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Photo by: COURTESY OF ENVIRONOR

Norwegian firm seeks Israeli partnership in wastewater treatment, desalination barges

By SHARON UDASIN
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EnviroNor operates floating treatment plants to offer a cheaper solution to purifying the globe's water supply.

A Norwegian company aiming to convert secondhand oil barges into floating desalination and wastewater treatment plants is recruiting Israeli expertise to furnish the water-processing technology necessary for the ships.

According to Sigmund Larsen, the founder and CEO of EnviroNor, the floating treatment plants offer a cheaper solution to purifying the Earth's water supply, particularly in regions threatened by water scarcity and where land space for such facilities is lacking. Although, as a Norwegian firm, EnviroNor can bring to the table expertise in the maritime industry and know-how from the country's strong oil and gas industry, such as undersea pipeline infrastructure, Israeli proficiency in both desalination and wastewater technologies would be crucial to the project's development, Larsen explained.

"What we want to do is to combine those two pillars with Israeli knowledge," Larsen told The Jerusalem Post, during an interview in Tel Aviv interview on Tuesday. "Norway and Israel can collaborate more both on a political level and industrial level."

Larsen, in Israel for the past few days, has met with National Infrastructure, Energy and Water Minister Silvan Shalom, as well as representatives from his ministry; the Water Authority; the Economy Ministry; Mekorot national water corporation; and other water companies.

"It's cheaper to convert a ship to desalination or wastewater treatment plant than to do it onshore," he said, noting that the planning process in most countries is significantly shorter for offshore infrastructure.

The ships, he said, can hold quite sizable facilities, capable of purifying as much as 500,000 cubic meters of wastewater daily – to accommodate about 2.5 million people – or desalinating as much as 200,000 cubic meters of seawater daily.

"The environmental advantage here is that we are reusing a vessel," he said. "A ship is like a bottle of milk – it expires after 20 to 25 years and after that we send it to the beaches of India and Bangladesh for scrapping.

When we can extend the life of a ship from 25 years to 60 years, that is quite a big contribution to the environment."

While the floating facilities require energy to operate, a portion of the activity of the wastewater treatment plants can occur through biogas power generated through the methane extracted from the wastewater purification process itself, Larsen explained.

Desalination, he acknowledged, cannot, at this point, be considered an environmentally friendly process since it requires a lot of energy from sources such as liquefied natural gas or fuel from oil sources.

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In any country where EnviroNor would park one of these barges, the company would aim to bring value back by training the local population in areas of employment related to the ship's operations, Larsen said. The country would pay a fixed daily fee for the barge's operations, as well as a charge depending on how much purified water they use, he explained.

EnviroNor is close to closing on an agreement with Mozambique to serve as a pilot site for the first of the wastewater treatment barges, Larsen said.

The first barge should be up and running by the end of 2017, he estimated.

The company has envisioned four types of barges to fit specific needs. The first, the "Reliever," treats wastewater piped to it from shore and then releases the treated wastewater into the sea according to the environmental guidelines of the given country, Larsen said. The Reliever can replace a medium-sized processing plant and can be particularly beneficial as a backup when an onshore facility is under repair.

The second barge is the "Changemaker," a more permanent installation that delivers treated wastewater back to shore for use in either agriculture or for drinking purposes when treated to a tertiary level. The Changemaker, Larsen said, is suitable when land area is limited for such treatment facilities onshore.

On this ship, biogas extracted from the wastewater treatment can be used to power about 25 to 40 percent of the process, he explained.

The "Water Factory," meanwhile, is a smaller floating unit that can produce drinking water from river water and is particularly useful in areas where drinking water is scarce, Larsen said.

The fourth unit, thus far, is the "Emergency Relief Vessel," which can convert seawater into potable water in areas hit by catastrophe and are in dire need of drinking water.

While EnviroNor has designed the floating mechanisms in which to house these processes, Israeli expertise in desalination and wastewater treatment technologies could help see the project to fruition.

"My purpose here is to see if we can have a collaboration between Norway and Israel, to have access to the best water technologies in the world," Larsen said. "If we can do that jointly, nothing will be better."

The EnviroNor project has been listed by the Norwegian DNV GL environmental infrastructure classification society as an "extraordinary innovation project," and also is receiving support from Innovasjon Norge – the Norwegian government's development instrument for Norwegian enterprises and innovations.



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