

## TERMS OF REFERENCE

Invitation to submit technical and financial proposals to develop professional standards and a competency-based curriculum for the profession: “Residential Air Conditioning and Refrigeration Systems Technician – Level 2”

Country: Jordan

June 2025

### Summary

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<b>Post title:</b>	Invitation to submit technical and financial proposals to develop professional standards and a competency-based curriculum for the profession: “Residential Air Conditioning and Refrigeration Systems Technician – Level 2”
<b>Starting date:</b>	Immediately after the selection of the service provider and signing the contract.
<b>Duration:</b>	9 months
<b>Location:</b>	Flexible with required travel to workshop(s)
<b>Project:</b>	Cool Up - Scaling Up Sustainable Cooling in the Middle East
<b>Deadline to send the application</b>	20 <sup>th</sup> of July 2025

### Disclaimer

This document is provided for informational purposes only and does not constitute a binding offer or agreement. Participation in this tender process does not guarantee acceptance or award of any contract. All information provided herein is subject to change without notice. The tendering organization (Guidehouse Germany GmbH) reserves the right to reject any or all proposals, to waive any irregularities or informalities, and to negotiate with any qualified supplier. By participating in this tender process, all participants agree to abide by the terms and conditions outlined in this document and any subsequent communications.

# 1. Background information

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The planet is heating up. Climate change is already causing longer hot periods and higher extreme temperatures across the Middle East and North Africa (MENA) region. The region is currently warming at double the global average and predicted to be 4° Celsius warmer by mid-century. Such extreme temperatures will result in increased demand for air conditioning and refrigeration, creating increased demand for electricity and refrigerants with high global warming potential. Without further policy and financial interventions, direct and indirect emissions from cooling and refrigeration may rise 90% above 2017 levels by 2050, creating a vicious feedback loop.

To reduce cooling demand and tackle its adverse impacts on the ozone layer and climate, accelerated technological change is essential. Sustainable cooling solutions exist and are available, though need financing to be brought to scale as financing mechanisms for cooling are rare and not widely implemented.

## 2. The Cool Up programme

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The Cool Up programme promotes accelerated technological change in cooling demand reduction and early implementation of the Kigali Amendment and Paris Agreement in Egypt, Jordan, Lebanon, and Türkiye. The approach is based on four pillars: Reducing cooling demand; Supporting the phase-down of hydrofluorocarbons (HFCs); Replacing and safely disposing of inefficient cooling appliances and refrigerants; Improving cooling appliance operation, training, and awareness. Long-term effects will be ensured by clear programme governance and strong participation of the local partners in each country.

Cool Up's scope covers sustainable cooling systems, including stationary air-conditioning and commercial refrigeration focus on solutions with natural refrigerants such as hydrocarbons like propane (R290) or isobutane (R600a), carbon dioxide (CO<sub>2</sub>, R-744), ammonia (NH<sub>3</sub>, R-717), water (R-718), air (R-729), and not-in-kind alternatives (solutions not requiring refrigerant-based compression technology). Despite their low global warming potential (GWP), Hydrofluoroolefins (HFOs) and other F-gases with an intermediate GWP (e.g., R32) are excluded from the project scope due to their potential adverse effects on the climate, environment, and human health.

More information available: [www.coolupprogramme.org](http://www.coolupprogramme.org)

Cool Up programme is implemented by the National Energy Research Centre (NERC) among other partners. One of the project's objectives and outcomes is to amend the occupational standards for the air conditioning and refrigeration profession about natural refrigerants, to ensure its sustainability locally. The project also aims to develop a specialized training program in the field of using natural refrigerants in air-conditioning applications, highlighting their environmental impact, and how technicians can handle them. Currently used refrigerants, specifically halogenated refrigerants such as HFCs and HFOs, have a negative impact on the environment and contribute to global warming. Therefore, the world is moving towards replacing these refrigerants with natural refrigerants. Since certain safety precautions have to be considered while handling these refrigerants, it is necessary to raise awareness of how to handle them, as some of these refrigerants are toxic and some are flammable. Furthermore, it is also necessary to raise awareness about the importance of replacing HFCs and HFOs with natural refrigerants. Hence, it was necessary to include these refrigerants, their impact on the environment, and how to deal with them in all air conditioning and refrigeration curricula, because Jordan is moving towards gradually eliminating harmful refrigeration from the environment and replacing them with natural refrigerants. Therefore, there was a need to develop the occupational standards for the air conditioning and refrigeration profession to enable the specialized technician to:

- Learn about the importance of natural refrigerants and the impact of replacing them with other refrigerants on the environment.
- Learn about the types of natural refrigerants, the safety requirements to be considered for each, and where each type is used.
- Learn about the types of systems that use natural refrigerants and the components of these systems.

