Paper at UNEP - ASHRAE Conference

Addresses Climate Change with Innovation

presented by Father – Daughter Team

CAIRO, EGYPT 1 Oct 2010 – No doubt you've heard of Geothermal Energy or Hydro Electric Power now let us introduce you to *Hydrothermal Energy*. Can you imagine the buildings and homes in the cities of Miami, Chicago and Muscat, Oman air conditioned by the adjacent 4°C deep water off the coast instead of using conventional air conditioning? It's 90% less costly to the public and the environment and it's being done today in Toronto, Canada.

Ted Jagusztyn and his daughter Marie Reny of Fort Lauderdale, Florida presented a paper "Natural Cold Water District Cooling Plants Enabled by Directional Drilling" at the Joint UNEP – ASHRAE conference in Cairo, Egypt on 1 October 2010

Innovator Ted Jagusztyn from the United States traveled to the Cairo UNEP –ASHRAE conference to present a paper co-authored by his daughter Marie Reny. They suggest using the naturally cold 4°C water in deep oceans and lakes in heat exchangers with the city municipal water supply to cool commercial and residential buildings instead of individual, energy intensive air conditioning units. To access the deep cold water, the team from Cotherm of America Corporation proposes the use of directional drilling to erect "protected seawater conduits" to responsibly extract and discharge the earth's thermal potential. The natural process of cooling not only provides comfort with significant reduced carbon emissions but also increases the ocean's surface ability to absorb atmospheric carbon dioxide by emulating nature's process of upwelling.

Rajendra M. Shende, the Head of the OzonAction Branch of the United Nations Environment Programme (UNEP) in his closing remarks of a two day conference thanked authors for presenting "newsworthy innovation" to the field of Climate Change mitigation. The two day conference titled "Road to Climate Friendly Chillers" jointly sponsored by UNEP and ASHRAE invited professionals from over seventeen countries to suggest solutions to provide cooling without the negative impact of greenhouse gas refrigerants.

The authors' "disruptive innovation" was inspired by the wisdom of Albert Einstein who once said *"We can't solve problems by using the same kind of thinking we used when we created them."* The paper concludes with an invitation to "Government, NGO, commercial, academic and research institutions to study and model this innovation in areas within 11 kilometers of 4°C water. HVAC professionals are well advised to consult with oceanographers, geologists, and directional drilling professionals to assess the natural cooling opportunity in their local community."… *"The best way to predict the future is to invent it."*

The papers are available for public viewing at the conference website www.rcfc2010.org. More information about Cotherm of America's innovations are available at their website www.cotherma.com

Drilled Hydrothermal Cooling:

An Innovation Reducing Carbon Emissions

and Increasing Ocean Carbon Absorption

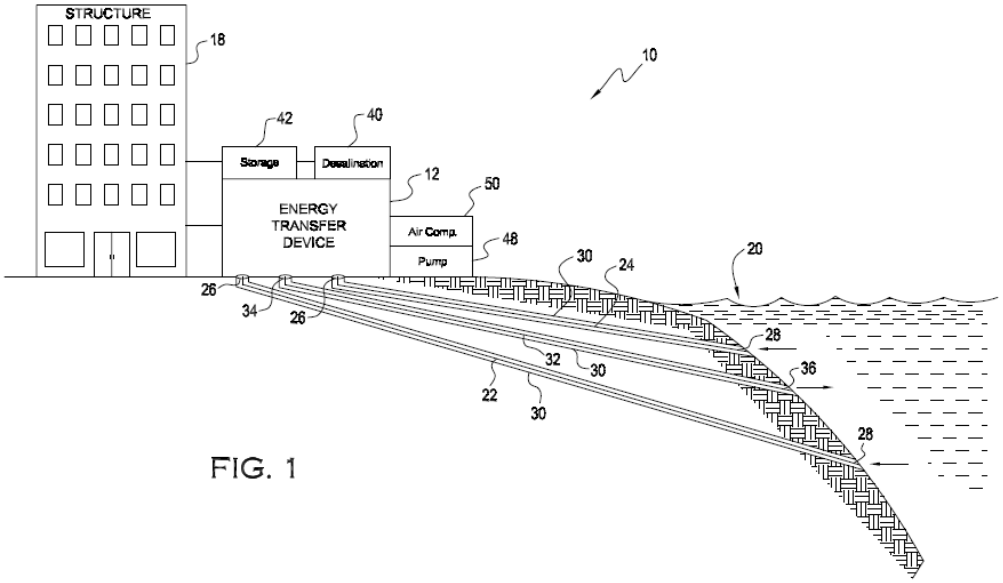

FIG. 1

The above patent drawing (Jagusztyn et al. 2010) illustrates the concept of using directional drilling to access cold (4°C) ocean or lake water. This environmentally responsible method of extraction and discharge avoids disturbing coral reefs and thermal pollution, while protecting the investment from earthquakes and hurricanes. This cold water, when brought to onshore wells, will be used for space cooling and process cooling saving 90% of the comparable mechanical cooling cost. Clean low cost electric power may be generated from the temperature difference of warm surface water and deep cold water. This power may also be dedicated to generate low cost hydrogen fuel. Upon returning the mineral rich deep water to the upper layer, ocean atmospheric carbon absorption is increased, thereby mitigating anthropogenic climate change.

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