficiency and energy storage systems
- Optimization and on-going troubleshooting for existing pilot projects (e.g. Solar Ice Maker in Sulamu, NTT Province, and the second Solar Ice Maker in Seram, Maluku Province) to ensure continuous operation.
- Remote assistance towards operators and remote troubleshooting
- Conduct site visits, site inspections/ on-site troubleshooting/ technical improvements and ensuring the commissioning of pilot projects.
- Collaboration with the international consultant in the designing and implementation solar cooling technology application
- Advice on technical specifications, design, and component selection during developing new applications or improving the existing pilot project.
- Develop, modelling, and programing the control systems, including PID controllers, and PLC programming for solar cooling applications.

During the implementation of the work package, particularly in the development of pilot projects and the provision of technical solutions, it is expected to procure certain components/ hardware, and software. Once the exact needs and technical requirements for the equipment have been defined with GIZ, it is possible to utilize the additional budget for the procurement of the following goods: Consumables within the framework of experimental purposes, refrigeration technology hardware, electrical/ sensor component, and relevant software or licenses.

The maximum budget allocated for the procurement both hardware and software is Rp 150.000.000

<u>Requirements:</u>

- The project has the necessary additional budget for the procurement of this type of material goods.
- GIZ issues written authorization for this procurement.

Work Package 3: Training and Knowledge Transfer

Work packages 3 comprises of training and capacity building measures that intend to build knowledge at various levels of intervention, e.g. at macro level (national government), meso level (institutions / organizations such as associations or local government) and micro level (operators, technicians). The consultant is asked to provide input, expertise, provide knowledge products and/or training.

Detailed activities under work package 3 will only be agreed between the contractor and GIZ upon start and during the implementation of the contract. This might be under the SOCOOL project or other projects of the Energy Transition Cluster / Energy Programme Indonesia/ASEAN. To provide further details on the actual activities to be requested during the implementation of the project, please find below a list of exemplary activities. This list is neither exhaustive nor can it be guaranteed that all these activities will be implemented.

Activities will be agreed upon start of each sub-activity, including agreement of timelines, deliverables, agreed expert days etc. Below activities are for reference:

- Provide expert advice and input to government, e.g. on planning processes and government programs related to solar PV.
- Training and capacity building measures with associations or industry members of the refrigeration sector (for example technical training on logic program of solar cooling technology)
- Create or add to knowledge products, e.g. DO's and DON'T's or guidelines on solar cooling applications.
- Develop training modules and deliver technical training for local operators and/or relevant partners at up to 5 pilot site locations.
- Support in building a knowledge platform for institutionalizing knowledge on solar cooling with Indonesian organizations.

Cooperation and Implementation Mode

It is expected that the contractor will work in a close relationship with the project team in GIZ. GIZ will lead the project steering, organization and implementation of activities, political coordination with EBTKE, KKP, CMMAI as well as with other relevant Ministries, their local representations (Dinas, PEMDA, etc.) and private sector partners. Delivery of all activities in any written and verbal form is to be done in English if not specified otherwise.

The core of the assignment is to provide short-term experts, which can be sourced flexibly and on demand by GIZ along the work packages outlined above throughout the timeframe of the contract. The individual mobilization of experts will be agreed separately per activity and coordinated by the GIZ project officer in Indonesia responsible for the commission to BMZ, in close coordination with the Indonesian partners. Work on the ground may be supported or supplemented by other national or international consultants.

While GIZ takes the overall responsibility for the results achieved under SOCOOL as well as for the operational planning of activities, the contractor needs to offer and deploy qualified

experts as demanded and ensure knowledge transfer among individual experts that are part of the work (part of this contract as well as individually hired consultants by GIZ). All experts, outside of the expert team hired under this contract, are expected to work holistically as a team towards the common objectives of SOCOOL.

