



## Terms of Reference (TOR)

### Upgrading of Renk Surface Water Treatment (SWAT) System to Solarization

#### Background Information

South Sudan Red Cross (SSRC), with funding from the Netherlands Red Cross, established a Surface Water Treatment (SWAT) system in Renk at Hai Neem Block in Northern Renk Payam. This initiative aims to provide safe drinking water to returnees, refugees, and host communities following the population movement from Sudan to South Sudan due to the civil war that began in April 2023.

#### Project Objectives

The SSRC supported the setup of a SWAT system capable of producing 95,000 liters of raw water which is later coagulated and supplied in 45,000 liters of treated water per day using a diesel-powered generator. Water is currently supplied to host communities and trucked to informal settlements such as Camp Zero and other locations.

To reduce operational costs, enhance environmental sustainability, and increase storage capacity, SSRC is planning to upgrade the current SWAT system by converting it from diesel to solar power.

#### Required Activities

The SSRC invites qualified individuals or companies with proven experience in solarizing water treatment systems to undertake the following activities:

- Conduct an assessment and feasibility study for solarization.
- Prepare a comprehensive layout design for the solar-powered SWAT system.
- Develop a detailed Bill of Materials (BoM) for the solarization SWAT system.

#### Specific Deliverables

The successful candidate is expected to deliver the following:

- Provide a detailed layout design of the solarized SWAT system, including the pipe network, Solar panels and control systems, pumping systems suitable for solar operation among others,
- Present and Submit a comprehensive BoM for the solarization upgrade.

## Scope of Work

Interested and eligible individuals or companies with relevant experience are requested to:

- Site visits to the SWAT system in Renk,
- Carry out system design and drawings,
- Prepare BoQ and technical specifications,
- Prepare presentation on BoQ, design and drawings for final approval & adaptation by SSRC.
- Submission of final technical report with recommendations.

## Purpose

- The primary goal of transitioning to solar power is to reduce dependency on fossil fuels such as diesel,
- thereby minimizing operating costs and lowering greenhouse gas emissions.
- Solar energy will be used to operate pumps that transfer water into the coagulation tank and into the distribution bladder tanks ready for supply to consumers.

## Notes to Applicants

Applicants should consider the following technical details:

- The pumping station is approximately 1 km away from the coagulation tank.
- The delivery pipe used is a 3-inch HDPE PN16.
- The coagulation tank has a capacity of 95 m<sup>3</sup>.
- The suction pipe from the pump to the sieve location is 20 meters.

## Eligibility Criteria

Interested individuals or companies must demonstrate:

- Proven experience in solar system design and installation, particularly for water supply or similar utility systems.
- Technical expertise in Surface water treatment systems.
- Familiarity with the South Sudanese context and Renk particularly is an added advantage.
- Capacity to deliver quality outputs within agreed timelines.

## Submission Requirements

Interested applicants should submit the following:

- Expression of interest outlining relevant experience and approach to the assignment,
- Company or individual profile and CVs of key personnel,
- Examples of similar projects undertaken (references or portfolios),

- Proposed timeline for completing the consultancy,
- Financial proposal including consultancy fees.
- Applications should be sent through [vacancy@ssdredcross.org](mailto:vacancy@ssdredcross.org) by Friday 03<sup>th</sup> October 2025 at the close of business (cob) 5:00 pm South Sudan local time.

### Timeline

- The consultancy is expected to be completed within a period of **two weeks (14 days)** from the date of contract signing. The timeline may be adjusted based on field conditions and mutual agreement.
- The consultancy during the execution of work will work closely with the SSRC Construction coordinator and WASH manager including the operation coordinator based at Renk Unit Office.

