

# District Cooling System

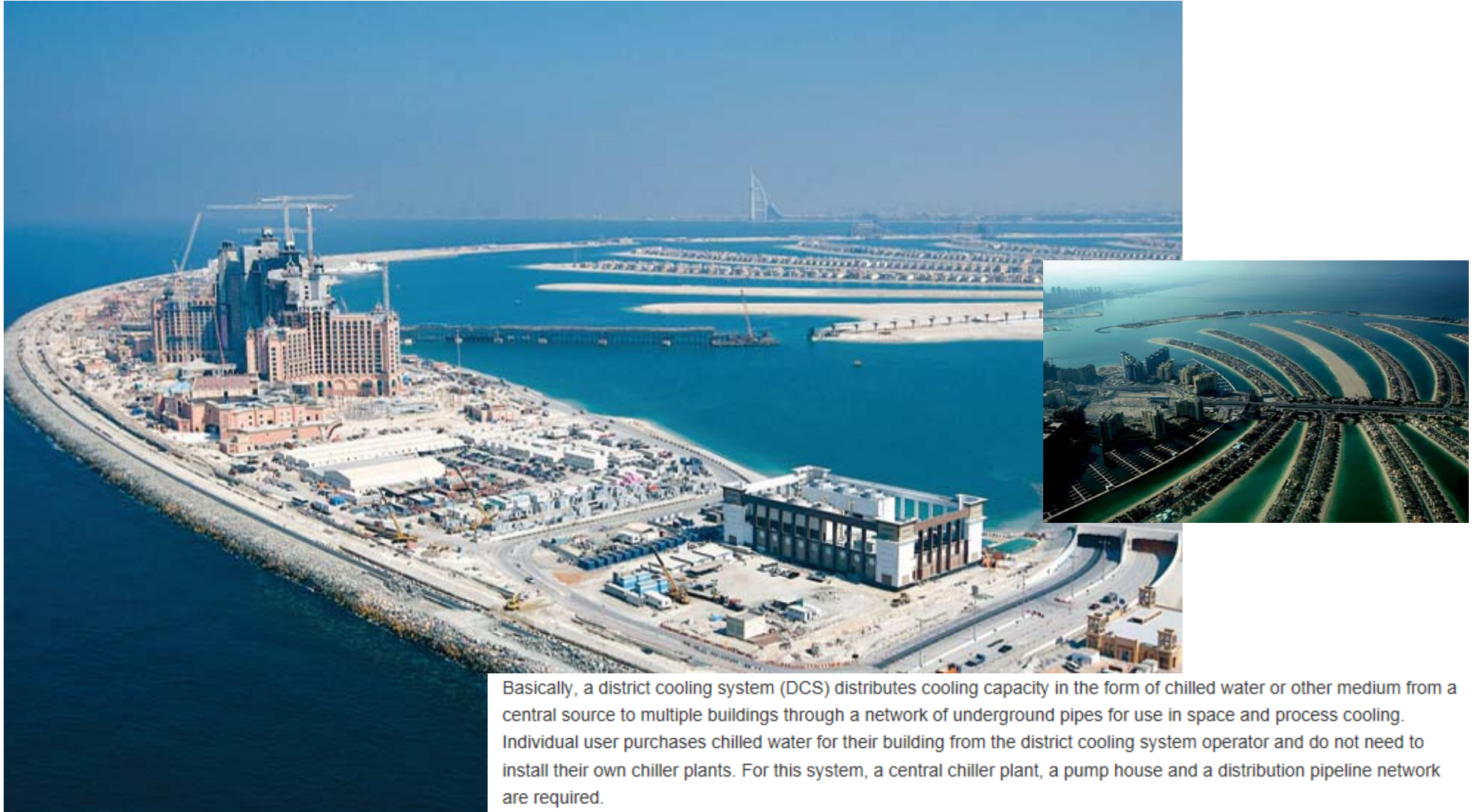
**Dr.Pongpan Vorasayan**  
**Bureau of Energy Regulation and Conservation**  
**DEDE, Ministry of Energy, Thailand**



Department of Alternative  
Energy Development and Efficiency  
**MINISTRY OF ENERGY**