Reporting

In addition to the reports required by GIZ in accordance with the AVB, the contractor submits the following reports:

- Contributions to reports to GIZ's commissioning party (due in July each year).
- Contributions to steering committee meetings bi-annually and quarterly on the implementation status of the project

Certain milestones, as laid out in the table below, are to be achieved during the contract term, together with GIZ. The following milestones are exemplary and shall support the drafting of the technical concept under the bid:

Milestones/process steps/partial services		Deadline/place/person responsible
Work Package 1: Technical Guidance on Solar Cooling Application		**2024- 2026**
1.1	Briefing	29.03.2024
1.2	Present the technical standard for solar cold storage and other solar cooling technologies before GIZ and KKP	30.08.2024
1.3	Obtained approval from GIZ and KKP on technical standard for solar PV cold storage and/or other solar cooling applications.	25.10.2024
1.4	Present the new and/or innovative solar cooling technology and its business model before GIZ and KKP	30.06.2025
1.5	Present the concept/ initial roadmap for energy management/ energy audit for fisheries sector to national strategic partners.	30.11.2025
1.6	Obtained approval from GIZ, EBTKE, KKP on roadmap for energy management/ energy audit and/or decarbonization strategies for fisheries sector.	30.06.2026
Work Package 2: Technical Support for Pilot Projects		**2024- 2025**

2.1	Approved commissioning reports for pilot project implementation	31.12.2024
2.2	Approved technical document (pre-feasibility and/or FS on solar cooling technology)	30.08.2025
2.3	Approved report on technical solutions for existing and ongoing pilot projects (in 5 locations)	20.12.2025
Work Package 3: Training and Knowledge Transfer		**2025- 2026**
3.1	Approved DO's and DON'T's or technical guidelines for solar PV cold storage and/or solar cooling applications	20.03.2025
3.2	Approved training module using DO's and DON'T's or guidelines for solar cooling technologies as reference	30.04.2025
3.3	Supporting evidence (attendance list, minimum 5 photos) of each training delivered to local operator in 5 locations and to strategic partners (association)	30.05.2026

Period of assignment: from March 2024 until 31.12.2026

3. Concept

In the tender, the tenderer is required to show *how* the objectives defined in Chapter 2 (Tasks to be performed) are to be achieved, if applicable, under consideration of further method-related requirements (technical-methodological concept). In addition, the tenderer must describe the project management system for service provision.

The technical-methodological concept will be evaluated according to the following scoring system under Point 2.1 of the assessment grid.

Note: The numbers in parentheses correspond to the lines of the technical assessment grid.

Strategy (1.1.; 10 points):

The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1 Context; 1.1.1; 1-5 out of 10 points).

Following this, the bidder presents the expertise, experiences, and references the consultant team possesses in relation to the tasks outlined in Chapter 2 (1.1.2; 1-5 out of 10 points).

Cooperation (1.2; 5 points):

The bidder is required to present the actors relevant for the services for which it is responsible and describe the cooperation with them (1.2.1; 1-5 out of 10 points)

The bidder shall further describe how he/she intends to fulfil the following aspects (1.2.2; 1-5 out of 10 points):

- The core of the technology partnerships under SOCOOL should be the cooperation between international, national, and local partners. This means that the knowledge of the local partners should already be taken into account in the services (e.g. operator trainings) in order to ensure that the concepts are compatible with existing technologies, conditions and processes.

Steering (1.3; 0 points): not relevant

Processes (1.4; 0 points): not relevant

Learning and innovation (1.5; 3 points):

The tenderer is required to describe its contribution to knowledge management for the partner and GIZ and to promote scaling-up effects under learning and innovation in relation to Work Package 3 under Chapter 2.

Project management of the contractor (1.6; 12 points)

The tenderer is required to explain its approach for coordination with the GIZ project. In particular, the project management requirements must be explained in detail.

The tenderer is required to demonstrate that the assigned experts are available for the services outlined throughout the duration of the assignment. A **brief personnel assignment plan** with explanatory notes shall list all the experts proposed in the tender; the plan includes general information on the allocation of personnel to the assignments (duration and expert months per work package).

The bidder is required to describe its backstopping concept. The following services are part of the standard backstopping package, which (like ancillary personnel costs) must be factored into the fee schedules of the staff listed in the tender in accordance with Section 3.3.1 of the GIZ AVB:

- Service-delivery control
- Report writing and quality before submission to GIZ, incl. corrections as needed to ensure high quality.
- Ensuring the flow of information between the tenderer and GIZ
- Assuming personnel responsibility for the contractor’s experts
- Process-oriented steering for implementation of the commission
- Logistical organization: travel, flights, hotels, sending of equipment, etc.
- Timesheet writing and keeping information on used / outstanding days per expert and invoices.
- Mobilisation of experts according to project needs
- Managing adaptations to changing conditions
- Securing the administrative conclusion of the project

Further requirements (1.7)

NA

4. Personnel concept

The tenderer is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 7), the range of tasks involved and the required qualifications.

