



December 25, 2018

Dear ICS members,

I am delighted to announce that the 2018 ICS Prize for the Green Chemical Industry will be awarded to Global Environmental Solutions Ltd. (GES) for building and operating advanced waste water recovery plants, thus saving fresh water, reducing consumption of chemicals and minimizing the environmental footprint of the chemical industries in the Haifa Bay.



Global Environmental Solutions Ltd.

GES Ltd. has designed, built and is operating the largest Israeli waste water recovery plant since the beginning of 2017. The plant is one of the largest industrial water recovery plants worldwide, implementing four different membrane separation processes to produce pure water for reuse from the industrial hard-to-treat effluent. The plant treats up to 5,000,000 m³/year of industrial effluent emanating from the BAZAN group plants, including Haifa Oil refinery, Carmel Olefins and Gadiv, and recovers up to 3,000,000 m³/year of valuable process water, such as soft water for cooling towers makeup and ultrapure water for steam and energy production. The plant applies a unique approach of waste recovery using four different membrane separation processes: External Membrane Biological Reactor (AL-MBR) with minimum sludge production, two passes of Enhanced Reverse Osmosis units with energy recovery device for minimum energy and chemicals consumption and Electro-deionization membranes for chemicals free production of ultrapure water.

The plant has achieved several outstanding environmental benefits:

Saving fresh water for public use

Up to 3 million m³/year of valuable process water are recovered back for the BAZAN group plants, thus replacing the existing old-fashion water treatment facilities. This achievement saves more than 4 million m³/year of fresh water that was previously used by BAZAN.

Saving chemicals and reducing hazardous waste

The existing water treatment facilities of BAZAN plants, which were based on old technologies, consumed large amounts of chemicals and produced large amounts of waste. In contrast, the GES industrial effluent recovery technology minimizes consumption of chemicals and waste generation, and produces ultrapure water.

Environmental improvement of the Kishon River

The industrial effluent recovery plant not only recovers valuable process water from the industrial waste, but also improves the quality of the Kishon river. First, the recovery plant reduces significantly the amount of waste disposed to the environment with more than 60% of the waste being recovered back to the plants and only 40% disposed to the river. Second, the recovery plant treats the industrial waste by an advanced biological treatment process, which significantly improves the quality of the waste. As a result, the quality of the waste disposed to the river after desalination is higher than the original waste stream.

The award ceremony will take place in February 12, 2019 in the 84th ICS Annual Meeting.

Congratulations to the GES people for their achievements!

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