

Wastec, Inc.

Commercializing the proprietary water purification system initially developed for space stations where the self-perpetuating and regenerative environment is vital.

www.wastec.jp (Japanese only)

Wastec, Inc.
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5-9-20 Shinjuku, Shinjuku-ku
Tokyo 160-0022
JAPAN

Founded in: 2009
No. of employees: 3
Type of Ownership: private
Primary stock exchange: N/A

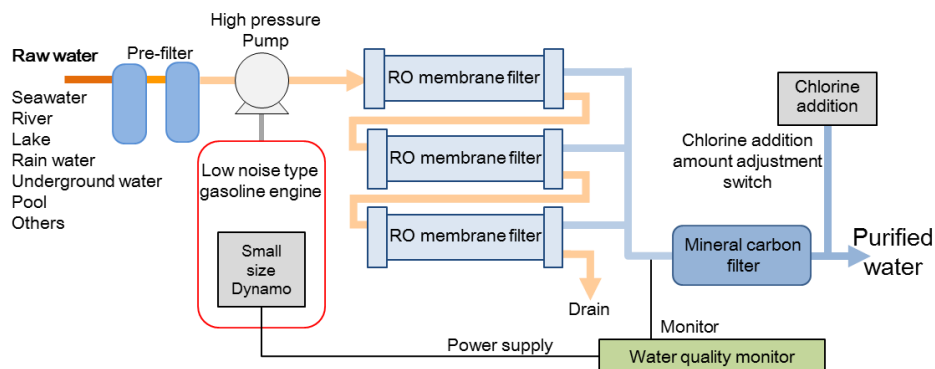
September 2014: Started by an expert in CELSS (Closed Ecological Life Support Systems) who used to work with JAXA (Japan Aerospace Exploration Agency), Wastec has developed a water purification system capable of not only decontaminating water exposed to radioactivity, but also providing healthy drinking water.



Venture Valuation (VV) interviewed the founder, Mr. Mitsuo Oguchi.

VV: Your water purification system applies reverse osmosis (RO) membrane technology. How does your system work? What is different from others?
Oguchi: RO membrane was originally developed for desalination of seawater in the U.S. in the 1950s. It removes molecules and ions of which size are physically larger than water molecules. We use RO membrane with a pore size of 0.1 nanometers (0.0001 micrometers). For your reference, the size of the smallest viruses such as picornavirus and parvovirus is 20 nanometers.

Our purification process consists of a strainer, two pre-filters, three RO membranes, and our exclusive mineral carbon filter with sterilization function. The water quality monitor measures electrical conductivity so that any chemicals that RO membrane can't eliminate are checked.(see chart below)



As the RO membranes remove all minerals, the end product is mineral free water which is tasteless and rather unhealthy. Our mineral carbon filter is designed for keeping a balance of essential minerals which are required for healthy drinking water.

In terms of decontamination of radioactive water, we inspected water from a pond contaminated in Fukushima a year after the nuclear plant breakdown on March 11, 2011. The testing was publicly performed on site. The contaminated water detected 661Bq/kg of cesium134 and 137 in total. After using our purification system, the gamma spectrometry by germanium detector proved the total of both types was below 0.74Bq/kg, which is the minimum detection level. This demonstrates our system is capable of eliminating the most perilous chemical elements.

VV: **What products are available?**

Oguchi: We have developed three types: portable (see below), large scale commercial use, and small scale residential use. Currently we are focusing on the portable type. It is designed for emergency relief operations as well as for supporting remote areas far away from the city's water pipe.



The portable product is 76cm high, 97cm long and 75cm wide. It weighs 73kg including two large rubber tires. In case of fresh water, its volume production rate is 267 liters per hour.

The production costs depend on gasoline price and how many hours the system is in operation. In the case of Nigeria, we estimate 0.86 JPY (approx. 0.008 USD) per liter

and, for seawater purification, 3.00 JPY (approx. 0.03 USD) per liter. The costs include the system price, gasoline, oil, filters, maintenance, and 2,000 hours operation time.

In order to make the system competitive in the market and affordable for users in developing countries, our challenge is to decrease the dependence of the gasoline price and the manufacturing cost for the system. We are currently in the process of developing alternative power source applications and exploring the possibility of assembling products by country. The on-site production is definitely cost effective.

VV: **What business partners are you looking for?**

Oguchi: Wastec is a small technology development company without sales force and manufacturing capacity. We are looking for distributors and eventually manufacturers in the countries where drinking water is scarce or unsafe. Our current target areas are Asia, Africa, and Middle and Near East.

We have projects in progress in Nigeria, China, and Myanmar. In Japan, schools and municipal governments are interested in our purification system. For instance, an elementary school is using the portable product to purify its swimming pool water for an emergency.



We are trying to reach out in the above mentioned areas to women who are committed to or engaged in water management as income generating activities. Women are most often not only responsible for household water supply, children's health and sanitation, but also knowledgeable about sources of water, quality, location, storage, etc.

VV Comments after the interview:

The global market of water business is estimated around US\$0.5 trillion in 2013 and projected to US\$1 trillion in 2025¹. Most countries lacking basic water infrastructure are in East Asia, Oceania, Central and South America, and Africa. The world's major water service companies are promoting and expanding business in these areas.

Nevertheless, Wastec has various opportunities to support and complement the basic water infrastructure. In the competitive market, it is a strategic advantage for the company to focus on doing business with women in collaboration with both the public and the private sectors.

The system's capability of decontaminating water exposed to radioactivity is also an advantage to be considered.

Contact

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Venture Valuation specializes in independent assessment and valuation of technology-driven companies in growth industries, such as the Life Sciences (Biotech, Pharma, Medtech), ICT, Nanotech, Cleantech and Renewable Energy. In addition to valuation products, Venture Valuation offers high-quality, focused information services like the Global Life Sciences Database, Biotechgate.com and this "Let's Interview Series" with companies with interesting technologies and services. We select and interview thriving companies and organizations all over the world.

¹ The Japan Research Institute Report, March 17, 2014