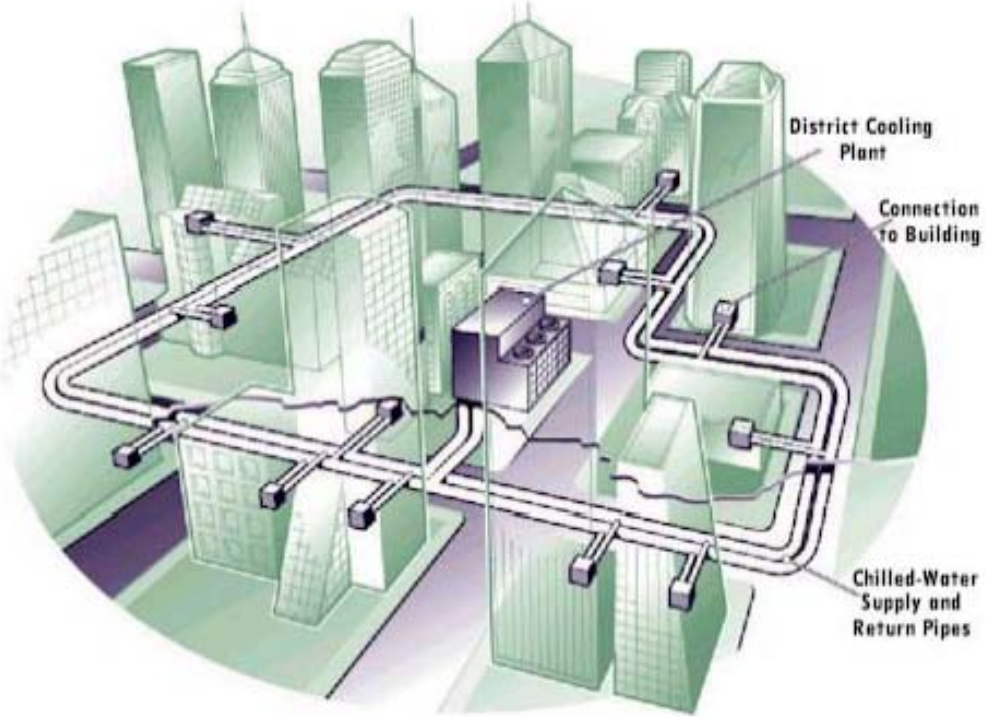


# District Cooling system



Basically, a district cooling system (DCS) distributes cooling capacity in the form of chilled water or other medium from a central source to multiple buildings through a network of underground pipes for use in space and process cooling. Individual user purchases chilled water for their building from the district cooling system operator and do not need to install their own chiller plants. For this system, a central chiller plant, a pump house and a distribution pipeline network are required.

# District Cooling system



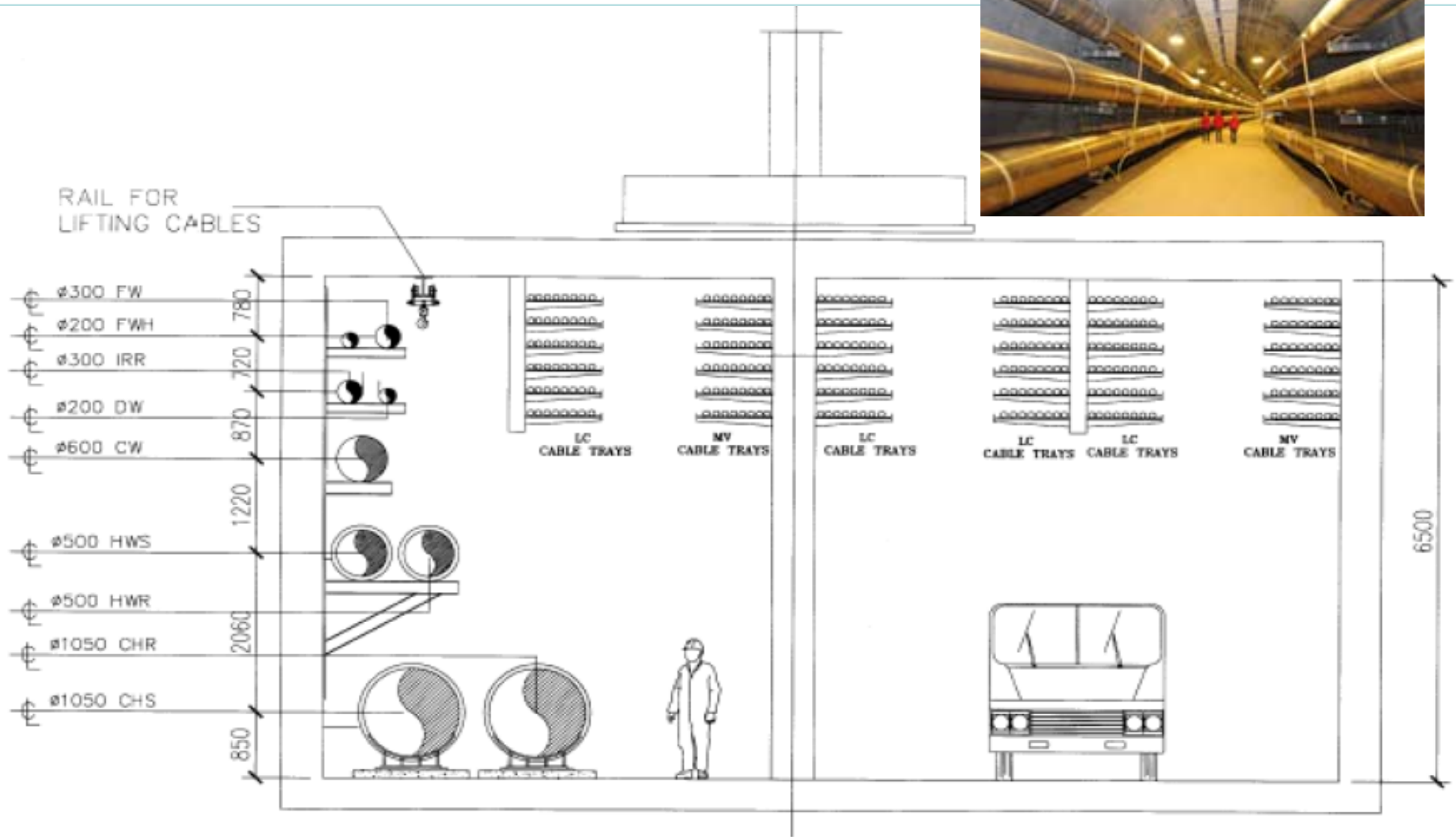
(DCS central chiller plant control room)



