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How collaboration with Israel can help Miami-Dade create an efficient, safe water infrastructure

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Albert Einstein said that one can best find opportunity in the midst of difficulty.

As Miami-Dade County moves forward with potential upgrades to its antiquated water system, there are multiple opportunities to deploy innovative solutions to create an efficient, modern and safe water infrastructure. For a number of historic and technological reasons, Israel can offer many innovative solutions that could benefit Miami.

Miami-Dade needs to rehabilitate its wastewater treatment plants and its wastewater collection and transmission system during the next 20 years, according to the consent decree entered earlier this year between the county and the U.S. Environmental Protection Agency, state of Florida and the Florida Department of Environmental Protection.

Why look to Israel? For the past 100 years, and even more so since its inception as a state in 1948, Israel emphasized the need to maximize its meager water supply by turning much of its arid land into fertile agricultural soil. David Ben Gurion, Israel's first prime minister and one of its founding fathers, declared the goal of "making the desert bloom" as one of the central themes of the new nation. Israel is recognized today as a global leader in water policy, creating one of the world's most efficient and innovative water infrastructures.

For example, Israel reclaims almost 75 percent of its reused effluents in agriculture. Because of advanced technology and management, Israel's total water consumption has remained almost the same since 1964, despite a growing population and agricultural industry.

Without a doubt, Israel is uniquely positioned as a hub for advanced water solutions, with its vast experience in water management, desalination, innovative irrigation and sewage recycling systems. Currently, Israel boasts the world's largest RO (Reverse Osmosis) desalination plant, the world's fourth-largest filtration plant, and advanced drip irrigation systems. In addition, Israel is renowned as a technology powerhouse due to innovative abilities in the applied sciences and technology fields, backed by a pioneering entrepreneurial spirit and high-quality workforce.

Just a limited sampling of Israeli innovative companies in the water space is mind-boggling.

More than 70 years of innovation in the face of Israel's significant environmental and security challenges have made Mekorot, Israel's national water utility, a leader in desalination, water reclamation, project engineering, safety and quality. Mekorot also promotes the development of innovative new water technologies in Israel through its WaTech initiative, serving as a beta site for innovative solutions.

Netafim, a global leader in advanced drip and micro-irrigation solutions, has helped make Israel a global leader in breakthrough irrigation solutions.

Amiad Filtration Systems has long been a leader in filtration technology.

Israel has also demonstrated ingenuity in wastewater and water treatment. Elcon Recycling is an innovative hazardous wastewater and sludge treatment service provider that transforms waste to energy and clean water.

Emefcy's Electrogenic Bioreactor (EBR) treats wastewater and produces green electricity as a byproduct.

Atlantium Technologies takes water safety to new levels utilizing UV systems without chemicals, and also providing industry and municipalities with a sustainable, measurable option.

Desalination is another key to sustainability. Desalitech offers high-recovery water and effluent treatment solution, delivering 70 percent reduced brine waste and 30 percent reduced energy consumption. IDE Technologies specializes in the development, engineering, production and operation of advanced desalination as well as innovative industrial solutions.

Efficient water management solutions are essential, too.

Miya of the Arison group of companies provides comprehensive urban water efficiency solutions, including non-revenue water reduction. Whitewater Technologies operates in the smart water network management software market, offering solutions to unlocking available capital by increasing operating efficiency.

Master Meter Advanced Metering Infrastructure (AMI) helps utilities become more proactive for their customers, act as better stewards of water resources, and help ratepayers better manage their water and drive down monthly costs.

TaKaDu's network monitoring service takes data from existing sources and analyzes it in real time. It automatically locates and classifies water network events as early as possible. And there are many more.

For Miami-Dade, the infrastructure upgrade is expected to enable it to eliminate sanitary sewer overflows from its wastewater collection and transmission system and achieve compliance with its National Pollutant Discharge Elimination System (NPDES) permits. But with thoughtful use of the proven energy-water nexus, efficient water infrastructure could also result in substantial energy savings. According to a University of Texas research, about 13 percent of the nation's total annual energy is used to pump, heat, cool, treat, and transport water. Technology can reduce that level.

The Israeli Consulate in Miami together with the Miami office of the international law firm of Greenberg Traurig recently hosted a seminar showcasing some of Israel's innovative water technology companies. The seminar generated great interest and enthusiastic prospects for collaboration among the seminar's Israeli and South Florida participants. It is an exciting time for the water industry in South Florida as we have the opportunity to be heading to a 21st century water paradigm, where we value, conserve and reuse water to meet business, public and ecosystem needs. A strong partnership between Israel and Florida will go a long way toward achieving those goals.

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