

## Invitation

# Water Purification for Rural Areas

## Workshops at the SafeWaterAfrica Demonstrator Plants

You are kindly invited to two public workshops, one in Mozambique and one in South Africa. On each of them, we will present you the results of the EU funded project “Self-Sustaining Cleaning Technology for Safe Water Supply and Management in Rural African Areas – SafeWaterAfrica”. The workshops will **include visits of the two demonstrator water purification units** that we have set-up during the project.

We look forward to meet you there to discuss with you the exploitation of the project results and to get your feedback for the follow-up activities that we are planning.

You can choose your preferred workshop, or participate at both.

→ **Please register your participation until 2019-10-10** by contacting the hosts mentioned below. They will also help you if you need travel details or accommodation.

## Workshop Mozambique

**Friday, 1<sup>st</sup> November 2019** from **08:00 – 17:00** (including transfer to the demonstrator plant in Ressano Garcia and back)

Meeting point: 8:00 Hotel Matola, Avenue Namaacha, Matola 1114, Mozambique | S 25° 57.910' | E 32° 26.798'

→ Register: Tel. +258 843116573



## Workshop South Africa

**Tuesday, 5<sup>th</sup> November 2019** from **08:00 – 17:00** (including transfer to the demonstrator plant in Waterval and back)

River Meadow Manor, 1 Twin Rivers Estate, 53 Jan Smuts Avenue, Irene, South Africa | S 25° 53 37.4' | E 28 13 66

→ Register: Cindy Maré, Tel: +27 12 4520587, Email: [cindy@acall.co.za](mailto:cindy@acall.co.za)



## The Challenges of Drinking Water Supply

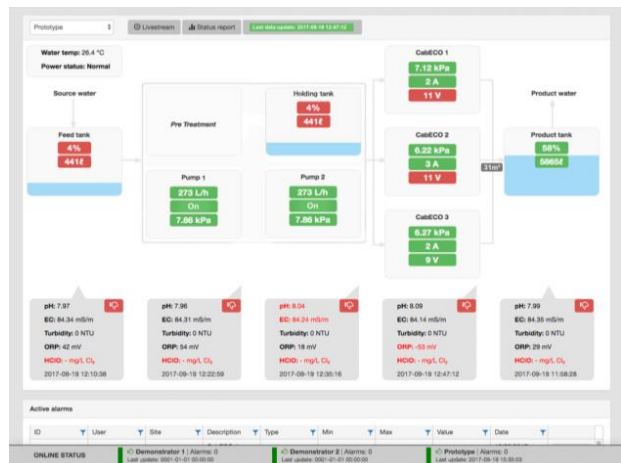
In many places, freshwater resources have been exploited to the full, while surface water quality deteriorated drastically. In many catchments, river water is often of worse quality than the effluent from formal wastewater treatment works it receives. Therefore new supply streams need to be developed, with dedicated treatment processes, regardless of source water quality.

Physical and chemical challenges of water purification is compounded by a skills shortage and know-how in the operation and process control of advanced water purification processes. Without expert supervision and incident management protocols, water quality remains questionable.

## The SafeWaterAfrica technology features

SafeWaterAfrica presents the complete technology package to solve issues of water purification and drinking water supply at remote locations, with the following features:

- A containerised treatment plant that produces potable water that complies with WHO standards
- Solar power supply from photo-voltaic panels with battery pack
- Capacity of between 10 - 100 kilolitres per day, based on 7-8 hours of solar radiation
- Operation and maintenance under expert professional supervision
- Remote water quality monitoring
- Chemical and microbial analysis
- Incident management protocol
- Water Safety Plan implementation

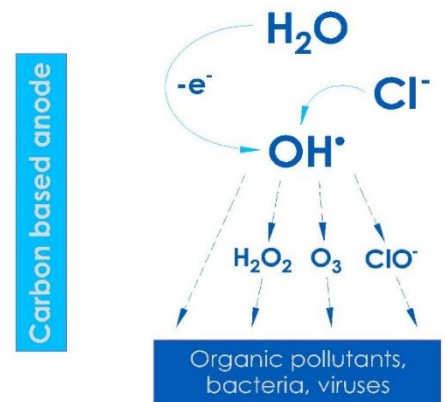
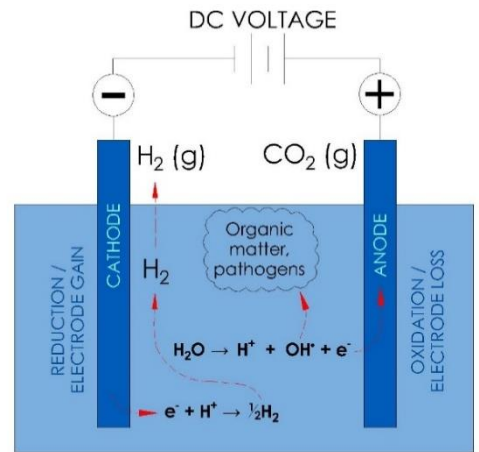


## Project Partners

- Fraunhofer IST (Coordinator) (Germany)
- CONDIAS GmbH (Germany)
- University of Ferrara (Italy)
- University of Castilla La Mancha (Spain)
- Advance Call (Pty) Ltd (AC) (South Africa)
- Virtual Consulting Engineers (Pty) Ltd (South Africa)
- Tshwane University of Technology (South Africa)
- Stellenbosch University (South Africa)
- Council for Scientific and Industrial Research (South Africa)
- Salomon Lda (Mozambique)

## The Purification Process

The process centres around the carbon-based electrochemical oxidation technology (“CabECO”). This technology uses novel metal electrodes coated with a carbon film for efficient electrochemical oxidation of critical substances, via the production of hydroxyl radicals. A key differentiating feature of the technology is the production of ozone directly from water, to kill harmful microbial organisms. CabECO also oxidises chloride, at normal surface water concentrations, to hypochlorous acid, which is a strong residual disinfectant. The CabECO technology, downstream of the Granular Activated Carbon filter, degrades and removes the organic micro-pollutants that are becoming more prevalent and of emerging concern. Pre-treatment is aimed at the removal of solids and colloidal particles through primary settling and scum decanting followed by coagulation-flocculation and removal of solids in a pre-disinfection column with lamella settling to turbidity of less than 1 NTU. Pre-treatment is followed by dual media sand filtration and granular activated carbon before micro-filtration. Ozone rich water is routed through a contact reactor for complete disinfection and dissipation of ozone prior to use.



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Project website: <http://safewaterafrica.eu>