Team leader and Systems Engineer (2.1)

Tasks of the team leader

- Overall responsibility for ensuring the deliverables in the advisory packages of the contractor (quality and deadlines)
- Supervise and manage project plans based on deliverables, timeline, budgets, resource allocation, and risk management strategies.
- Quality assurance for technical content (design and engineering), guideline (for example technical tender specification) and knowledge product (for example training module)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project.
- Personnel management, identifying the need for short-term assignments within the available budget, as well as planning and steering assignments and supporting short-term experts.
- Ensure regular reporting in accordance with deadlines.

Qualifications of the team leader

- Education/training (2.1.1): Master's degree in energy system/ renewable energy/ sustainable energy
- Language (2.1.2): C1-level language proficiency in English and Bahasa Indonesia
- General professional experience (2.1.3): 10 years of professional experience in the renewable energy sector
- Specific professional experience (2.1.4): 5 years in solar cooling applications
- Leadership/management experience (2.1.5): 3 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): 8 years of experience in projects in Indonesia covering also remote island projects.
- Development cooperation (DC) experience (2.1.7): 5 years of experience in DC projects
- Other (2.1.8): 1 publication in best practices in solar PV installations for remote areas

Expert 1- Solar PV Expert (2.2)

Tasks of expert 1

- Designing and engineering solar PV rooftop systems for cold storage or other cooling technologies
- Developing tender specifications solar PV rooftop systems for cold storage.
- Supervising installation of solar PV system for cooling application.
- Conducting site inspections and commissioning.
- Developing and delivering training material on operational and maintenance of solar PV rooftop systems for cold storage to operators and relevant partners.

Qualifications of expert 1

- Education/training (2.2.1): Bachelor's degree in electrical engineering or solar engineering
- Language (2.2.2): B2-level language proficiency in English and Bahasa Indonesia
- General professional experience (2.2.3): 5 years of experience in solar energy
- Specific professional experience (2.2.4): 3 years in designing and engineering solar PV systems based on Indonesian solar PV regulations.
- Leadership/management experience (2.2.5): n/a
- Regional experience (2.2.6): 5 years' experience in solar PV projects in Indonesia covering also remote island projects.
- Development Cooperation (DC) experience (2.2.7): n/a
- Other (2.2.8): hold solar PV design and installer professional certificate.

Expert 2 - Automation, Control and Monitoring Expert (2.3)

Tasks of expert 2

- Developing, modelling, testing, the control systems, including PID controllers, and PLC programming for solar cooling application.
- Conducting site visits to commissioning and monitor system performance for existing and on-going solar cooling projects (solar PV cold storage, solar ice maker) and improve for both component and software.
- Providing basic training on monitoring system for solar PV cold storage to operators and relevant partners.

Qualifications of expert 2

- Education/training (2.3.1): Bachelor's degree in electrical engineering/ solar engineering/ control or system optimization or a related field
- Language (2.3.2): B2-level language proficiency in English and Bahasa Indonesia
- General professional experience (2.3.3): 5 years' experience in automation system
- Specific professional experience (2.3.4): 3 years' experience designing, developing, and implementing control and automation systems.
- Leadership/management experience (2.3.5): n/a
- Regional experience (2.3.6): n/a
- Development Cooperation (DC) experience (2.3.7): n/a
- Other (2.3.8): Having two references in control system programming for solar PV project.

Expert 3 - Cooling and Refrigeration Systems Expert (2.4)

Tasks of expert 3

- Designing and engineering cooling and refrigeration system and technology applications (including engineering drawing, PID) based on solar PV utilization.
- Conduct thermal and energy modelling to optimize system performance and energy efficiency for both existing and ongoing pilot projects.
- Conduct testing, evaluation, site inspections and commissioning on solar cooling applications.
- Perform monitoring, troubleshooting, repair, and preventive maintenance on cooling and refrigeration system.
- Provide effective of technical advice or solutions on cooling and refrigeration systems when technical problem occurred.
- Developing and delivering training material on cooling and refrigeration based on solar PV systems to operators and relevant partners.