- Learn about the safety procedures and protective equipment that should be used when handling natural refrigerants.
- Learn how to deal with natural refrigerants in case something bad happens.
- Learn the loading and unloading process for all air conditioning and refrigeration systems that use natural refrigerants to avoid any risks, whether poisoning, combustion, or explosion.
- Learn how to handle these systems during maintenance.
- Learn the procedures for periodic maintenance of systems to avoid any harm.

### 3. The Royal Scientific Society (RSS)

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The Royal Scientific Society (RSS) was established by a royal decree in 1970. It is an institution with extensive experience in applied scientific research, scientific consulting, training, and technical services in Jordan.

The Royal Scientific Society (RSS) is the largest applied research institution, consultancy, and technical support service provider in Jordan and is a regional leader in the fields of science and technology.

The RSS campus includes many specialized departments and centers, including:

**Training Center:** It is considered one of the important centers in the Royal Scientific Society (RSS), playing a vital role in advancing RSS's mission to promote science and knowledge. The center designs and delivers high-quality, professional training programs that reflect the expertise accumulated since the founding of the RSS. Its primary goal is to develop and enhance human resources by equipping individuals with technical and professional skills, thereby improving workforce efficiency across both the public and private sectors at local and regional levels. Training programs are conducted by experts, consultants, and specialized instructors across a wide range of sectors including technical, technological, and administrative fields - such as water, energy, environment, construction, food, laboratory testing, calibration, quality, ICT, financial management, and human resources. Beyond its core training mission, the center also plays a prominent community role by organizing targeted awareness campaigns for local communities as well as for students in schools and universities.

**National Energy Research Centre (NERC):** It is also one of the important centers of with the Royal Scientific Society (RSS), established to conduct research, consultations, development, and training in the fields of new and renewable energy, raise energy use standards in various sectors, and promote the use of renewable energy in Jordan. NERC's primary goal is to ensure energy efficiency requirements are met in relevant sectors (industry, buildings) and support key market players such as energy consumers in reducing overall energy consumption. NERC has also been actively involved in important projects within European Union programs related to the development of new technologies and methods for energy efficiency and knowledge transfer. NERC also conducts technical and economic feasibility studies for external parties, in addition to conducting energy design studies for buildings, energy audits, monitoring and measurement, as well as performance measurements and certifications for buildings and products. NERC has also been heavily involved in developing technical documents related to energy labeling and minimum performance standards and has helped the public and private sectors bridge the gap between them to ensure a smooth transition towards energy labeling and minimum performance standards for household appliances.

## 4. Institutional arrangements

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The Technical Consultancy Service Provider will be assigned to work under supervision of Cool Up Programme Manager and in collaboration with the respective Cool Up Consortium regional and national implementing partners.

## 5. Regional context objectives of the assignment

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As part of the efforts of the Training Centre and the National Energy Research Centre of the Royal Scientific Society, and to achieve the objectives of the COOL UP Programme in launching a training course specialized with residential air conditioning and cooling systems. A training course with solid methodological and scientific foundations, aiming to provide a professional certificate accredited by the Accreditation and Quality Assurance Commission entitled: "Residential Air Conditioning and Refrigeration Systems Technician" Level 2.

In the context of the need for a highly experienced and qualified facilitator to manage and coordinate all aspects related to the professional analysis workshops, the development of the Professional Standards and have it approved and accredited by the Accreditation and Quality Assurance Commission (AQAC), then, develop the curriculum based on the competencies of the above profession, and finally submit the training course to the AQAC for accreditation as a training program. We invite specialized facilitators to submit their comprehensive offers to implement the required work in accordance with what is shown below, noting that the deadline for submitting offers is exactly (4:00 PM) on Thursday (20-07-2025).

