

# SINGAPORE

# >98%

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## Tampines to get cooling system by 2025

Ang Qing

By the first half of 2025, Tampines will become the first town centre here to retrofit a centralised cooling system in a project that will slash the environmental cost of air-conditioning. It will also pave the way for more than 80 per cent of buildings in Singapore to follow suit.

Yesterday, owners of seven buildings agreed to start work on SP Group's first distributed district cooling network, with another slated to join in the future, said SP Group and investment company Temasek in a statement.

District cooling technology involves generating chilled water in a centralised location, and then sending the water through a network to multiple buildings. It is more energy efficient as the system reaps the benefits of economies of scale.

While air-conditioning was hailed by founding prime minister Lee Kuan Yew as Singapore's secret to success in the tropics, its comfort comes at the price of up to half of a building's energy consumption.

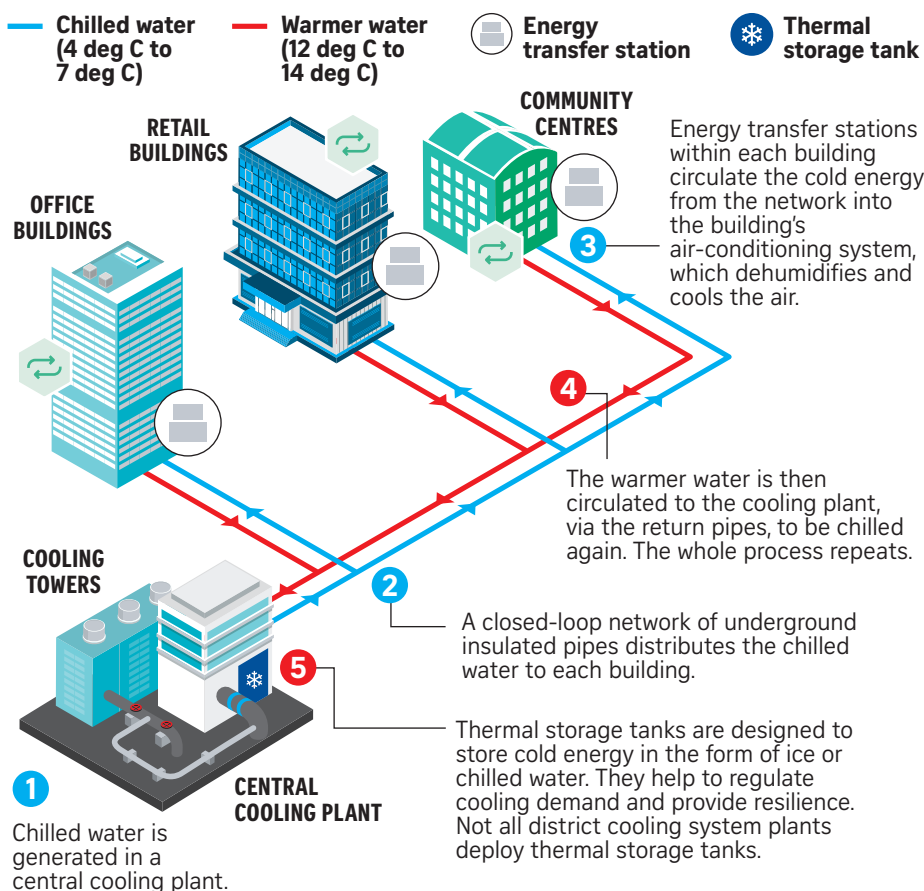
The shared infrastructure from

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## How a district cooling system works

### District cooling system

Imagine a giant air-conditioner that can cool an entire district of buildings, rather than just individual buildings, but one that is greener and more energy efficient. How does it work?



### Benefits of system

#### Carbon emissions

Reduction of carbon emissions by **1,359 tonnes** annually, equivalent to taking **1,236 cars** off the road



#### Energy savings

Over **2,800,000 kilowatt hours** annually, equivalent to the power consumption of more than **900 three-room** HDB households for a year



#### Cost saving

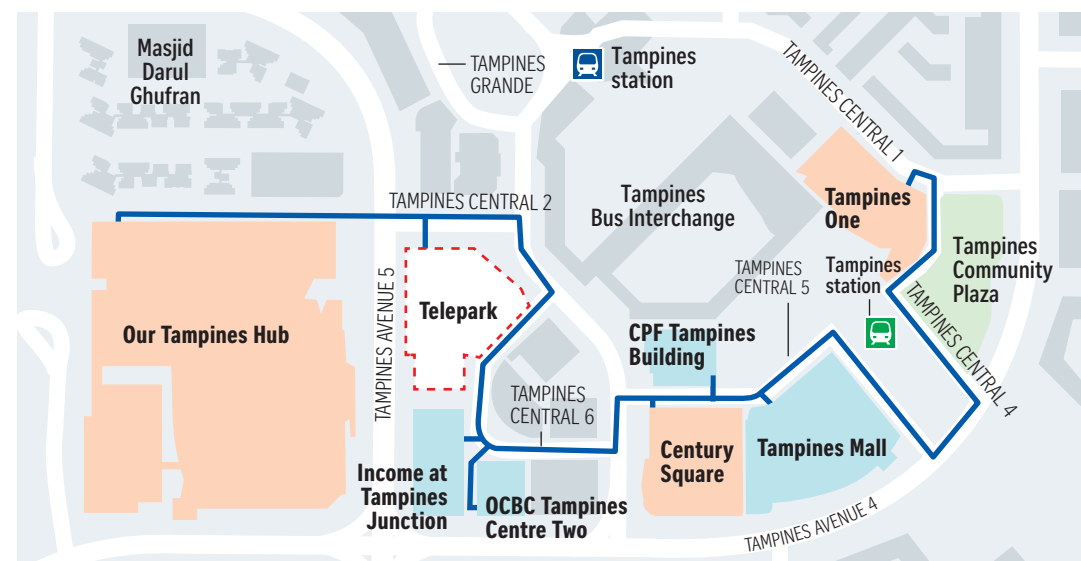
Up to **\$50.8m** of life-cycle economic benefits over 30 years



### Eight buildings in Tampines to be part of network

The distributed cooling system will tap existing chiller plants in several buildings within the network to supply linked buildings with chilled water for their cooling needs.

- Buildings with excess cooling capacity to supply chilled water
- Buildings receiving chilled water
- Building to supply chilled water after first half of 2025
- Underground pipes transporting chilled water



### Differences between district cooling and conventional cooling

#### District cooling

- Instead of having individual chiller plants in each building, a district cooling system produces chilled water on a large scale in a central cooling plant and supplies it to buildings.
- It operates at maximum energy efficiency by selecting the most suitable mix of chillers and using thermal storage tanks to manage electricity demand during peak periods.
- Buildings that tap this centralised system benefit from reduced equipment cost and energy savings, while reducing their emissions and freeing up leasable space.

#### Conventional cooling

- Most buildings have dedicated space for their on-site chiller plants and rooftop cooling towers.
- Building owners need to buy cooling equipment and incur operational and maintenance costs. They may also need to invest in more chillers than necessary as a buffer against potential increases in cooling needs.
- Since the cooling demand of a building fluctuates throughout the day, the chiller in one building is unlikely to operate at its optimal efficiency. On-site cooling equipment, chillers and cooling towers need to operate round the clock regardless of energy demand.