Qualifications of expert 3

- Education/training (2.4.1): Bachelor's degree in mechanical engineering or refrigeration / HVAC engineering
- Language (2.4.2): B2-level language proficiency in English and Bahasa Indonesia
- General professional experience (2.4.3): 5 years' experience in the cooling sector
- Specific professional experience (2.4.4): 3 years' experience in design, engineering, and development of refrigeration systems (including safety, energy efficiency, natural refrigerants)
- Leadership/management experience (2.4.5): n/a
- Regional experience (2.4.6): 5 years' experience in refrigeration projects in Indonesia
- Development Cooperation (DC) experience (2.4.7): n/a
- Other (2.4.8): n/a

Expert 4 - Energy Audit Expert (2.5)

Tasks of expert 4

- Measuring and documenting energy consumption patterns during different operational phases and provide analysis with considering the integration renewable energy and energy efficiency for fisheries sector specific.
- Conducting comprehensive assessments of the fisheries facilities to identify key energy-consuming systems and processes and to improving energy efficiency (carbon footprint assessment).
- Develop energy efficiency or decarbonization roadmap for fisheries sector by utilizing energy modelling software to simulate energy consumption scenarios and identify potential areas for improvement.
- Act as resource person in up to 5 workshops with the objective to increase awareness of SOCOOL's stakeholders, on the importance of energy efficiency in the fisheries sector.

Qualifications of expert 4

- Education/training (2.5.1): Bachelor's degree in energy management, environmental management, or a related field.
- Language (2.5.2): B2-level language proficiency in English and Bahasa Indonesia
- General professional experience (2.5.3): 5 years' experience as auditor ISO 50001 (Energy Audits)
- Specific professional experience (2.5.4): 3 years' experience in conducting energy audits related to cold chain equipment/infrastructure.
- Leadership/management experience (2.5.5): n/a
- Regional experience (2.5.6): 5 years in Indonesia
- Development Cooperation (DC) experience (2.5.7): n/a
- Other (2.5.8): Holds a certification for energy audits.

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Teamwork and collaboration skills
- Initiative
- Problem solving and analytical skills.
- Effective Communication skills

- Socio-cultural skills
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

Short-term expert pool with minimum 2, maximum 3 members: Technical Support (2.6)

(Section 2.6 of the evaluation scheme)

For the technical assessment, an average of the qualifications of all specified members of the expert pool is calculated. Please send a CV for each pool member (see below Chapter 7 Requirements on the format of the bid) for the assessment.

During implementation, the actual number of specialists deployed in the pool may deviate from the number of specialists required in Chapter 4 of the Terms of Reference. For specialists not named in the offer, the equivalence of the qualifications with the qualifications of the expert offered in the offer must be confirmed by the client before deployment.

<u>Tasks of the short-term expert pool</u>
- Support in preparing and managing technical trainings in up to 5 locations of pilot projects for local operator and/or stakeholders/private sectors.
- Assist in the implementation of relevant knowledge transfer events (e.g. FGD, workshops, etc)
- Work closely with technical trainers/ experts, subject matter experts, and other team members to ensure the smooth delivery of training programs.
- Coordinate logistics, including room setup, equipment availability, and materials distribution.
- Manage training schedules, participant registrations, and attendance records.
- Support general administrative tasks of the overall assignment.
- Support logistics, procurement of spare parts, hardware, expendables, etc.

<u>Qualifications of the short-term expert pool</u>
- Education/training (2.6.1): all experts with diploma degree in relevant technical field
- Language (2.6.2): all experts with Bahasa Indonesia fluency
- General professional experience (2.6.3): all experts with 3 years of professional experience in the energy sector
- Specific professional experience (2.6.4): all experts with 3 years of professional experience in delivering technical trainings on mechanical, refrigeration, industrial electrical installations, or solar energy.
- Regional experience (2.6.5): n/a
- Development cooperation (DC) experience (2.6.6): n/a
- Other (2.6.7): n/a

The tenderer must provide a clear overview of all proposed short-term experts and their individual qualifications.

5. Costing requirements

Assignment of personnel and travel expenses

Per-diem and overnight accommodation allowances are reimbursed as a lump sum up to the maximum amounts permissible under tax law for each country as set out in the country table

in the circular from the German Federal Ministry of Finance on travel expense remuneration (downloadable at https://www.bundesfinanzministerium.de).

