

International Water Consortium Inc.

SOLAR CO-GENERATION OF ELECTRICITY AND WATER

Global megatrends have created the basis for a unique business opportunity

Water shortages due to falling groundwater levels, urbanization and population growth are emerging as considerable threats to economic growth in many parts of the world. The growing need for more efficient use of the increasingly scarce resources energy and fresh water has created the basis for a unique business opportunity. Based on state of the art water purification technology, International Water Consortium Inc. (IWC) has developed a solution for integrated use of waste heat for water treatment and desalination of seawater. In particular, the concept is suited for cooling high temperature solar power plants—with purified fresh water as a by-product. Such combined production of electricity and water is the most economical choice for future implementation of renewable energy and water infrastructure projects on large as well as micro scale. IWC is now looking for a lead investor to make use of this significant business potential and world-leading expertise in co-generation of power and water.

A move towards greater efficiency in the field of renewable energy

IWC's concept is a unique application of the water purification technology Membrane Distillation (MD). The principle of MD is that steam from heated water is passed through a hydrophobic membrane and then condensed on the other side. The process allows for desalination of seawater in a low pressure and low temperature separation process that can be powered by cooling water from solar power plants. Cooling is a necessary process in Concentrated Thermal Solar Power (CSP) as well as in Concentrated Photovoltaic (CPV). If the cooling is done with water of a liquid coolant, the rejected heat can be used for desalination in an MD process. Such process integration allows for considerable reductions in operating and capital cost per installed cubic meter. Turning the necessity of cooling into a process with useful output therefore increases the plant competitiveness. Establishing the MD technology on the market facilitates alternative energy utilization and a move towards greater energy efficiency. In the long run, the cost of an integrated MD solution may be lowered to enable entirely clean emissions from industries and desalinated water for irrigation.

Competing technologies are less cost-efficient

MD can go much further in concentration than competing desalination technologies. Such competing technologies include Reverse Osmosis (RO) and Multi-Effect Desalination (MED). RO is the preferred technology for normal desalination today, but MD and MED are more competitive when used for thermal power polygeneration. Out of the latter, MED has higher efficiency with regards to heat utilization, but MD comes with lower capital as well as operating costs.

Business model

IWC's business model is to sell MD-equipment to both large and small CSP and CPV plants. This is a good fit with the European Desertec project as well as other large scale solar power projects being implemented or planned in Australia, China, India, the Middle East, North Africa and the United States.

August 16, 2012