## 6. Scope of the Training Course

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### 1. Occupational Standards

Occupational standards define the knowledge, skills, and attitudes required for effective performance in the workplace. They specify what an individual must know and do to effectively perform specific jobs/positions within the context of the workplace. The standards represent agreed-upon best practices in the professional field and consider all necessary legal requirements.

Occupational standards are being developed under the direct supervision of the AQAC and in cooperation with the sectoral skills councils within a unified national methodology that has been approved in agreement with all sectoral skills councils and all stakeholders. The Training Center at the Royal Scientific Society will cooperate with the National Energy Research Centre and COOL UP programme to support the development of this National Professional Standard and its curriculum.

## 2. Methodology for Developing Standards

The methodology for developing occupational standards approved by the Accreditation and Quality Assurance Commission (AQAC) consists of 8 main steps, as follows:



### 2.1. Step 1: Planning

When there is a need to create, develop or update an occupational standard, the AQAC, will form a committee to manage and guide the process of developing such occupational standards.

The need to set a national occupational standard comes from the AQAC, sectoral skills councils, TVET providers, or other relevant organizations such as the United Nations, international agencies and donors.

AQAC may also be requested to update certain occupational standards. It will review this request as part of the monitoring and evaluation process and decide on the need to update these professional standards.

### 2.2. Step 2: Sector Analysis

The AQAC requires relevant sectoral skills councils to ensure the need to develop or update an occupational standard based on relevant sector analysis and prioritization.

### 2.3. Step 3: Occupational Analysis

Using “Developing A Curriculum - DACUM” methodology, high-performing workers can analyze their own job. A committee of at least eight highly experienced current workers is used. Over a two-day period, these skilled workers identify the duties and tasks that comprise their job. Under the guidance of a job analysis facilitator, the team analyzes the job-related tasks using a modified group thinking process that includes the storyboarding technique. The result is a job profile presented in tabular form that describes the job in terms of the specific duties and tasks that competent workers must perform. During the process, tasks are also ranked and categorized based on the following:

- Importance: The basic and/or most important components of the job.
- Most time-consuming: Tasks that consume the majority of an employee's time.
- Training needs of new employees: Tasks that should be included in introductory training programs.

## 2.4. Step Four: (National Occupational Standard) NOS Writing

The Occupational Standards Facilitator, through professional experts and training providers, drafts the Occupational Standards document based on the AQAC approved templates and under the supervision of AQAC and the Sectoral Skills Councils.

## 2.5. Step 5: (National Occupational Standard) NOS Validation

AQAC will ask sectoral skills councils and the private sector to validate the developed occupational standards with a larger number of industry representatives and labor market practitioners. Validation will be conducted based on a pre-defined questionnaire, and the standard will be revised based on the feedback received.

## 2.6. Step 6: (National Occupational Standard) NOS Endorsement

After the verification phase and making amendments (if any), AQAC approves the occupational standard by means of an official letter signed by the AQAC Chairman. The standard is published on the AQAC website to attract training providers to approve the training program and prepare a curriculum consistent with the occupational standard.

## 2.7. Step 7: (National Occupational Standard) NOS Implementation

Once endorsed, the National Occupational Standard (NOS) is disseminated to training providers and relevant stakeholders for integration into their training programs. Implementation involves aligning curricula, teaching methods, and assessment tools with NOS to ensure consistent skill development across institutions. AQAC, in coordination with sectoral councils and training institutions, oversees the implementation process to ensure fidelity to the standard and effective adoption by training providers.

## 2.8. Step 8: Keeping NOS Relevant

To maintain the relevance and quality of the occupational standards, AQAC implements a periodic review mechanism in collaboration with sectoral skills councils and industry stakeholders. Feedback from training providers, labor market data, and technological advancements inform updates to the NOS. Revisions are made as necessary to ensure the standards reflect current industry practices, evolving technologies, and emerging competencies required by the labor market.

