Abstract Template

Abstract Title: The Water-Energy Nexus and Geothermal Exchange

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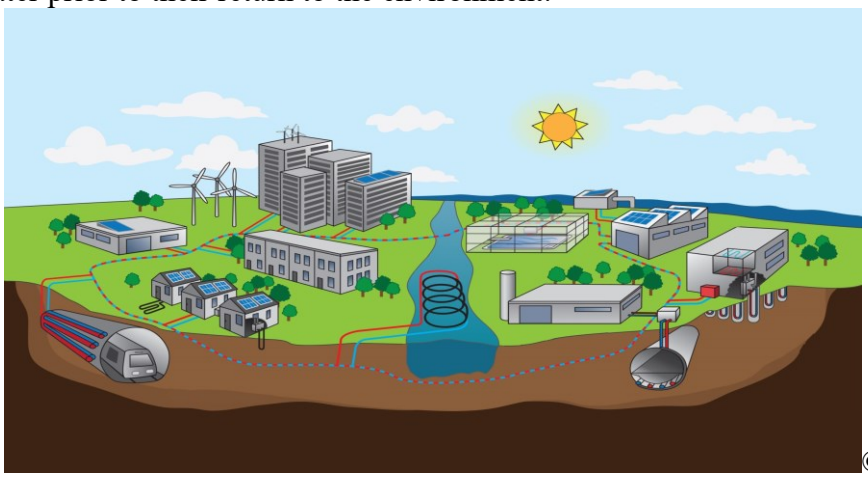
[1] *Jay Egg (Brigham Young University, Idaho)*

Abstract

"Water-Energy Nexus" is a term used to describe the interdependence between water and energy in our lives. In the development of master planned communities, the Water-Energy Nexus is front & centre, and has yet to realize its full potential. As an example, the US Department of Energy estimates that 350 billion kilowatt-hours per year of energy paid for by its citizens goes down the drain. That is just the beginning.

In our homes, offices and buildings, we are paying to simultaneously heat and cool different areas and systems. Beyond our buildings there are infrastructure processes going on outside of the building that could easily be put to use in the Water-Energy Nexus.

Present day water and energy systems are interdependent. Water is used in all phases of energy production and electricity generation. Energy is required to extract, convey, and deliver water of appropriate quality for diverse human uses, and then again to treat wastewater prior to their return to the environment.


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An integrated, strategic approach can help us to address regional water-energy issues and also have national and global impacts. Enhancing and integrating data and models will better serve investors, the utilities, and the public.

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Keywords—*Potable & Effluent Thermal Exchange, Sharing Energy through Wastewater Thermal Recovery, Thermal Advantage Load Sharing, Water-Energy Nexus & Geothermal Exchange*

Professional Biography (100-150 words)

Jay Egg is a US Navy trained nuclear power engineer. He began a career in mechanical engineering & contracting in 1990. Jay is the lead author of two McGraw-Hill textbooks, Geothermal HVAC in 2010, and Modern Geothermal HVAC Engineering and Controls Applications in 2013.

Jay currently focuses his professional efforts as a renewable energy expert on geothermal energy utility efforts, solar/geothermal exchange implementation, and aquifer related environmental issues, permitting, feasibility & variances or special permitting such as utility-scale geothermal exchange systems.

He focuses his efforts on feasibility and permitting efforts on unusual or difficult aquifer & surface water applications. Using down to earth learning patterns, Jay provides technical validation and insightful speaking & training engagements. Among his clients are international, federal, state and local governments, developers, associations, and private entities.



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Any Comments:

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