

# Partial Water Desalination

## Water as a Service Innovation

### Description

**Facts:** The seawater comprises 96.5% of world's water supply. We currently do not have an easy and economical way of making it useful for agriculture and to optimize RO water feed neither for Lithium or Arsenic separation.

**Innovation:** During the last three years I have been working on an innovative technology to reduce the salt content from 3.5% to 1%, looking to making it suitable for farm irrigation with a great ecology impact. Now is the time to move forward and prove the concept with workable prototypes for Alfa test.

My technology to reduce the seawater salt is the best option to feed 17 Billion Gallons per day water requirements for Reverse Osmosis (RO) systems around the globe, while greatly improving RO membrane life.

An other benefit of this system is the increase of the Lithium mines productivity by decreasing the Lithium drying ponds time, same for Arsenic separation.

Improving sustainable living conditions in Middle East and North Africa coastlines, will allow the possibility to develop 19 million acres of desert lands to be transformed into a natural habitat ecologically sustained to bring tourism, as a great incentive to stop migration from Mediterranean Countries to Europe, improving everyone's living conditions, among America.

In addition, our priority is to turn the recovered mineral salts to a usable raw material instead of returning it to the sea or to a confined dump.

The key of this initiative is to have an efficient process to reduce the seawater salts without the cost and hurdles of the actual RO or evaporative process, to allow home owners in the coastlines mentioned to have water for home services and irrigation.

Our goal is to have a low-pressure, cost efficient 950 Gal/hr water volume processed, working with a 1.5 to 2 KW solar powered unit which can easily be installed in remote locations, to produce 400 Gal/hr of useful Salt Reduced Water (SRW).

It is now time to scale up the prototypes to improve parameters and process variables for each type of seawater, to have a Water as a Service business.

The Pilot Plant (PP) will help us to get the optimum above-mentioned parameters and variables, until we get the day by day repeatability required. This PP will also allow us to measure optimum capacity, cycle times, active components maintenance and replacement, energy costs optimization and, the feasibility of marketing waste by products.

The next step of the project will include Patent search and Intellectual Property (IP) analysis, actual technology evaluation and comparative charts, and Patent application strategy. For America, Middle East and Europe.

### Time

The pilot plant takes 12 months;

IP process should be 6 additional months.

The final stage includes all the industrial scale design and manufacturing engineering, required for internal and external test units, during a 12 months.

### Competitive advantage

- Low pressure.
- Small and easy to relocate 400 Gal/hr units. • 2 KW Solar powered.
- No membrane maintenance cost.
- No remote infrastructure requirements.
- Patentable technology.

### Market

America, Middle East and Mediterranean 16 million acres of near sea-line territory in 50,000 littorals miles; Reverse Osmosis feed of 17 billion gallons per day demand; Lithium drying process optimization and Arsenic separation for land recover.

Improve living conditions and development opportunities for 1.6 million Africans migration to EU from 2015 to 2018.

### Capital Strategy

Obtain Capital to build a seaside experimental Pilot Plant including a three year operational budget for: Personnel; IT; Infrastructure; Lab equipment; Travels and expenses.

UN Clean Water and Sanitation Grant request.

Local Government Agricultural Grants.

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