



Ministry of Economy



The Israel Export &
International Cooperation Institute



Israel
NewTech
National energy & water program



Samuel Neaman Institute
For Advanced Studies In Science And Technology



Israeli Technology in the Pharmaceutical Sector

Israel has been a pioneering force in global efforts to develop the technologies that can address some of these challenges, offering innovative technologies that promise to dramatically alter the playing field. The cutting-edge technologies now available include:

- A treatment process based on a bio-film which provides organic carbon removal, as well as nitrification and de-nitrification where needed, without circulation of activated sludge.
- A unique water and air-monitoring system that permits real-time discovery of very low levels of biocontaminants. Its relative operational simplicity, limited size, and cost-effectiveness make the product suitable for all key applications.
- Automated solutions that operate on-line for constant cleaning of heat exchangers, ensuring their efficient operation and keeping them clean of deposits and incrustations at all times, without unwanted stoppages in their operation and without the need of chemicals.
- A one-step integrated wastewater treatment solution. The process is based on patented, ambient pressure thermal oxidation that can treat high COD wastes, sourcing the embedded energy in the wastes (organic matter), and thus able to create an efficient process at competitive prices.

The pharmaceutical sector needs solutions. Israel has them. To find out more about the Israeli water technologists which are helping to advance industry while shaping a better global future, **contact Israel NewTech: israelnewtech@economy.gov.il**

www.export.gov.il

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The Pharmaceutical Sector



Introduction

Overcoming the challenges of an arid climate has been vital to Israel's growth since its establishment. Driven by circumstance to maximize its creative capacity, Israel's innovations in the realm of water technologies, management, and long-term planning have made sustainable water consumption a reality in 2013, and well into the future.

Among the impressive range of innovations, nationwide reclamation of treated domestic wastewater for irrigation in the agricultural sector, solutions for industrial wastewater, and the large-scale production of desalinated water have been especially groundbreaking. In fact, Israel has the highest level of water reclamation in the world today.

Israel NewTech, the Israeli national program for the promotion of the Cleantech sector, led by the Ministry of Economy, in collaboration with the Samuel Neaman Institute at the Technion, and the Israeli Export & International Cooperation Institute, conducted strategic research to identify global current and future challenges of water usage in six dominant industry sectors: Oil & Gas, Mining, Pharmaceuticals, Food & Beverages, Semiconductors & Metals. This research helped to identify the challenges unique to each sector and to estimate the potential contribution of Israeli water technologies in offering innovative solutions.

The Pharmaceutical Industry and Water Management

Used at critical stages in the production and manufacture of pharmaceutical drugs, water is a natural resource that is inseparable from the industry's production processes. Playing a central role in the industrial-scale synthesis of pharmaceutical drugs -- which requires water at the highest purification standards -- as well as during the subsequent separation, crystallization, and multiple-stage purification phases, the importance of water to the pharmaceutical sector can hardly be overstated.

In a changing global climate in which environmental regulation is a major concern to pharmaceutical companies, **adopting the type of economically efficient and environmentally sustainable water technologies available to date is of increasing importance.**

Improving API wastewater removal, preventing the contamination of ground water, increasing efficiency of pretreatment of UPW (ultrapure water) during production, advancing specific treatments for biotechnological drug manufacturing, and reducing sludge volume present just a few of the areas in which the sector can benefit from water technology innovation so as to compete in a rapidly changing global environment. Implementing the cutting-edge technological innovations on the market to date can help facilitate both profitability and sustainability, spawning significant industry growth, while meeting the changing needs of today.