

# Seawater District Cooling and Lake Source District Cooling

## SDC/LSDC Systems

Seawater District Cooling (SDC) and Lake Source District Cooling (LSDC) provide chilled water to communities and industry for air conditioning and process cooling. OCEES' SDC/LSDC systems reduce the consumption of electricity by as much as 90% when compared to conventional cooling processes. This is done by deriving chilling capacity from the virtually unlimited natural resource of deep ocean/lake water rather than from an electric chiller.

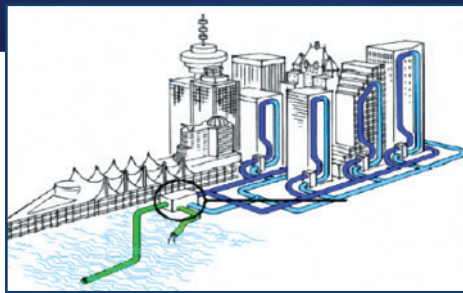


## Design Considerations

OCEES designs SDC/LSDC systems based on client needs and existing infrastructure.

SDC/LSDC is most effective where one or more of the following apply:

- A cold water source is close
- Cooling requirements are significant
- There is a concentrated demand for cooling
- The local cost of electricity is high



## SDC/LSDC Components and Process Flow

- Seawater or freshwater supply and return pipeline
- Heat exchange facility
- Chilled water distribution system

*Seawater is not routed to customer buildings.* Cold water is pumped through the supply pipeline to a chilling station. Heat exchangers at the chilling station are used to cool freshwater (or other cooling medium) in the closed loop distribution network. The distribution network supplies customer buildings with the cooling medium. In some cases, a building's heat exchanger is included and the building's existing chilled water loop is preserved.

## Benefits of SDC/LSDC

- Decreased operating cost
- Decreased capital cost
- Decreased maintenance requirements
- Increased operational reliability
- Environmentally friendly
- Reduced burden on electric company

## Operational SDC/LSDC systems

SDC and LSDC systems are in place and operating at various locations throughout the world. They range in size from 400 to 80,000 tons of cooling capacity.

- Bora Bora - 400 tons
- Stockholm - 80,000 tons
- Hawaii - pilot scale operating, 20,000 tons planned
- Toronto - 75,000 tons
- Cornell University - 20,000 tons

OCEES has several SDC Systems in various design stages throughout the world.

**Leading the Global  
Energy Transition to  
Ocean Thermal Resources**



6600 Kalaniana'ole Hwy., Suite 224 Honolulu, HI 96825  
(808) 954-6020 (phone) • (808) 954-6010 (fax) • [www.ocees.com](http://www.ocees.com) • [info@ocees.com](mailto:info@ocees.com)