Accommodation costs which exceed this up to a reasonable amount and the cost of flights and other main forms of transport can be reimbursed against evidence

All business travel must be agreed in advance by the officer responsible for the project.

Sustainability aspects for travel

GIZ would like to reduce greenhouse gas emissions (CO_2 emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, such as selecting the lowest emission booking class (economy) and using means of transport, airlines and flight routes with a higher CO_2 efficiency. For short distances, travel by train (second class) or e-mobility should be the preferred option.

Specification of inputs

Please do not deviate in your offer from below quantity structure required in these ToR (number of expert days, budgets specified in the price sheet). This is part of the competition and serves to determine objectively comparable offers.

We would like to point out that, in principle, only those services commissioned by the client and provided by the contractor will be remunerated. We would also like to point out that the total number of expert days offered may not be called up. The number of expert days corresponds to full working days.

Fee days	Number of experts	Number of days per expert (up to)	Total	Comments
Designation of Team Leader	1	80	80	
Designation of Expert 1	1	120	120	
Designation of Expert 2	1	110	110	
Designation of Expert 3	1	120	120	
Designation of Expert 4	1	50	50	
Designation of Short – term expert pool	3	20	60	
Travel expenses	**Quantity**	**Price**	**Total**	**Comments**
Per-diem allowance in country of assignment	440	Rp 500.000	Rp 220.000.000	Travel to Kupang, Ambon, Seram Barat, Papua , Makasar or Manado (will be determined during the project implementation)

Overnight allowance in country of assignment	320	Rp 1,750,000	Rp 560,000,000	Travel to Kupang, Ambon, Seram Barat, Papua , Makasar or Manado (will be determined during the project implementation)
Transport	**Quantity**	**Price**	**Total**	**Comments**
International flights	**n/a**			
Domestic flights	80	Rp 5,000,000	Rp 400,000,000	Travel to Kupang, Ambon, Seram Barat, Papua , Makasar or Manado (will be determined during the project implementation)
CO_2 compensation for air travel domestic	**n/a**			
Travel expenses (train, car) • Rent Car/Taxi/Boat	80	Rp 800,000	Rp 64,000,000	Travel to Kupang, Ambon, Seram Barat, Papua , Makasar or Manado (will be determined during the project implementation). Including transfer to/from, airport, local transportation etc.
Other costs	**Number**	**Price**	**Total**	**Comments**
Flexible remuneration	**1**	Rp 425,000,000	Rp 425,000,000	This budget is foreseen for flexible remuneration. Please incorporate this budget into the price schedule. Use of the flexible remuneration item requires prior written approval from GIZ.

Workshops	**10**	Rp 3,500,000	Rp 35,000,000	Training for local operators in 5 project locations
Subcontracts	**n/a**			
Procurement of materials and equipment	**1**	Rp 150,000,000	Rp 150,000,000	The budget contains the following costs to procure the required components, expendables, spare parts, etc. during pilot project development and commissioning, *for example sensor, cables, etc*
Local contributions	**n/a**			
Other costs	**n/a**			The budget contains the following costs .

Workshops and training

The contractor implements the following workshops/study trips/training courses:

- Workshop/ technical training for local operator and/or dedicated staff of strategic partners about solar cooling application, with encompasses aspects such as operation, maintenance, and troubleshooting at up to 5 project site locations.

6. Inputs of GIZ or other actors

GIZ and/or other actors are expected to make the following available:

- Logistics for workshops: up to 10 workshops/ technical training
- Overall facilitation with government, private sector, and NGO partners
- General activity steering with SOCOOL project partners

7. Requirements on the format of the tender

The structure of the tender must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) should be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). The tender must be legible (font size 11 or larger) and clearly formulated. It must be drawn up in English (language).

The complete tender must not exceed 7 pages (excluding CVs). If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs. The CVs shall not exceed 4 pages each. They must clearly show the position and job the proposed person held in the reference project and for how long.

Please calculate your financial tender based exactly on the parameters specified in Chapter 5 Quantitative requirements. The contractor is not contractually entitled to use up the days, trips, workshops, or budgets in full. The number of days, trips and workshops and the budgets will be contractually agreed as maximum limits. The specifications for pricing are defined in the price schedule.

8. Option

NA

9. Outsourced processing of personal data

NA

10. Annexes

NA