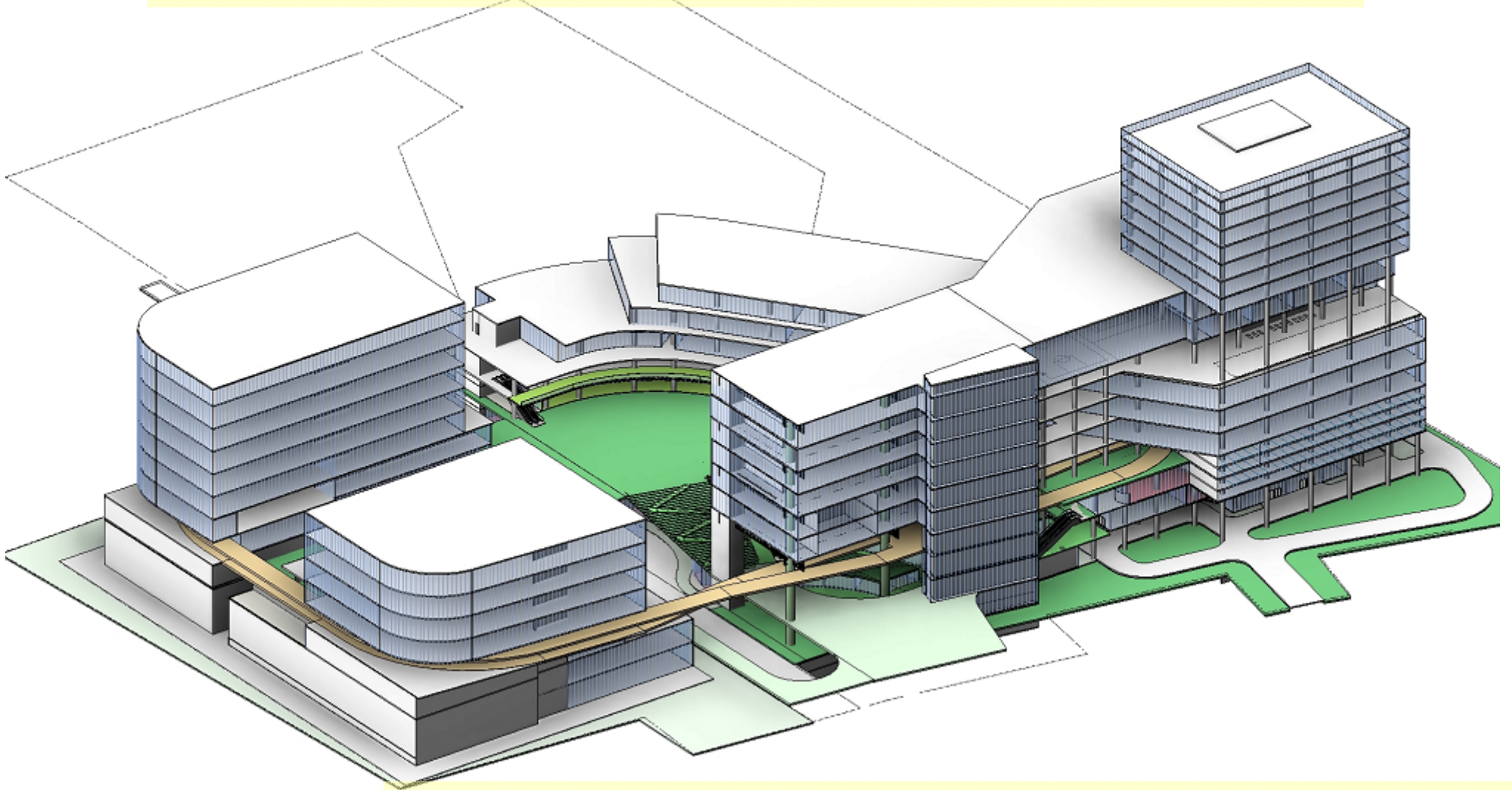
Chiller room inside the largest district cooling plan in the world, at The Pearl-Qatar. (Image courtesy Qatar Cool)



