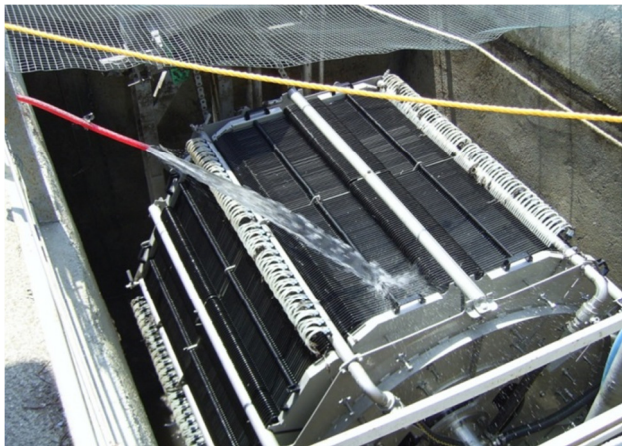


The university subsidiary company, METUTECH, manages the science park within the METU campus and needs to maintain its lawns for presentable appearance. Until 2007 municipality water was being bought for irrigation of lawns during summers at a cost exceeding 3.5 Euros/m<sup>3</sup>. This placed a massive financial burden on the management. As of 2007, irrigation water cost was decreased by about 150,000 Euros per annum, upon the wastewater reuse facility of METU going into operation. Objectives of the best practice may be summarized as follows: To reuse treated wastewaters in lawn irrigation so as to cut water costs at METUTECH, to set example for the community for sustainable management of water resources and to



combat times of water shortages; to expose university students to a treatment technology which is at the fringes of development, to train graduates who would take part in design and installation of such advanced processes and to promote research on an advanced process.

A vacuum rotating membrane plant, VRM, donated by HUBER A.G. for research, development and training, was installed at METU campus in 2003 by the METU-Environmental Engineering



Department, as part of a joint research Project with the Berlin Technical University. Initially VRM was an experimental plant and the treated effluents were being drained into the groundwater through a vegetation bed. Later observing the flawless operation of the plant, METUTECH administration decided to invest into an 800 m<sup>3</sup> closed storage basin and a distribution system for the irrigation of its lawns. This has been commenced in summer of 2007. The plant provides 200 m<sup>3</sup> of treated and sterile water daily during the course of summer months; though it is

operative year round and treated waters during winters were being wasted due to lack of extra storage facility. In 2009, a disused lagoon in the campus was upgraded into a storage basin for an extra 16,000 m<sup>3</sup>. Although still short of water, METUTECH is now irrigating much of its lawns by the treated wastewater.

With the operation of METU VRM treatment plant a saving around 150,000 Euros has materialized annually and this sum is now being spent for more useful purposes such as expansion of the METUTECH science park and to support university student grants. The VRM plant set an example for the community in reusing treated wastewaters to combat droughts and water shortages. Currently two similar plants have gone into operation at a touristic region of Turkey, which suffers from chronic shortage of water. Both plants have been initiated upon administrators visiting the METU VRM plant. The METU plant and similar technologies preserve the environment at its pristine condition by producing sterile effluents that are free from pollutants. Effluents are no longer referred as wastewater, since they are ordinary water at that state. By closing the loop using this technology reuse waters can provide an Infinite supply of source water to communities that are short of water, thereby improving public health. The lessons learned from this implementation were all positive. The reuse practice in this example proved highly successful and beneficial since it worked flawless until now; though there have been times of difficulty when the plant had to shut down due to mechanical failures. These were repaired by local expertise and knowledge.