# 7. Expected outputs and delivery timeframe

Deliverable		Timeline	Estimated Expert-Days
First: Developing Occupational Standards and Curriculum		Two month	15 Days
Task 01	Develop a plan for standards and curriculum design, incorporating timetables for implementation and delivery, in coordination with the Training Centre and AQAC, aligning with the COOL UP Programme's timeframe.		
Task 02	Linking the occupational standards with the Jordanian Standard Classification of Occupations 2021.		
Task 03	Forming "Occupational Standard Quality Assurance Committee" that includes a member from: AQAC, the relevant sectoral skills council, a training provider, and a representative of the bidding company.		

<b>Task 04</b>	Coordinating with AQAC and communicating with sectoral skills councils, RSS, training providers, and any relevant party, to prepare a list of professional practitioners who will participate in the occupational analysis workshops and develop the standard and curricula.
<b>Task 05</b>	Conducting occupational analysis workshops using the DACUM methodology, at RSS or any suitable place.
<b>Task 06</b>	Conducting a professional analysis verification process with practitioners, skills councils, and any relevant body, and documenting the results of the verification process officially through a task and duty balance process.
<b>Task 07</b>	Preparing the occupational standard in an appropriate manner, according to the methodology and models approved by AQAC, with the participation of professional practitioners, training providers, and any relevant party.
<b>Task 08</b>	Coordination with AQAC to communicate with the Skills Councils and any relevant party to verify the content of the standard and officially document the result.
<b>Task 09</b>	Providing AQAC with the standard document, verification documents, and all workflow documents within the forms and design agreed upon with AQAC, for AQAC to approve the standard and publish it on AQAC website.
<b>Task 10</b>	Commitment to amend any standard or curriculum within one year from the date of issuance of the standard or curriculum and upon the AQAC request.
<b>Second: Developing a Competency-Based Curriculum for the Profession</b>	
	<b>Four months</b>
	<b>20 Days</b>
<b>Task 01</b>	Forming the committee responsible to prepare the curriculum in coordination with RSS and AQAC.
<b>Task 02</b>	Developing a general framework for each curriculum according to the model approved by AQAC.
<b>Task 03</b>	Developing a detailed trainee guide in the form of training modules; including life skills, green skills, digital skills, and people with disabilities.
<b>Task 04</b>	Developing a trainer's guide to assist the trainer in planning for the training, that includes practical exercises.
<b>Task 05</b>	Developing and conducting a mock test based on the curriculum, covering all competencies, containing at least 500 questions for each curriculum, considering the individual differences of trainees.
<b>Total estimated days for task First and Second</b>	
<b>35 days</b>	

## 8. Schedule and Additional Commitments

- The curriculum cannot be developed before the occupational analysis workshop is held and the

occupational standard is prepared and approved by AQAC.

- Submitting the standards and curricula to RSS and AQAC as soon as they are completed.
- The occupational analysis workshops and the development of standards and curricula may be held on weekends; provided that all conditions are met, prior approval from AQAC is granted, and that practitioners of the profession are compensated for those days.
- RSS has the right to invite any trainee in the field of facilitating occupational analysis workshops and developing standards to attend the workshops and work as an assistant to the facilitator, for the purpose of qualifying accredited facilitators by AQAC.
- A personal interview will be conducted with the facilitator before final approval and signing the contract.
- Occupational standards are received after being approved by AQAC in the form of electronic copies (PDF and MS Word), after adding the appropriate design.
- The curricula are received after being approved by AQAC in the format (PDF and MS Word) and four printed copies, after adding the appropriate design for each curriculum and in coordination with RSS according to their approved instructions.

