

Environmental Group Monthly Presentation:***Energy Demand and its Associated Cost and
Carbon Emission in Water Reclamation and Purification Processes
in Southern California*****Thursday, May 23rd, 2013 at 7:30 p.m.****Reza Sobhani, Ph.D.**

Research Scholar, University of California, Irvine

Presentation Abstract:

Water reclamation and purification (WRP) implies processing wastewater to meet potable standards. Energy-conservative, cost-effective, and reliable treatment technologies are vital to the successful implementation of WRP projects. The employed treatment technologies are typically energy intensive and are associated with direct and indirect release of greenhouse gases.

This presentation provides an overview of WRP energy footprint, and discusses the main energy components of two large WRP treatment plants located in Southern California. Furthermore, it discusses the dynamics of energy footprint and its associated cost due to the abrupt or gradual variations generated by many environmental and process parameters during short (e.g. diurnal) and long (e.g. seasonal) time periods. Due to the high energy consumption by WRP processes, this presentation scrutinizes the carbon emission associated with purchased power from different power supply companies, and the reasons of discrepancy between the reported emission ratios (gram CO₂ emission per kWh energy generation) among these agencies.

Speaker Biography:

Dr. Sobhani is a research scholar and lecturer at University of California, Irvine. He has more than 10 year research and professional experience in different engineering projects. His research focuses on energy analysis of water industry (i.e. water treatment, wastewater treatment and water reuse), urban water system management, and carbon emission. His research have been published by well-known peer-reviewed journals (e.g. Water Research, Environmental Management and Desalination) and presented in conferences such as WEF, WEFTEC, IWA and AEESP. He obtained his Bachelor and Master degrees in Industrial Engineering and his PhD in Environmental Engineering from University of California, Irvine.

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