# DCP Transmission line



## Conventional System or District Cooling System ?

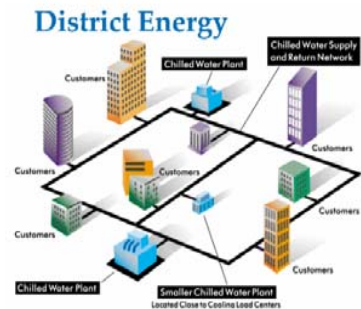


Limited time Operated or 24/7 Day

# Benefits of District Cooling system

## For Campus

- High Efficiency Plant ( 0.65 – 0.85 kW/Tr)
- 24/7 day High Grade Bld. & hi-eff energy usage
- No Additional Split-type unit in Campus
- Minimize Capital Investment
- Minimize Area of Utility Plant
- Ready to use
- High Stability & Reliability
- Central Maintenance
- Environmentally Friendly  
( Heat - Noise - Pollution – Green House Effect - Refrigerant Usage )
- Minimize the Growth of Power Plant





# Benefits of District Cooling system

## For Condominium

- No Condensing unit in Condo unit
- Reduce Transformer Capacity
- Reduce EE main feeder & Distribution
- Reduce MDB - DB – PB
- No noise & heat rejection from CDU
- Low Service & Maintenance
- Free waste heat to washing machine & clothes dryer



# Highlighted District Cooling Projects in Thailand



**Status : Completed, in operation**

**Project** : Government Complex –  
Chaengwattanna, Bangkok

**Function** : Multi Office Buildings, Convention Center

**Area** : GFA 975,200 sqm

**Cooling Capacity** : 12,000 RT

**Status : Completed, in operation**

**Project** : Siriraj to Medical Excellence  
in South East Asia (SIME)

**Function** : Multi Buildings Hospital Campus

**Area** : GFA 238,000 sqm

**Cooling Capacity** : 6,000 RT





# Highlighted District Cooling Projects in Thailand



**Status : Design Development / Construction**

**Project** : THE FORESTIAS  
**Function** : Mixed Use Complex  
(Hotel,Office,Condo,Hospital,Retail,Residential)  
**Area** : GFA 750,000 sqm  
**Cooling Capacity** : 10,000 RT

**Status : Design Development / Construction**

**Project** : ONE BANGKOK  
**Function** : Mixed Use Complex  
(Hotel,Office,Condo,Hospital,Retail)  
**Area** : GFA 1,830,000 sqm  
**Cooling Capacity** : 38,000 RT





# Highlighted District Cooling Projects in Thailand



<b>Status</b>	<b>: Construction</b>
<b>Project</b>	<b>: The New Tobacco Factory</b>
<b>Function</b>	<b>: Multi Factory Buildings</b>
<b>Area</b>	<b>: GFA 276,400 sqm</b>
<b>Cooling Capacity</b>	<b>: 6,000 RT</b>

## **Status : Design Development**

<b>Project</b>	<b>: The Super Tower</b>
<b>Function</b>	<b>: Mixed Use Complex</b>
<b>Area</b>	<b>: GFA 320,000 sqm</b>
<b>Cooling Capacity</b>	<b>: 10,000 RT</b>





**Thank you  
for your attention**



Department of Alternative  
Energy Development and Efficiency  
**MINISTRY OF ENERGY**