## 9. Schedule and Additional Commitments

Topic	Requirements and conditions
General	<p>Interested Service Provider shall be legally registered and shall demonstrate sufficient capacities to implement the required activity in a satisfactory manner. Clear understanding and solid network and experience in the MENA region are required.</p> <p>It is preferable to have a master's degree in curriculum and teaching methods or any related field.</p>
Experience for the proposed experts	<ul style="list-style-type: none"><li>▪ At least 5 years of experience in the education and vocational training sector.</li><li>▪ Extensive knowledge and experience in developing national occupational standards, with at least 10 occupational standards and curricula prepared.</li><li>▪ It is preferable to have an international certificate in the field of occupational analysis and the development of occupational standards.</li><li>▪ Knowledge in curriculum development includes facilitating workshops using DACUM methodology.</li><li>▪ Previous experience in Jordan is a plus.</li><li>▪ Excellent administrative and organizational skills.</li><li>▪ The ability to meet deadlines and work under pressure.</li><li>▪ Ability to adapt and respond to changes as part of the review and feedback process.</li><li>▪ Strong interpersonal skills and the ability to communicate effectively.</li><li>▪ Actively participate in a team environment, sharing information, collaborating with others, and focusing on impact and results.</li></ul>

Timing and duration	The tasks are expected to start in July 2025 after the contract signature date. The contract will be initially signed for six months with the possibility of extension.
Place of work and travel costs	In the case of ad-hoc or unforeseen travel of experts at the request of the Cool Up programme, travel costs including accommodation and living costs will be borne by Cool Up Programme in conformance with the IKI funding rules. The Service Provider should obtain prior approval for the costs of the travel. The costs will be reimbursed upon the submission of the invoices.
Payments	The invoice should be sent after written approval of deliverables by Guidehouse team. Payments will be made within 90 days upon receipt of the invoice. The Service Provider shall submit an invoice indicating activities, costs, and corresponding expert-days.
Contractual arrangements	Upon the successful selection of the Service Provider, the contract to provide the services mentioned in this TOR will be signed with Guidehouse Germany GmbH as the implementing organization of Cool Up programme.
Taxes	The Service Provider is completely responsible for all taxation.
How to apply proposal submission	<p>Interested Service Providers must send their applications to <b>coolup@guidehouse.com</b> with the title: Developing Occupational Standards and Curriculum for the Profession of Residential Air Conditioning and Refrigeration Systems Technician – Level 2 before 4pm on the 20th of July 2025.</p> <p>The following documents must be submitted to be considered for the assignment:</p> <ul style="list-style-type: none"> <li>▪ Proof of legal registration of the Service Provider.</li> <li>▪ Technical proposal: <ul style="list-style-type: none"> <li>• Occupational analysis (DACUM) for one occupation.</li> <li>• One Occupational Standard, according to AQAC approved model, including all attachments.</li> <li>• One general framework for a curriculum, according to AQAC approved model.</li> <li>• One detailed trainee guide in the form of training modules, including life skills, green skills, and digital skills.</li> <li>• One trainer's guide to help the trainer in planning for the training, and that includes practical exercises.</li> <li>• One curriculum-based mock test covering all competencies, containing at least 500 questions for each curriculum.</li> <li>• List of all participants including contact information in hard copy and electronic copy (Excel).</li> </ul> </li> <li>▪ Financial proposal: <ul style="list-style-type: none"> <li>• The expected costs to be paid in Euro, including details of expert daily fees.</li> </ul> </li> </ul>

Evaluation criteria	<p>The Service Provider who applies to this TOR, will be evaluated based on the following aspects:</p> <ul style="list-style-type: none"> <li>▪ Offers are submitted in the form of two separate offers (technical + financial):</li> <li>▪ Financial evaluation (30%)</li> <li>▪ Technical evaluation (70%) according to the following weights, noting that the minimum technical passing mark is (50%): <ul style="list-style-type: none"> <li>• Submitting a concept and planning for developing standards within a specific timeframe for implementation and delivery. (20 marks)</li> <li>• Appointing occupational analysis facilitators and developing occupational standards with at least 5 years of experience. (30 marks)</li> <li>• The occupational facilitator must have an international certificate in the field of occupational analysis and standards, and knowledge in developing curricula using DACUM methodology. (10 marks)</li> <li>• The facilitator must have a master's degree in curriculum and teaching methods or any related field. (10 marks)</li> <li>• Curriculum expert with at least 5 years of experience. (10 marks)</li> <li>• Previous experience in Jordan. (10 marks)</li> <li>• The company's experience in the vocational and technical training and education sector is not less than 8 years. (10 marks)</li> </ul> </li> </ul>
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For further information, please reach out to: [coolup@guidehouse.com](mailto:coolup@guidehouse.com)

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